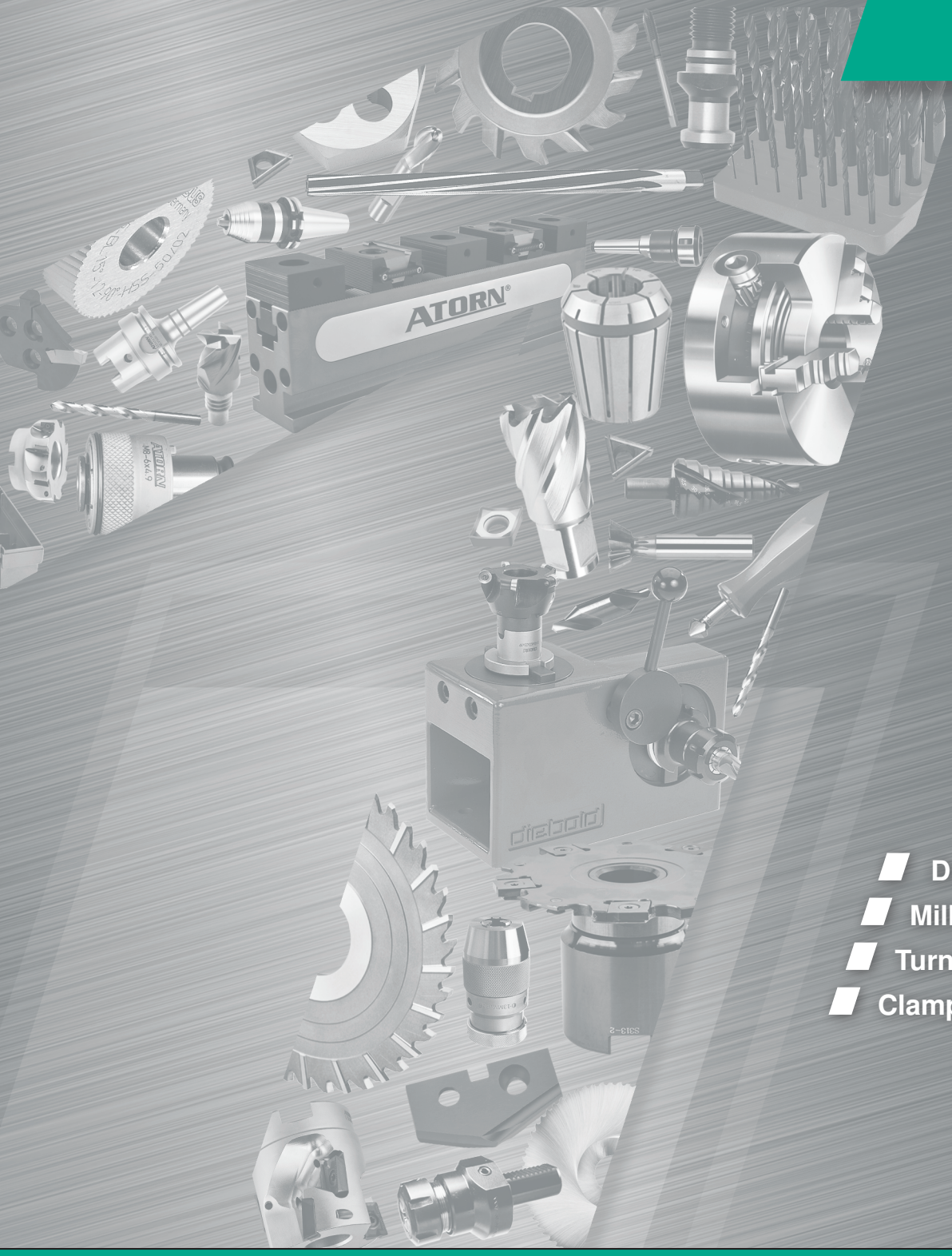
Hommel Hercules
Werkzeughandel

www.hhw.de



- Drilling Tools
- Milling Tools
- Turning Tools
- Clamping Technology

Machining ■ Clamping Technology

2020/21

Customer service

Telephone: +49 (0) 6204 739-0

Online shop:
www.hhw.de/en/Shop

Email:
sales-international@hhw.com

Fax hotline: 0800 0 915910

Hommel Hercules
Werkzeughandel GmbH & Co. KG
Heidelberger Straße 52
68519 Viernheim, Germany

Your customer number: **449 __ __ __ __ __ __ __**

Your contact in field sales

Your contact in the office

Order faster with Quickorder in the HHW ONLINE SHOP: WWW.HHW.DE/EN/SHOP

■ **DELIVERY SERVICE**

- We ship ex works, express or overnight services are available upon request
- Minimum order value of 150 € applies.
- Additional charges for sea worthy packaging.

Special delivery options, such as express or overnight delivery, are available separately.

Drilling tools

- *Twist drills*
- *Stepped drill bits*
- *Indexable insert drills*
- *Core drill bits*
- *Hammer drill bits*
- *Countersinks*
- *Threading tools*
- *Reamers*

Milling tools

- *HSS/HSS-E cutters*
- *Solid carbide cutters*
- *Broaches*
- *Indexable insert cutters*
- *Copy milling cutters*
- *Disc milling cutters*
- *Cutter arbors*
- *Cutter indexable inserts*

Turning tools

- *Lathe blanks*
- *Cutting-off and grooving tools*
- *Thread cutting tools*
- *Turning tools and chisels*
- *Clamp holders and boring bars*
- *Indexable inserts*
- *Knurling tools*
- *Accessories for machine tools*

Clamping technology

- *Tool chucks*
- *Presetters*
- *Tap wrenches and die holders*
- *Lathe tips*
- *Lathe chucks*
- *Clamping tools*
- *Vices*
- *Dividers*
- *Clamping technology*

Information

- *Technical tables*
- *Pictograph overview*
- *Index A . . . Z*
- *Index 0 . . . 9*
- *Forms*

PERFORMANCE REQUIRES QUALITY.

ATORN tools.
The brand with quality, innovation and emotion.

ATORN - the Hommel Hercules tool program with more than 24.000 quality products for machining, grinding and cutting, for clamping and measuring or for setting up your workshop.

In order for an ATORN product to prove itself under the high demands of your daily work, it must undergo numerous quality tests.

And only if it really meets ALL quality requirements is it awarded the ATORN distinction.

ATORN means tested quality. We guarantee this on all our tools.
Hommel Hercules offers you with its top brand ATORN in the professional toolsector a continuously growing and high-quality tool program.

You can find further information on our homepage www.hhw.de

ATORN® Performance requires quality.

WELCOME

Dear valued customer,

of the Hommel Hercules Group,

With an updated and expanded Edition 2020/2021 Hommel Hercules continues to offer a comprehensive and carefully selected range of pre-selected quality tools such as ATORN, online shop equipment and personal protective equipment.

You will find what you are looking for in the new **Hommel Hercules catalog** and receive everything **from a single source.**

Best to browse the catalog right away…

… and get your personal access to our updated webshop if you haven't done so yet.

Please contact the Sales International Department for any further questions.

We look forward to working with you!

Kind regards,

Your Sales International Team

EVERYTHING ONLINE IN THE HHW ONLINE SHOP

Order tools 24/7 via our mobile online platform.

Straight to the point: Detailed descriptions, technological data, high-resolution images and product-specific information will tell you everything you need to know at a glance. Pictograms and additional text will give you a quick overview of the key properties of each product. Our adaptive intelligent search function takes you to the right products even faster!

Orders are easily placed via HHW.DE/EN! Your order will be taken care of immediately.

Our shop can be accessed using any mobile device. No matter which device you are using.

The HHW ONLINE SHOP also offers a variety of functional B2B applications: budgets, user administration, multi-level authorisation procedures, blacklists, individual conditions, offers, multiple shopping baskets...

We are continually improving our ONLINE SHOP to optimise our range of products and functionalities, so that we can provide you with the best possible service at all times.

- **Cost centres**
- **Authorisation systems**
- **Budget function**
- **Multiple shopping baskets**
- **Quick order**
- **Blacklists**
- **Shipment tracking**
- **Returns processing**
- **Offer creation**
- **Newsletter**

THE HOMMEL HERCULES TOOL CATALOG

Over 9.000 new products!

Everything you need for your C-Part Managment

CATALOG VOLUME [1]
Specialist catalogue for machining and clamping technology.

CATALOG VOLUME [2]
Large universal catalogue for tools and machines.

PPE BOX VOLUME [3]
Our PPE box with four topic-based occupational safety catalog and important specialist information is also available
Safety footwear, workwear, gloves, head protection

Hommel Hercules is your competent partner in any process to increase productivity and your success!

Simple ordering process

Each item in the HHW catalogues has an eight-digit article identification number. Example:

55646 = ***five-digit main number***
... 104 = ***three-digit end number***

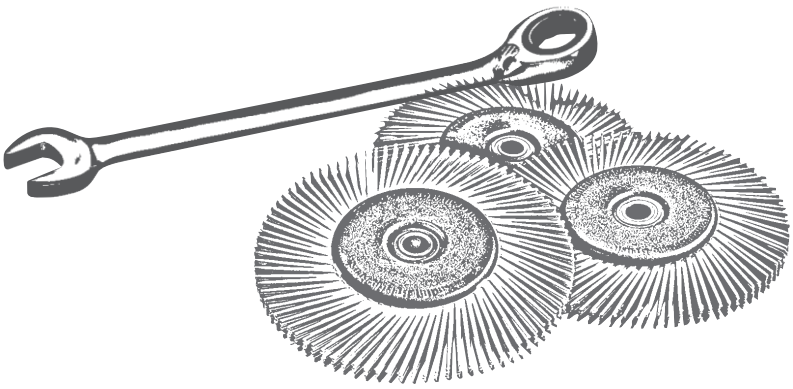
You can easily and accurately place an order with this number.

HHW C-PARTS MANAGEMENT

The requirements of a **tool supplier** today go far beyond what's been necessary in the past. Particularly in the industrial sector, our customers are increasingly looking for a partner that enables them to concentrate on the key aspects to reduce process costs and increase **productivity** in the production process.

Reliable and innovative solutions are essential to implement and achieve your business goals. These requirements, we have developed the innovative ComBee delivery concept. **Constant availability of your C-parts** and an automated ordering process guarantee a seamless and steady supply.

WE KNOW HOW TO HANDLE TOOLS



PPE – PERSONAL PROTECTIVE EQUIPMENT

HHW... the safety expert for you and your employees.

Get your PPE box now! (Volume 3)

Being a system supplier for C-Parts occupational safety and personal protective equpiment is also available.

- Extensive specialised catalogues with over 20,000 selected products
- Providing complete PPE concepts with individual occupational safety plans and/or customized catalogs
- Trained occupational safety application consultants are available for on-site support
- Project planning and revision by certified **experts from our company**
- In-house specialist department for high-quality textile finishing and patch service

PREMIUM PARTNERS AND SERVICES

In addition to the quality of the ATORN brand with around 24,000 tools for all application areas in the industrial, manufacturing and maintenance sectors, Hommel Hercules relies on close cooperation with its trusted sales partners to provide the best possible support for your company.

Benefit from our partnerships with esteemed companies such as MAHR and NACHI.

Experienced workers provide individual advice to and share their expertise with our customers daily.

We offer you a calibration service along with our independent partner. This service can be used when purchasing new measuring and test equipment and for the recalibration of all of your measuring and test equipment.

Manufacturer-independent calibration and measurement technology services are documented using a works or DAkkS calibration certificate (as specified by the customer).

We would be happy to undertake your regrinding service or repair your cutting tools. By repairing indexable insert carrier tools, you can save 60% or more in tool costs.

ATORN® NACHI NACHI Europe GmbH Mahr

MORE THAN JUST THE STANDARD QUALITY AND SAFETY

Simply being up-to-date with

the latest technology isn‘t enough for us.

We use ISO 9001 as the basis for our sustainable quality management process. We have introduced an integrated management system for all areas of the company so that we can continually optimise processes relating to quality by conducting regular analyses.
An interactive **process landscape** has been created and implemented along with a necessary adjustment to the standards (revision).

Hommel Hercules Werkzeughandel GmbH & Co. KG is certified by TUV SÜD Management Service GmbH, which ensures that the requirements of **ISO 9001:2015** are fulfilled.
Our goal is to ensure your satisfaction as our customer and to improve your company‘s productivity.
We are available to you as an **innovative and professional partner** to help firmly anchor certified safety standards within your delivery processes.

Authorised Economic Operator (AEO)
An authorised economic operator is an important role. It refers to a particularly reliable and trustworthy entity that can make use of special advantages within the framework of customs clearance.
Hommel Hercules Werkzeughandel GmbH & Co. KG meets the AEO requirements for „**customs simplification and security“.**

Known consignor
A „known consignor“ is a company with air cargo shipment procedures that comply with special **safety regulations and standards.**
The Viernheim site of Hommel Hercules Werkzeughandel GmbH & Co. KG is listed in the EC database (RAKCD) with an approval number.

ISO 9001 Certified quality management system	TÜV SÜD ISO 9001
Authorised Economic Operator (AEO)	AEO
Known consignor	LBA

GLOBAL BUSINESS
... AVAILABLE TO YOU ON SITE

We stock locally but operate globally.

With **own subsidiaries, external partners and a national branch** network Hommel Hercules operates internationally.

More than 50.000 items are stored on 7000 m² in our modern central warehouse in Viernheim/Germany. This ensures a reliable supply chain.

With **a service level of over 98%** we offer our customers the highest possible delivery capacity.

OUR LOCATIONS

■ **Viernheim (headquarters)**
Heidelberger Straße 52
68519 Viernheim, Germany
Phone: +49 (0) 6204 739-0
Email: info@hhw.de

■ **Chemnitz**
Röhrsdorfer Allee 14
09247 Chemnitz, Germany
Phone: +49 (0) 3722 5993-250
Email: hhwchemnitz@hhw.de

■ **Köln**
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Email: hhwkoeln@hhw.de

■ **Austria**
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Eduard-Kittenberger-Gasse 56
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AT-1230 Vienna, Austria
Phone: +43 1 86548280
Website: www.hommel-seitz.at

■ **Poland**
Hommel Hercules
PL Sp. z o.o.
ul. Działkowa 8
41-506 Chorzów, Poland
Phone: +48 32 20 54110
Website: www.hhw.pl

■ **Czech Republic / Slovakia**
HHW-Hommel Hercules
Werkzeughandel CZ/SK s.r.o.
Novodvorská 803/82
142 00 Prague 4, Czech Republic
Phone: +420 261 711 011
Website: www.hhw.cz

WE DELIVER WORLDWIDE

SUPPLIER OVERVIEW

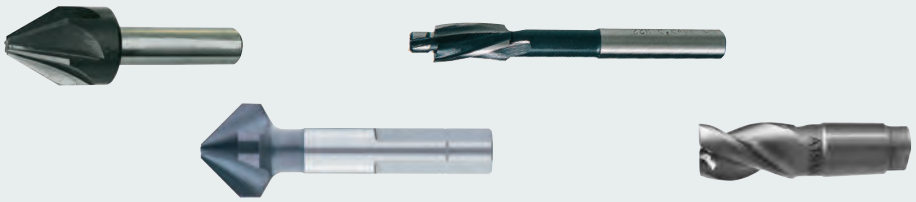
ATORN
HHW
3M
ABUS
AEG POWERTOOLS
ALARM
ALBRECHT
ALZMETALL
AMF
ANKE
apfel
AQURADO
ASW
ata
BAHCO
BÄKA
BALLISTOL
bedrunka+hirth
BENNING
BERG & SCHMID SÄGETECHNIK
BERNSTEIN Electronic-Tools
BESSEY
BILZ
H.BILZ
bimos
Blickle
BMI
BOSCH
brennenstuhl
BROCKHAUS][HEUER
carolus
CEKABA
Centrecator
CERATIZIT
cleancraft
Möbel für Menschen
CRC
DAREX
DIACATOR
DEUMO
DIATEST
DICK
diebold
dribox
DURABLE
Dümmel
DYMO
Elma
ELTEN
EMUGE
ENERPAC
Erdi
ergo.
ewe
ESCHENBACH
FACOM
FAHRION
fein
felo
fetra
FISSO
FLEX
FLOTT
FLUKE
LUX
GEDORE
GESIPA
GKS
GREVEN
GUNZBURGER STEIGTECHNIK
HÄBERLE
HAIMER
HALDER
hanhart
HARTNER
Hartig
HASE
HAWERA
HAZET
HELICOIL plus
HELIOS·PREISSER
HellermannTyton
HOFMANN
Honeywell
HOWARD LEIGHT
IDEAL
INFIELD
JAS
JENOPTIK
JOKARI
KANDY
KAPPES
KÄRCHER
KCL
KERN
kesel
KLAEGER
KlauKe
KLINGSPOR
KNIPEX
KOMET
Kroeplin Längenmesstechnik
KUKKO
kurtz ersa
LENOX
LEATHERMAN
LED LENSER
Leica DISTO™
LINDESA
LINDSTROM
LOC-LINE FLEXI
LÖWE
LUKAS
MAGLITE
Magnescale
Mahr
makita
martor
MELLERT
META
metallkraft
METRINCH
microjet
MICROTEST
Milwaukee
mimatic
MOLDEX
NACHI
Nilfisk ALTO
NOGA
NTRAX
OERLIKON
OLFA
orbitalum
osborn
OTEC
PANDUIT
PARAT
mob
PELTOR
PFERD
Pica
PLANOLITH
plum
qnix
raaco
URSULA RATH
reilang
REINOL
RENISHAW
RENNSTEIG
RHODIUS
RIDGID
RIDGID Peddinghaus
RÖCKLE
ROEMHELD
RÖHM
Rugotest
SAUTER
schneider airsystems
schröder
SCHUNK
Schwenk
schweißkraft
SKYLOTEC
SOHNGEN
Speedglas
Sortimo
SPREITZER
STABILA
STAHLWILLE
STANLEY
STEINEL
STEINWALD
STOKO
sylvac
TAPMATIC
TESA
testo
TICOM
TORK
TOWA
TRESTON
uvex
VBW
VICTORINOX
AVSM
Waldmann
walter
WALTHER PILOT
WD-40
WEBER-HYDRAULIK
Weidmüller
Weller
Wera
wiha
wikus
Yale
ZARGES
zeus
zeus eco
OZMG

- *Twist drills*
- *Micro drills*
- *Bodywork drills*
- *Spiral countersinks (core drills)*
- *Deep hole drills*
- *Stepped drill bits*
- *Centre drills/spotting drills*
- *Taper pin drills*
- *Core drill bits*

10
10.3 – 10.68

- *Solid carbide drills*
- *Solid carbide tap removal tools*
- *Cemented carbide indexable inserts*
- *Indexable insert drills*
- *Stone drills*
- *Hammer drill bits*
- *Impact core drill bits*

11
11.1 – 11.42

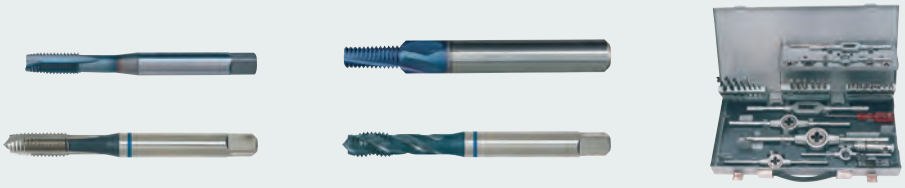


- *Countersinking and deburring tools*
- *Conical countersinks and countersink deburring tools*
- *WPL conical countersinks*
- *Counterbores*
- *Piloted counterbores*

12
12.1 – 12.10

- *Hand reamers*
- *Ball reamers*
- *Quick-helix reamers*
- *Rivet hole reamers*
- *Machine reamers*
- *Stub reamers*
- *Shell reamers*
- *Nozzle reamers*

13
13.1 – 13.12



- *Screw taps*
- *Thread moulds*
- *Solid carbide thread milling cutters*
- *Thread repair kits*
- *Solid carbide tap removal tools*
- *Screw tap extractors*
- *Light arc erosion devices*
- *Thread cutting tool sets*

14
14.1 – 14.88

- *Dies*

15
15.1 – 15.4

Our suppliers for DRILLING TOOLS:

ATORN®
HHW
BOSCH
CUTTING SOLUTIONS BY CERATIZIT
EMUGE
eromobil®
H. BILZ
HARTNER
HAZET®
HELICOIL® plus made by BÖLLHOFF
KOMET®
Milwaukee
NACHI
UNIMAX DER UNIVERSAL-GEWINDEBOHRER

Info — Coatings for machining tools

Advantages:

- Longer service life
- Higher productivity
- Fewer tool changes
- No emulsion due to dry machining
- High-speed machining
- Hard machining
- Lower tool costs

Coating material	TiN	TiCN	TiAlN	Alcrona	Hardlube	Alu-CC	Rocktec 52	Rocktec 65	Ultra-N	Ultra Npro
Micro-hardness (HV 0.05)	2,300	3,000	3,300	3,200	3,000	4,000	3,300	3,600	3,100	6,000
Friction coefficient vs. steel (dry)	0.4	0.4	0.30 - 0.35	0.35	0.15 - 0.20	–	0.4	0.4	–	–
Max. application temperature (°C)	600	400	900	1,100	800	800	900	1,200	900	550
Coating colour	Gold-yellow	Blue-grey	Purple-grey	Blue-grey	Dark grey	Light trans-parent	Grey-blue	Copper-coloured	Brownish-silver	Rainbow colours

Materials / Coatings	Plastics	Non-ferrous metals	AlSi alloys	Al wrought alloys	Low alloy steels	High-alloy steels	Tempered steels up to 52 HRC	Tempered steels up to 65 HRC	Stainless steels	Cast iron	Titanium alloys	Super alloys
TiN	■				■							
TiCN	■				■	■			■	■		
TiAlN	■				■	■	■	■	■	■	■	■
Alcrona	■				■	■				■		
Hardlube	■		■		■	■			■		■	■
Alu-CC	■	■	■	■	■	■			■			
Rocktec 52					■	■	■		■	■		
Rocktec 65								■			■	■
Ultra-N / Ultra Npro	■	■	■	■								

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Overview of pictograms

Direction of application			**No centre cutting,** face milling only possible over the edge of the workpiece
			With centre cutting, plunging and face milling possible (in 3 directions)
Thread type	e.g.		= **F**ine **M**etric thread
Quality	e.g.		= **H**igh-**p**erformance **h**igh-**s**peed **s**teel with cobalt (**E**) alloy and **T**itanium-**a**luminium-**n**itrite coating
Shank design			= Straight shank with **driving surface in accordance** with **DIN 1835 B**
			= Straight shank with **clamping thread in accordance** with **DIN 1835 D**
			= Smooth, **straight** shank in accordance with **DIN 6535 HA** (for solid carbide tools)
			= Straight shank with **driving surface in accordance** with **DIN 6535 HB** (for solid carbide tools)
Spiral angle	e.g.		= Spiral angle of the tool **approx. 39° to the right**
	e.g.		= Spiral angle of the tool **approx. 12° to the left**
Tip angle	e.g.		= Tip angle of the cutting edges **120°**
Tolerance	e.g.		= Cutting edge tolerance in accordance with ISO recommendation R286-1962
Type designation	e.g.		= For normal machinable materials
Material strength	e.g.		= For materials with a strength **up to max. 1000 N/mm²**
	e.g.		= For materials with a strength **over 900 N/mm²**
Very well suited to …			= **Alu**minium
			= **G**rey **c**ast **i**ron
			= **B**rass
			= **Uni**versal
			= Rust-, acid- and heat-resistant and austenitic steels **(V2A, V4A)**

Info — The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use HM grade Coating				P M K H 42 coated	
Designation	**W$^{\pm 0,1}$ mm**	**R$^{\pm 0,05}$ mm**		**18674**	**...**
GTN-2	2,2	0,16	10 pieces		**113**
GTN-3	3,1	0,20	10 pieces		**114**

Info

Twist drill overview (I)

Brand	ATORN	ATORN	HW	HW	ATORN	HW		ATORN	ATORN	HW	ATORN	ATORN	ATORN
Article number	10001	10002	10003	10004	10005	10006	10010	10020	10035	10040	10042	10044	10046
					NEW								
Standard/DIN	338	Factory standard	338	338	338	338	338	338	338	338	338	338	338
Diameter range mm	0.3 - 20	13.5 - 20	0.3 - 16	0.5 - 13	1 - 16	1 - 13	0.3 - 16	1 - 16	1 - 13	0.3 - 16	0.5 - 16	1 - 12	1 - 13
Cutting material	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
Coating	–	–	–	TiN	TiN	–	–	TiN	–	–	–	TiAlN	–
Point angle	118°	118°	118°	118°	118°	135°	118°	118°	118°	118°	130°	130°	130°
Version	Short	Short offset	Short	Short profile.	Short	Short	Short rolled	Short	Short MBS	Short	Short	Short	Short
Type	N	N	N	N	N	Uni	N	N	UNI	N	Ti	N	VA
Catalogue page	10.7	10.8	10.8	10.8	10.10	10.11	10.8	10.11	10.11	10.13	10.14	10.14	10.14
Recommended application	● = well-suited ○ = limited suitability												
Aluminium < 10% Si	○	○	○	○	○	○	○	○	●	○			○
Aluminium > 10% Si	○	○	○	○	○	○	○	○	●	○			○
Copper	○	○	○	○	●	○	○	○	●	○			○
Plastics	○	○	○	○	●		○	○	●	○			
Graphite													
Steel < 520 N	●	●	●	●	●	●	●	●	●	●	●	●	
Steel < 750 N	●	●	●	●	●	●	●	●	●	●	●	●	
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●	●	
Steel < 1100 N				●	●			●	●	●	●	●	
Steel < 1200 N									●	●	●	●	
Steel < 1400 N									●	●		●	
Hardox													
< 50 HRC													
< 60 HRC													
< 67 HRC													
GG	●	●	●	●	●	○	●	●	●			●	
GGG	●	●	●	●	●	○	●	●	●			●	
VA < 900 N					○				○	○	○		○
VA > 900 N					○				○		○		○
Titanium											●		
Titanium alloy					●						●		
Nickel base											●		

Brand	ATORN	ATORN	ATORN	ATORN	HARTNER	HARTNER	HARTNER	ATORN	NACHI	NACHI	HARTNER	HW	ATORN
Article number	10047	10050	10053	10060	10210	10211	10214	10215	10216	10217	10220	10250	10252
				NEW					NEW	NEW			
Standard/DIN	338	338	338	338	338	338	338	338	Factory standard	Factory standard	1899	Factory standard	1897
Diameter range mm	1 - 13	1 - 13	1 - 12	2 - 20	0.5 - 14	0.5 - 15	1.1 - 12	1 - 14	0.5 - 20	2.0 - 32	0.16 - 1.45	2.5 - 5	1 - 16
Cutting material	HSS-Co8	HSS-E	HSS-E	HSS-E	HSS	HSS	HSS-E	HSS-E-PM	HSS-PM	HSS-PM	HSS-E	HSS	HSS
Coating	–	–	TiN	TiAlN	–	–	–	TiN	SG	SG	–	–	–
Point angle	135°	130°	130°	120°/130°	118°	130°	130°	130°	118°/135°	135°	118°	118°	118°
Version	Short	Short	Short	Short	Short	Short	Short	Short	Short	Short	Mini	Extra short	Extra short
Type	N	FS	FS	Uni	H	W	IS	UNI	UNI	UNI	N	N	N
Catalogue page	10.15	10.17	10.17	10.18	10.20	10.20	10.20	10.22	10.23	10.27	10.28	10.28	10.29
Recommended application	● = well-suited ○ = limited suitability												
Aluminium < 10% Si		○	○	○		●	○	○	●	●	○	○	○
Aluminium > 10% Si		○	○	○		●	○	○	●	●	○	○	○
Copper		○	○	○		●	○	○	○	○	○	○	○
Plastics		○	○			○	○	○			○	○	
Graphite					●								
Steel < 520 N	●	●	●	●				●	●	●	●	●	●
Steel < 750 N	●	●	●	●				●	●	●	●	●	●
Steel < 900 N	●	●	●	●				●	●	●	●	●	●
Steel < 1100 N	●	●	●	●				●	●	●	●		
Steel < 1200 N	●	●	●	●				●	●	●	●		
Steel < 1400 N	●	●	●					●					
Hardox													
< 50 HRC													
< 60 HRC													
< 67 HRC													
GG			●	●				●	●	●	●		●
GGG			●	●				●	●	●	●		●
VA < 900 N		○	○	○			○	○	○	○	○		
VA > 900 N		○	○	○			○	○	○	○	○		
Titanium	○										○		
Titanium alloy	○								●	●			
Nickel base	○												

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Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

Info

Twist drill overview (II)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	HW	HW	ATORN	ATORN	HW	HARTNER	ATORN	HARTNER
Article number	10255	10257	10259	10260	10261	10262	10263	10404	10406	10407	10408	10410	10421
				NEW			NEW						
Standard/DIN	1897	1897	1897	1897	1897	1897	Factory standard	340	340	340	340	340	1869
Diameter range mm	1 - 13	1 - 20	1 - 14	1 - 20	1 - 14	2 - 18	2 - 13	1 - 12	0.6 - 16	1 - 13	2 - 10	1 - 12	2 - 12
Cutting material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS	HSS	HSS	HSS	HSS
Coating	TiN	–	–	TiAlN	TiN	AlCrN	-	–	–	–	–	TiN	–
Point angle	130°	130°	118°	120°/130°/140°	130°	135°	135°	130°	118°	130°	130°	130°	130°
Version	Extra short	Extra short	Extra short MBS	Extra short	Extra short	Short	Short	Long	Long	Long	Long	Long	Overlong
Type	VA	N	UNI	UNI	UNI	Hardox	Hardox/VA	VA	N	FS	FW	FN	FN
Catalogue page	10.29	10.29	10.30	10.31	10.32	10.33	10.33	10.34	10.34	10.36	10.36	10.37	10.39

Recommended application ● = well-suited ○ = limited suitability

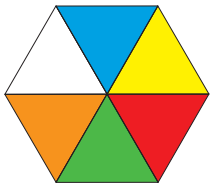
Aluminium < 10% Si	○	○	○	○	●						●	○	○
Aluminium > 10% Si	○	○	○	○	●						●	○	
Copper	○	○	○	○	●			○			●	○	
Plastics		○	○		●								
Graphite													
Steel < 520 N	●	●	●	●	●		●		●	●	●	●	●
Steel < 750 N	●	●	●	●	●		●		●	●		●	●
Steel < 900 N	●	●	●	●	●		●		●	●		●	●
Steel < 1100 N	●	●	●	●	●		●		●	●		●	●
Steel < 1200 N		●		●	●		●	●					
Steel < 1400 N					●	●	●	●					
Hardox				●		●	●						
< 50 HRC													
< 60 HRC													
< 67 HRC													
GG	●	●	●	●	●				●	●		●	●
GGG	●	●	●	●	●				●	●		●	●
VA < 900 N		○	○	○			○	○	○				○
VA > 900 N		○	○	○			○	○	○				
Titanium		●					●		○				
Titanium alloy									○				
Nickel base									○				

Brand	HARTNER	NACHI	NACHI	NACHI	NACHI	ATORN		HARTNER	ATORN	ATORN	HARTNER	HARTNER	
Article number	10422	10423	10424	10425	10426	10508	10510	10511	10514	10526	10610	10621	10632
		NEW	NEW	NEW	NEW								
Standard/DIN	1869	338	339	1869	1869	345	345	345	345	345	341	1870	343
Diameter range mm	2 - 8.5	1 - 13	1 - 13	1 - 13	3 - 13	5 - 60	10 - 50	10.5 - 28	10 - 35	11 - 32	10 - 35	8 - 30	7.8 - 30
Cutting material	HSS	HSS-Co8	HSS-Co8	HSS-Co8	HSS-Co8	HSS	HSS	HSS	HSS-E	HSS-E	HSS	HSS	HSS
Coating	TiN	-	AG	AG	AG	–	–	TiN	–	–	–	–	–
Point angle	130°	118°	118°	118°	118°	118°	118°	118°	118°	130°	118°	130°	120°
Version	Overlong	Short	Long	Overlong	Overlong	MK shank short	MK shank short	MK shank short	MK shank short	MK shank short	MK shank long	MK shank overlong	Z3
Type	FN	N	N	N	N	N	N	N	N	VA	N	FN	N
Catalogue page	10.39	10.16	10.34	10.38	10.39	10.40	10.40	10.41	10.41	10.41	10.42	10.42	10.43

Recommended application ● = well-suited ○ = limited suitability

Aluminium < 10% Si						○	○	○				○	○
Aluminium > 10% Si						○	○	○				○	○
Copper						○	○	○				○	○
Plastics						○	○						
Graphite													
Steel < 520 N	●	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 1100 N	●	●	●	●	●				●	●			●
Steel < 1200 N		●	●	●	●				●	●			
Steel < 1400 N										●			
Hardox													
< 50 HRC													
< 60 HRC													
< 67 HRC													
GG	●	●	●	●	●	●	●	●	●		●	●	●
GGG	●	●	●	●	●	●	●	●	●		●	●	●
VA < 900 N										○			○
VA > 900 N										○			
Titanium										○			
Titanium alloy										○			
Nickel base										○			

Info The CERATIZIT MasterGuide



Material level

The CERATIZIT MasterGuide divides the materials according to VDI 3323 into six main groups (P, M, K, N, S, H). Each group is assigned a colour code that is partly already known from ISO 513.

Blue: Steel
Free cutting, case hardening, tempering and structural steels

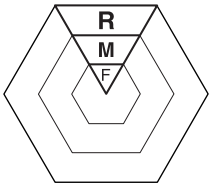
Yellow: stainless steel
Ferritic Cr steels, austenitic CrNi steels, martensitic Cr steels, duplex steels

Red: Cast iron
Grey cast iron, malleable cast iron, spheroidal cast iron, vermicular cast iron, sintered iron

Green: Non-ferrous metals and non-metals
Al-wrought, cast alloys, copper, copper alloys, non-metallic materials

Orange: high heat-resistant alloys/titanium
Ni/Co-based alloys, Ti alloys

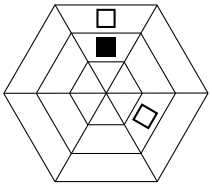
White: hard materials
Hardened steels (≥ 45 HRC), hard cast iron, hard cast iron materials



Machining level

Each colour code field is divided into three levels by lines.
These identify the respective machining types:

R = Rough chip removal **M = Medium machining** **F = Fine machining**



Application level

The ideal application area of an indexable insert is indicated by a full square. Extended application areas are indicated by an empty square symbol. In this way the CERATIZIT MasterGuide provides an overview when purchasing, selecting and machining, and reduces the supplies of grades and geometries in stock.

■ Main application □ Advanced application

The right indexable insert at a glance

Main application:
Medium, fine and rough chip machining of steel.

Advanced application:
Medium chip removal of high heat-resistant alloys.
Medium, fine and rough chip removal of stainless steels.

10001 Short twist drills

DIN 338 | N | 118° | HSS | ≤ 900 N/mm²

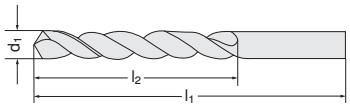
ATORN®

Design
Straight shank, right cutting, cone-shaped section finish. From Ø 1.0 mm thinned chisel edge.

Quality
HSS ground for steels up to 900 N/mm².

10001

Note:
Quality drills for the most demanding applications.



HSS ground

d_1 h8 mm	l_2 mm	l_1 mm		10001	...
0.3	3	19	10 pcs.		609
0.35	4	19	10 pcs.		613
0.4	5	20	10 pcs.		618
0.45	5	20	10 pcs.		622
0.5	6	22	10 pcs.		626
0.55	7	24	10 pcs.		630
0.6	7	24	10 pcs.		635
0.65	8	26	10 pcs.		640
0.7	9	28	10 pcs.		644
0.75	10	30	10 pcs.		649
0.8	10	30	10 pcs.		654
0.85	10	30	10 pcs.		659
0.9	11	32	10 pcs.		663
0.95	11	32	10 pcs.		667
1.0	12	34	10 pcs.		672
1.1	14	36	10 pcs.		679
1.2	16	38	10 pcs.		688
1.3	16	38	10 pcs.		697
1.4	18	40	10 pcs.		699
1.5	18	40	10 pcs.		704
1.6	20	43	10 pcs.		712
1.7	20	43	10 pcs.		717
1.75	22	46	10 pcs.		721
1.8	22	46	10 pcs.		724
1.9	22	46	10 pcs.		730
1.95	24	49	10 pcs.		734
2.0	24	49	10 pcs.		737
2.05	24	49	10 pcs.		740
2.1	24	49	10 pcs.		741
2.2	27	53	10 pcs.		743
2.3	27	53	10 pcs.		745
2.4	30	57	10 pcs.		750
2.5	30	57	10 pcs.		753
2.6	30	57	10 pcs.		757
2.7	33	61	10 pcs.		759
2.8	33	61	10 pcs.		762
2.9	33	61	10 pcs.		764
3.0	33	61	10 pcs.		767
3.1	36	65	10 pcs.		771
3.2	36	65	10 pcs.		774
3.25	36	65	10 pcs.		775
3.3	36	65	10 pcs.		776
3.4	39	70	10 pcs.		778
3.5	39	70	10 pcs.		780
3.6	39	70	10 pcs.		782
3.7	39	70	10 pcs.		784
3.8	43	75	10 pcs.		786
3.9	43	75	10 pcs.		788
4.0	43	75	10 pcs.		791
4.1	43	75	10 pcs.		794
4.2	43	75	10 pcs.		796
4.25	43	75	10 pcs.		797
4.3	47	80	10 pcs.		798
4.4	47	80	10 pcs.		800
4.5	47	80	10 pcs.		802

HSS ground

d_1 h8 mm	l_2 mm	l_1 mm		10001	...
4.6	47	80	10 pcs.		804
4.7	47	80	10 pcs.		806
4.8	52	86	10 pcs.		809
4.9	52	86	10 pcs.		812
5.0	52	86	10 pcs.		814
5.1	52	86	10 pcs.		818
5.2	52	86	10 pcs.		820
5.3	52	86	10 pcs.		822
5.4	57	93	10 pcs.		824
5.5	57	93	10 pcs.		825
5.6	57	93	10 pcs.		827
5.7	57	93	10 pcs.		829
5.8	57	93	10 pcs.		831
5.9	57	93	10 pcs.		833
6.0	57	93	10 pcs.		835
6.1	63	101	-		837
6.2	63	101	-		839
6.3	63	101	-		841
6.4	63	101	-		843
6.5	63	101	-		844
6.6	63	101	-		845
6.7	63	101	-		847
6.75	69	109	-		848
6.8	69	109	-		849
6.9	69	109	-		850
7.0	69	109	-		852
7.1	69	109	-		854
7.2	69	109	-		855
7.3	69	109	-		857
7.4	69	109	-		858
7.5	69	109	-		859
7.6	75	117	-		860
7.7	75	117	-		861
7.8	75	117	-		863
7.9	75	117	-		864
8.0	75	117	-		867
8.1	75	117	-		869
8.2	75	117	-		870
8.3	75	117	-		872
8.4	75	117	-		873
8.5	75	117	-		875
8.6	81	125	-		877
8.7	81	125	-		878
8.8	81	125	-		881
8.9	81	125	-		882
9.0	81	125	-		883
9.1	81	125	-		885
9.2	81	125	-		887
9.3	81	125	-		889
9.4	81	125	-		890
9.5	81	125	-		891
9.6	87	133	-		892
9.7	87	133	-		893
9.8	87	133	-		895
9.9	87	133	-		896

HSS ground

d_1 h8 mm	l_2 mm	l_1 mm		10001	...
10.0	87	133	-		897
10.1	87	133	-		898
10.2	87	133	-		899
10.25	87	133	-		900
10.3	87	133	-		901
10.4	87	133	-		903
10.5	87	133	-		904
10.6	87	133	-		905
10.7	94	142	-		906
10.8	94	142	-		908
10.9	94	142	-		909
11.0	94	142	-		910
11.1	94	142	-		911
11.2	94	142	-		912
11.4	94	142	-		914
11.5	94	142	-		915
11.6	94	142	-		916
11.7	94	142	-		917
11.75	94	142	-		918
11.8	94	142	-		919
11.9	101	151	-		920
12.0	101	151	-		921
12.1	101	151	-		922
12.2	101	151	-		923
12.3	101	151	-		925
12.4	101	151	-		926
12.5	101	151	-		927
12.6	101	151	-		928
12.7	101	151	-		929
12.8	101	151	-		931
12.9	101	151	-		932
13.0	101	151	-		933
13.25	108	160	-		936
13.5	108	160	-		937
13.75	108	160	-		940
13.8	108	160	-		941
14.0	108	160	-		943
14.25	114	169	-		946
14.5	114	169	-		948
14.75	114	196	-		949
15.0	114	169	-		951
15.25	120	178	-		954
15.5	120	178	-		955
15.75	120	178	-		956
16.0	120	178	-		957
16.5	125	184	-		965
17.0	125	184	-		970
17.5	130	191	-		975
18.0	130	191	-		980
18.5	135	198	-		985
19.0	135	198	-		990
19.5	140	205	-		995
20.0	140	205	-		999

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

( ) = Items with prices in brackets partly available from stock.

Twist drill

10002 Short twist drills

Norm | N | 118° | HSS | ≤ 900 N/mm²

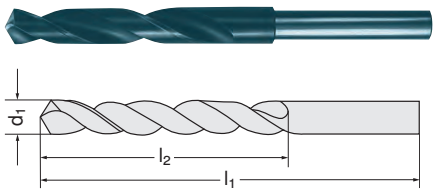
ATORN®

Design
- Offset straight shank 12.7 mm
- Right cutting
- Cone-shaped section finish

Quality
HSS ground for steels up to 900 N/mm².

Note:
Quality drills for the most demanding applications.

10002



HSS ground

d_1 h8 mm	l_2 mm	l_1 mm	10002 ...
13.5	82	156	202
14.0	82	156	205
14.5	83	157	207
15.0	83	157	209
15.5	83	157	211
16.0	83	157	213

HSS ground

d_1 h8 mm	l_2 mm	l_1 mm	10002 ...
16.5	84	158	214
17.0	84	158	215
17.5	84	158	216
18.0	84	158	217
19.0	84	158	219
20.0	84	158	221

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

10003 - 10010 Short twist drills

DIN 338 | N | 118° | ≤ 900 N/mm²

10003
HW
Design
- Straight shank
- Right cutting
- Cone-shaped section finish

Quality
HSS ground for steels up to 900 N/mm².

Note:
Affordable HSS ground design.

10004
HW
Design
- Normal core strength without ascending core
- Precise drill point
- High concentricity
- Drills for production

Quality
HSS/TiN profile-ground for steels up to 900 N/mm².

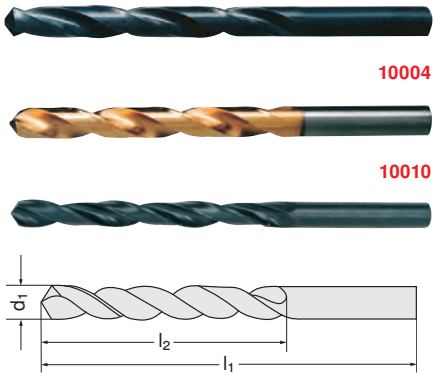
10010
Design
- Straight shank
- Right cutting
- Precision-roll forged

Quality
HSS precision-roll forged for steels up to 900 N/mm².

Note
No structural interruption, therefore resilient and suitable for robust drilling applications (e.g. hand drill).

HSS | HSS TiN | HSS

10003 | 10004 | 10010



d_1 h8 mm	l_2 mm	l_1 mm		HW 10003	HW ... 10004	... 10010 ...
0.3	3	19	10 pcs.	101		101
0.4	5	20	10 pcs.	102		102
0.5	6	22	10 pcs.	103	050	103
0.6	7	24	10 pcs.	104	060	104
0.7	9	28	10 pcs.	105	070	105
0.8	10	30	10 pcs.	106	080	106
0.9	11	32	10 pcs.	107	090	107
1.0	12	34	10 pcs.	108	100	108
1.1	14	36	10 pcs.	109	110	109
1.2	16	38	10 pcs.	110	120	110
1.3	16	38	10 pcs.	111	130	111
1.4	18	40	10 pcs.	112	140	112
1.5	18	40	10 pcs.	113	150	113
1.6	20	43	10 pcs.	114	160	114
1.7	20	43	10 pcs.	115	170	115
1.8	22	46	10 pcs.	116	180	116
1.9	22	46	10 pcs.	117	190	117
2.0	24	49	10 pcs.	118	200	118
2.1	24	49	10 pcs.	119	210	119
2.2	27	53	10 pcs.	120	220	120
2.3	27	53	10 pcs.	121	230	121

d_1 h8 mm	l_2 mm	l_1 mm		HW 10003	HW ... 10004	... 10010 ...
2.4	30	57	10 pcs.	122	240	122
2.5	30	57	10 pcs.	123	250	123
2.6	30	57	10 pcs.	124	260	124
2.7	33	61	10 pcs.	125	270	125
2.8	33	61	10 pcs.	126	280	126
2.9	33	61	10 pcs.	127	290	127
3.0	33	61	10 pcs.	128	300	128
3.1	36	65	10 pcs.	129	310	129
3.2	36	65	10 pcs.	130	320	130
3.3	36	65	10 pcs.	131	330	131
3.4	39	70	10 pcs.	132	340	132
3.5	39	70	10 pcs.	133	350	133
3.6	39	70	10 pcs.	134	360	134
3.7	39	70	10 pcs.	135	370	135
3.8	43	75	10 pcs.	136	380	136
3.9	43	75	10 pcs.	137	390	137
4.0	43	75	10 pcs.	138	400	138
4.1	43	75	10 pcs.	139	410	139
4.2	43	75	10 pcs.	140	420	140
4.3	47	80	10 pcs.	141	430	141
4.4	47	80	10 pcs.	142	440	142

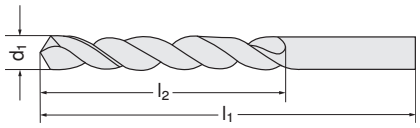
Continued ▶

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10003 - 10010 Short twist drills

DIN 338 | N | 118° | ≤ 900 N/mm²

Continued



d_1 h8 mm	l_2 mm	l_1 mm		10003	... 10004	... 10010	...
4.5	47	80	10 pcs.	143	450	143	
4.6	47	80	10 pcs.	144	460	144	
4.7	47	80	10 pcs.	145	470	145	
4.8	52	86	10 pcs.	146	480	146	
4.9	52	86	10 pcs.	147	490	147	
5.0	52	86	10 pcs.	148	500	148	
5.1	52	86	10 pcs.	149	510	149	
5.2	52	86	10 pcs.	150	520	150	
5.3	52	86	10 pcs.	151	530	151	
5.4	57	93	10 pcs.	152	540	152	
5.5	57	93	10 pcs.	153	550	153	
5.6	57	93	10 pcs.	154	560	154	
5.7	57	93	10 pcs.	155	570	155	
5.8	57	93	10 pcs.	156	580	156	
5.9	57	93	10 pcs.	157	590	157	
6.0	57	93	10 pcs.	158	600	158	
6.1	63	101	10 pcs.	159	610	159	
6.2	63	101	10 pcs.	160	620	160	
6.3	63	101	10 pcs.	161	630	161	
6.4	63	101	10 pcs.	162	640	162	
6.5	63	101	10 pcs.	163	650	163	
6.6	63	101	10 pcs.	164	660	164	
6.7	63	101	10 pcs.	165	670	165	
6.8	69	109	10 pcs.	166	680	166	
6.9	69	109	10 pcs.	167	690	167	
7.0	69	109	10 pcs.	168	700	168	
7.1	69	109	10 pcs.	169	710	169	
7.2	69	109	10 pcs.	170	720	170	
7.3	69	109	10 pcs.	171	730	171	
7.4	69	109	10 pcs.	172	740	172	
7.5	69	109	10 pcs.	173	750	173	
7.6	75	117	5 pcs.	174	760	174	
7.7	75	117	5 pcs.	175	770	175	
7.8	75	117	5 pcs.	176	780	176	
7.9	75	117	5 pcs.	177	790	177	
8.0	75	117	5 pcs.	178	800	178	
8.1	75	117	5 pcs.	179	810	179	
8.2	75	117	5 pcs.	180	820	180	

d_1 h8 mm	l_2 mm	l_1 mm		10003	... 10004	... 10010	...
8.3	75	117	5 pcs.	181	830	181	
8.4	75	117	5 pcs.	182	840	182	
8.5	75	117	5 pcs.	183	850	183	
8.6	81	125	5 pcs.	184	860	184	
8.7	81	125	5 pcs.	185	870	185	
8.8	81	125	5 pcs.	186	880	186	
8.9	81	125	5 pcs.	187	890	187	
9.0	81	125	5 pcs.	188	900	188	
9.1	81	125	5 pcs.	189	910	189	
9.2	81	125	5 pcs.	190	920	190	
9.3	81	125	5 pcs.	191	930	191	
9.4	81	125	5 pcs.	192	940	192	
9.5	81	125	5 pcs.	193	950	193	
9.6	87	133	5 pcs.	194	960	194	
9.7	87	133	5 pcs.	195	970	195	
9.8	87	133	5 pcs.	196	980	196	
9.9	87	133	5 pcs.	197	990	197	
10.0	87	133	5 pcs.	198	991	198	
10.1	87	133	5 pcs.			199	
10.2	87	133	5 pcs.	200	992	200	
10.5	87	133	5 pcs.	203	993	203	
10.8	94	142		206		206	
11.0	94	142	-	208	994	208	
11.2	94	142	-	210		210	
11.5	94	142	-	213	995	213	
11.8	94	142	-	216		216	
12.0	101	151	-	218	996	218	
12.2	101	151	-	220		220	
12.5	101	151	-	223	997	223	
12.8	101	151	-	226		226	
13.0	101	151	-	228	998	228	
13.5	108	160	-	233		233	
14.0	108	160	-	243		243	
14.5	114	169	-	248		248	
15.0	114	169	-	253		253	
15.5	120	178	-	258		258	
16.0	120	178	-	263		263	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10003																	
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40
10004																	
70–80	40–70	25–40	30–36	28–32	20–28	13–20	-	-	-	-	-	-	-	-	-	24–40	20–22
10010																	
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

( ) = Items with prices in brackets partly available from stock.

Twist drill

10005 Short twist drill TiN head coating

DIN 338 | N | 118° | HSS TiN | Uni

ATORN®

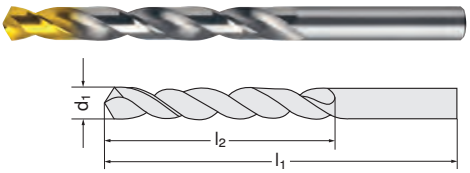
Design
- Right cutting
- Cone-shaped section finish
- Tip angle 118°
- With thinned chisel edge

Advantages:
- For universal use
- Reduction in tool costs thanks to the TiN head coating
- Bare flute for optimised chip removal

Applications
For universal use up to 1000 N/mm².

Note:
Drills for production.
Art. no. 10005 505 incl. core drill (Ø 3.3/4.2/6.8/10.2 mm).

10005 010-160



NEW

10005 503

10005 504

Set size mm	Number of drills	Increments of mm	Set 10005	...
1.0 - 5.9	50	0.10		501
6.0 - 10.0	41	0.10		502
1.0 - 10.0	19	0.50		503
1.0 - 13.0	25	0.50		504
1.0 - 10.5	24	0.50		505

HSS/TiN

d_1 h8 mm	l_2 mm	l_1 mm		10005	...
1.0	12	34	10 pcs.		010
1.1	14	36	10 pcs.		011
1.2	16	38	10 pcs.		012
1.3	16	38	10 pcs.		013
1.4	18	40	10 pcs.		014
1.5	18	40	10 pcs.		015
1.6	20	43	10 pcs.		016
1.7	20	43	10 pcs.		017
1.8	22	46	10 pcs.		018
1.9	22	46	10 pcs.		019
2.0	24	49	10 pcs.		020
2.1	24	49	10 pcs.		021
2.2	27	53	10 pcs.		022
2.3	27	53	10 pcs.		023
2.4	30	57	10 pcs.		024
2.5	30	57	10 pcs.		025
2.6	30	57	10 pcs.		026
2.7	33	61	10 pcs.		027
2.8	33	61	10 pcs.		028
2.9	33	61	10 pcs.		029
3.0	33	61	10 pcs.		030
3.1	36	65	10 pcs.		031
3.2	36	65	10 pcs.		032
3.3	36	65	10 pcs.		033
3.4	39	70	10 pcs.		034
3.5	39	70	10 pcs.		035
3.6	39	70	10 pcs.		036
3.7	39	70	10 pcs.		037
3.8	43	75	10 pcs.		038
3.9	43	75	10 pcs.		039
4.0	43	75	10 pcs.		040
4.1	43	75	10 pcs.		041
4.2	43	75	10 pcs.		042
4.3	47	80	10 pcs.		043
4.4	47	80	10 pcs.		044
4.5	47	80	10 pcs.		045
4.6	47	80	10 pcs.		046

HSS/TiN

d_1 h8 mm	l_2 mm	l_1 mm		10005	...
4.7	47	80	10 pcs.		047
4.8	52	86	10 pcs.		048
4.9	52	86	10 pcs.		049
5.0	52	86	10 pcs.		050
5.1	52	86	10 pcs.		051
5.2	52	86	10 pcs.		052
5.3	52	86	10 pcs.		053
5.4	57	93	10 pcs.		054
5.5	57	93	10 pcs.		055
5.6	57	93	10 pcs.		056
5.7	57	93	10 pcs.		057
5.8	57	93	10 pcs.		058
5.9	57	93	10 pcs.		059
6.0	57	93	10 pcs.		060
6.1	63	101	-		061
6.2	63	101	-		062
6.3	63	101	-		063
6.4	63	101	-		064
6.5	63	101	-		065
6.6	63	101	-		066
6.7	63	101	-		067
6.8	69	109	-		068
6.9	69	109	-		069
7.0	69	109	-		070
7.1	69	109	-		071
7.2	69	109	-		072
7.3	69	109	-		073
7.4	69	109	-		074
7.5	69	109	-		075
7.6	75	117	-		076
7.7	75	117	-		077
7.8	75	117	-		078
7.9	75	117	-		079
8.0	75	117	-		080
8.1	75	117	-		081
8.2	75	117	-		082
8.3	75	117	-		083

HSS/TiN

d_1 h8 mm	l_2 mm	l_1 mm		10005	...
8.4	75	117	-		084
8.5	75	117	-		085
8.6	81	125	-		086
8.7	81	125	-		087
8.8	81	125	-		088
8.9	81	125	-		089
9.0	81	125	-		090
9.1	81	125	-		091
9.2	81	125	-		092
9.3	81	125	-		093
9.4	81	125	-		094
9.5	87	125	-		095
9.6	87	133	-		096
9.7	87	133	-		097
9.8	87	133	-		098
9.9	87	133	-		099
10.0	87	133	-		100
10.1	87	133	-		101
10.2	87	133	-		102
10.5	87	133	-		105
10.8	94	142	-		108
11.0	94	142	-		110
11.2	94	142	-		112
11.5	94	142	-		115
11.8	94	142	-		118
12.0	101	151	-		120
12.2	101	151	-		122
12.5	101	151	-		125
12.8	101	151	-		128
13.0	101	151	-		130
13.5	108	160	-		135
14.0	108	160	-		140
14.5	114	169	-		145
15.0	114	169	-		150
15.5	114	169	-		155
16.0	120	178	-		160

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
-	-	18–90	30–36	28–32	28–32	20–28	-	-	-	-	-	-	10–12	8–10	7–9	24–40	15–30

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10006 Multi-twist drills

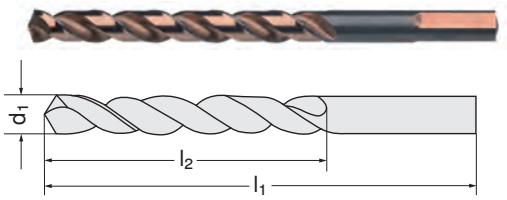
DIN 338 | 135° | ≈ 40° | 5xD | HSS | Uni

Design
- Straight shank with 3-surface cut from Ø 5.5 mm
- Relief grinding with special surface treatment

Advantage:
- Optimal power transmission and fixing in the drill chuck
- Good adhesion of the lubricant
- Fast and reliable chip removal

Quality
HSS ground for steels up to 900 N/mm², V2A steels, iron, cast iron, non-ferrous base metals, aluminium as well as plastics and wood.

10006



d1 h8 mm	l2 mm	l1 mm		HSS ground 10006	...
1.0	12	34	10 pcs.		010
1.5	18	40	10 pcs.		015
2.0	24	49	10 pcs.		020
2.5	30	57	10 pcs.		025
3.0	33	61	10 pcs.		030
3.3	36	65	10 pcs.		033
3.5	39	70	10 pcs.		035
4.0	43	75	10 pcs.		040
4.2	43	75	10 pcs.		042
4.5	47	80	10 pcs.		045
5.0	52	86	10 pcs.		050
5.5	57	93	10 pcs.		055
6.0	57	93	10 pcs.		060
6.5	63	101	10 pcs.		065

d1 h8 mm	l2 mm	l1 mm		HSS ground 10006	...
6.8	69	109	10 pcs.		068
7.0	69	109	10 pcs.		070
7.5	69	109	10 pcs.		075
8.0	75	117	10 pcs.		080
8.5	75	117	10 pcs.		085
9.0	75	117	10 pcs.		090
9.5	81	125	10 pcs.		095
10.0	81	125	5 pcs.		100
10.2	87	133	5 pcs.		102
10.5	87	133	5 pcs.		105
11.0	94	142	5 pcs.		110
12.0	101	151	5 pcs.		120
13.0	101	151	5 pcs.		130

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	-

10020 - 10035 Short twist drills

DIN 338 | 118°

ATORN®

10020
Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- Thinned chisel edge
- High concentricity
- Long service life

Quality
HSS/TiN ground for steels up to 1200 N/mm², cast iron, graphite, brass etc.

Note:
Drills for production.

10035
Multi-range twist drill MBS 1200
Design
- Straight shank
- Right cutting
- Special point thinning
- 4-surface cut

Quality
HSS-E ground.

Note:
Universal use, smooth running, low torque, high dimensional accuracy, optimal chip evacuation thanks to round groove profile.

N | HSS TiN | ≤ 1100 N/mm²

10020

HSS-E | Uni

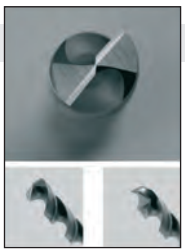
10035

Continued ▶

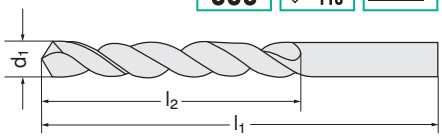
Twist drill

10020 - 10035 Short twist drills

Continued



DIN 338 | 118°



d_1 h8 mm	l_2 mm	l_1 mm		HSS/TiN 10020	...	MBS 1200 10035	...
1.0	12	34	10 pcs.		605		010
1.1	14	36	10 pcs.		606		011
1.2	16	38	10 pcs.		608		012
1.3	16	38	10 pcs.		610		013
1.4	18	40	10 pcs.		612		014
1.5	18	40	10 pcs.		614		015
1.6	20	43	10 pcs.		615		016
1.7	20	43	10 pcs.		617		017
1.8	22	46	10 pcs.		618		018
1.9	22	46	10 pcs.		619		019
2.0	24	49	10 pcs.		620		020
2.1	24	49	10 pcs.		622		021
2.2	27	53	10 pcs.		624		022
2.3	27	53	10 pcs.		626		023
2.4	30	57	10 pcs.		627		024
2.5	30	57	10 pcs.		629		025
2.6	30	57	10 pcs.		630		026
2.7	33	61	10 pcs.		631		027
2.8	33	61	10 pcs.		633		028
2.9	33	61	10 pcs.		640		029
3.0	33	61	10 pcs.		642		030
3.1	36	65	10 pcs.		644		031
3.2	36	65	10 pcs.		645		032
3.3	36	65	10 pcs.		646		033
3.4	39	70	10 pcs.		647		034
3.5	39	70	10 pcs.		648		035
3.6	39	70	10 pcs.		650		036
3.7	39	70	10 pcs.		651		037
3.8	43	75	10 pcs.		652		038
3.9	43	75	10 pcs.		653		039
4.0	43	75	10 pcs.		655		040
4.1	43	75	10 pcs.		656		041
4.2	43	75	10 pcs.		658		042
4.3	47	80	10 pcs.		659		043
4.4	47	80	10 pcs.		660		044
4.5	47	80	10 pcs.		661		045
4.6	47	80	10 pcs.		662		046
4.7	47	80	10 pcs.		663		047
4.8	52	86	10 pcs.		664		048
4.9	52	86	10 pcs.		665		049
5.0	52	86	10 pcs.		666		050
5.1	52	86	10 pcs.		667		051
5.2	52	86	10 pcs.		668		052
5.3	52	86	10 pcs.		669		053
5.4	57	93	10 pcs.		670		054
5.5	57	93	10 pcs.		671		055
5.6	57	93	10 pcs.		672		056
5.7	57	93	10 pcs.		673		057
5.8	57	93	10 pcs.		674		058
5.9	57	93	10 pcs.		675		059
6.0	57	93	10 pcs.		676		060
6.1	63	101	-	St<7	677		061

d_1 h8 mm	l_2 mm	l_1 mm		HSS/TiN 10020	...	MBS 1200 10035	...
6.2	63	101	-		678		062
6.3	63	101	-		679		063
6.4	63	101	-		680		064
6.5	63	101	-		681		065
6.6	63	101	-		682		066
6.7	63	101	-		683		067
6.8	69	109	-		684		068
6.9	69	109	-		685		069
7.0	69	109	-		686		070
7.1	69	109	-		687		071
7.2	69	109	-		688		072
7.3	69	109	-		689		073
7.4	69	109	-		690		074
7.5	69	109	-		691		075
7.6	75	117	-		692		076
7.7	75	117	-		693		077
7.8	75	117	-		694		078
7.9	75	117	-		695		079
8.0	75	117	-		696		080
8.1	75	117	-		697		081
8.2	75	117	-		698		082
8.3	75	117	-		699		083
8.4	75	117	-		700		084
8.5	75	117	-		701		085
8.6	81	125	-		702		086
8.7	81	125	-		703		087
8.8	81	125	-		704		088
8.9	81	125	-		705		089
9.0	81	125	-		706		090
9.1	81	125	-		707		091
9.2	81	125	-		708		092
9.3	81	125	-		709		093
9.4	81	125	-		710		094
9.5	81	125	-		711		095
9.6	87	133	-		712		096
9.7	87	133	-		713		097
9.8	87	133	-		714		098
9.9	87	133	-		715		099
10.0	87	133	-		716		100
10.2	87	133	-		718		102
10.5	87	133	-		721		105
11.0	94	142	-		726		110
11.5	94	142	-		731		115
12.0	101	151	-		736		120
12.5	101	151	-		741		125
13.0	101	151	-		746		130
14.0	108	160	-		755		
14.5	114	169	-		760		
15.0	114	169	-		765		
15.5	120	178	-		770		
16.0	120	178	-		775		

	Al<10%Si	Al>10%Si	Cu	St<520N	50N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10020	70–80	40–70	25–40	30–36	28–32	20–28	13–20	-	-	-	-	-	-	-	-	-	25–40	20–22
10035	40–55	30–35	25–35	30–35	20–32	13–16	10–15	10–15	-	-	-	-	-	12–14	10–12	-	30–36	25–32

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10040 Short twist drills

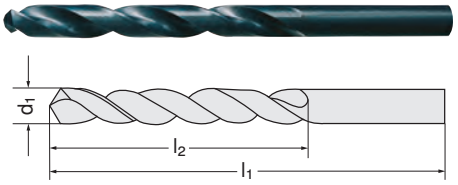
DIN 338 | N | 118° | HSS-E | ≤ 1200 N/mm²

Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- From Ø 1.0 mm thinned chisel edge
- High concentricity
- Precise point geometry

Quality
HSS-E ground for high-alloy steels up to 1200 N/mm².

Note:
Quality drills for the most demanding applications.
Drills for production.

10040



d_1 h8 mm	l_2 mm	l_1 mm		HSS-E 10040	...
0.3	3	19	10 pcs.		609
0.4	5	20	10 pcs.		618
0.5	6	22	10 pcs.		626
0.6	7	24	10 pcs.		635
0.7	9	28	10 pcs.		644
0.8	10	30	10 pcs.		654
0.9	11	32	10 pcs.		663
1.0	12	34	10 pcs.		672
1.1	14	36	10 pcs.		679
1.2	16	38	10 pcs.		688
1.3	16	38	10 pcs.		697
1.4	18	40	10 pcs.		699
1.5	18	40	10 pcs.		704
1.6	20	43	10 pcs.		712
1.7	20	43	10 pcs.		717
1.8	22	46	10 pcs.		724
1.9	22	46	10 pcs.		730
2.0	24	49	10 pcs.		737
2.1	24	49	10 pcs.		741
2.2	27	53	10 pcs.		743
2.3	27	53	10 pcs.		745
2.4	30	57	10 pcs.		750
2.5	30	57	10 pcs.		753
2.6	30	57	10 pcs.		757
2.7	33	61	10 pcs.		759
2.8	33	61	10 pcs.		762
2.9	33	61	10 pcs.		764
3.0	33	61	10 pcs.		767
3.1	36	65	10 pcs.		771
3.2	36	65	10 pcs.		774
3.3	36	65	10 pcs.		776
3.4	39	70	10 pcs.		778
3.5	39	70	10 pcs.		780
3.6	39	70	10 pcs.		782
3.7	39	70	10 pcs.		784
3.8	43	75	10 pcs.		786
3.9	43	75	10 pcs.		788
4.0	43	75	10 pcs.		791
4.1	43	75	10 pcs.		794
4.2	43	75	10 pcs.		796
4.3	47	80	10 pcs.		798
4.4	47	80	10 pcs.		800
4.5	47	80	10 pcs.		802
4.6	47	80	10 pcs.		804
4.7	47	80	10 pcs.		806
4.8	52	86	10 pcs.		809
4.9	52	86	10 pcs.		812
5.0	52	86	10 pcs.		814
5.1	52	86	10 pcs.		818
5.2	52	86	10 pcs.		820
5.3	52	86	10 pcs.		822
5.4	57	93	10 pcs.		824
5.5	57	93	10 pcs.		825
5.6	57	93	10 pcs.		827
5.7	57	93	10 pcs.		829
5.8	57	93	10 pcs.		831
5.9	57	93	10 pcs.		833
6.0	57	93	10 pcs.		835
6.1	63	101	10 pcs.		837
6.2	63	101	10 pcs.		839
6.3	63	101	10 pcs.		841
6.4	63	101	10 pcs.		843
6.5	63	101	10 pcs.		844
6.6	63	101	10 pcs.		845
6.7	63	101	10 pcs.		847
6.8	69	109	10 pcs.		849
6.9	69	109	10 pcs.		850
7.0	69	109	10 pcs.		852
7.1	69	109	10 pcs.		854
7.2	69	109	10 pcs.		855
7.3	69	109	10 pcs.		857
7.4	69	109	10 pcs.		858
7.5	69	109	10 pcs.		859
7.6	75	117	5 pcs.		860
7.7	75	117	5 pcs.		861
7.8	75	117	5 pcs.		863
7.9	75	117	5 pcs.		864
8.0	75	117	5 pcs.		867
8.1	75	117	5 pcs.		869
8.2	75	117	5 pcs.		870
8.3	75	117	5 pcs.		872
8.4	75	117	5 pcs.		873
8.5	75	117	5 pcs.		875
8.6	81	125	5 pcs.		877
8.7	81	125	5 pcs.		878
8.8	81	125	5 pcs.		881
8.9	81	125	5 pcs.		882
9.0	81	125	5 pcs.		883
9.1	81	125	5 pcs.		885
9.2	81	125	5 pcs.		887
9.3	81	125	5 pcs.		889
9.4	81	125	5 pcs.		890
9.5	81	125	5 pcs.		891
9.6	87	133	5 pcs.		892
9.7	87	133	5 pcs.		893
9.8	87	133	5 pcs.		895
9.9	87	133	5 pcs.		896
10.0	87	133	5 pcs.		897
10.1	87	133	5 pcs.		898
10.2	87	133	5 pcs.		899
10.5	87	133	5 pcs.		904
10.8	94	142	-		908
11.0	94	142	-		910
11.2	94	142	-		912
11.5	94	142	-		915
11.8	94	142	-		919
12.0	101	151	-		921
12.2	101	151	-		923
12.5	101	151	-		927
12.8	101	151	-		931
13.0	101	151	-		933
13.5	108	160	-		937
13.8	108	160	-		941
14.0	108	160	-		943
14.5	114	169	-		948
15.0	114	169	-		951
15.5	120	178	-		955
16.0	120	178	-		957

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
60–70	50–55	32–36	30–40	25–28	15–28	15–22	14–18	-	-	-	-	-	12–14	-	-	30–35	15–18

Twist drill

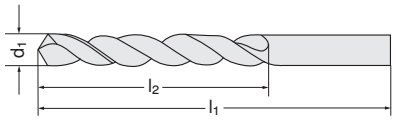
10042 - 10046 Short twist drills

DIN 338 | 130°

ATORN®

Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- From Ø 1.0 mm thinned chisel edge (only for art. no. 10042 and 10046)
- High concentricity
- Precise point geometry

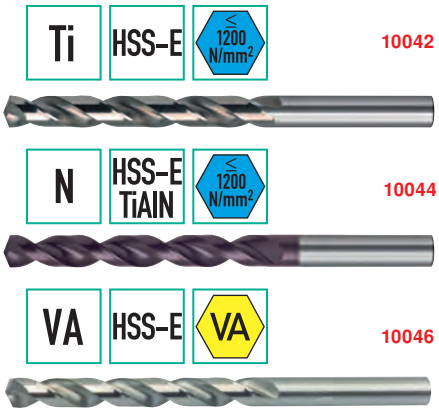
Note:
Quality drills for the most demanding applications.
Drills for production.



10042
Quality
HSS-E for materials that are difficult to machine such as titanium and exotics such as Nimonic, Hastelloy and Inconel.

10044
Quality
HSS-E/TiAlN-coated, for high-alloy steels up to 1200 N/mm².
Longest possible service life.

10046
Quality
HSS-E for rust-, acid- and heat-resistant steels such as V2A and V4A.



				Type Ti		Type N		Type VA	
d_1 h8 mm	l_2 mm	l_1 mm		10042	...	10044	...	10046	...
0.5	6	22	10 pcs.		105				
0.6	7	24	10 pcs.		106				
1.0	12	34	10 pcs.		110		110		110
1.1	14	36	10 pcs.		111				111
1.2	16	38	10 pcs.		112				112
1.3	16	38	10 pcs.		113				113
1.4	18	40	10 pcs.		114				114
1.5	18	40	10 pcs.		115		115		115
1.6	20	43	10 pcs.		116		116		116
1.7	20	43	10 pcs.		117				117
1.8	22	46	10 pcs.		118				118
1.9	22	46	10 pcs.		119				119
2.0	24	49	10 pcs.		120		120		120
2.1	24	49	10 pcs.		121				121
2.2	27	53	10 pcs.		122		122		122
2.3	27	53	10 pcs.		123				123
2.4	30	57	10 pcs.		124		124		124
2.5	30	57	10 pcs.		125		125		125
2.6	30	57	10 pcs.		126				126
2.7	33	61	10 pcs.		127				127
2.8	33	61	10 pcs.		128		128		128
2.9	33	61	10 pcs.		129		129		129
3.0	33	61	10 pcs.		130		130		130
3.1	36	65	10 pcs.		131		131		131
3.2	36	65	10 pcs.		132		132		132
3.3	36	65	10 pcs.		133		133		133
3.4	39	70	10 pcs.		134		134		134
3.5	39	70	10 pcs.		135		135		135
3.6	39	70	10 pcs.		136		136		136
3.7	39	70	10 pcs.		137				137
3.8	43	75	10 pcs.		138				138
3.9	43	75	10 pcs.		139		139		139
4.0	43	75	10 pcs.		140		140		140
4.1	43	75	10 pcs.		141		141		141
4.2	43	75	10 pcs.		142		142		142
4.3	47	80	10 pcs.		143				143
4.4	47	80	10 pcs.		144				144
4.5	47	80	10 pcs.		145		145		145
4.6	47	80	10 pcs.		146				146
4.7	47	80	10 pcs.		147				147
4.8	52	86	10 pcs.		148		148		148
4.9	52	86	10 pcs.		149				149
5.0	52	86	10 pcs.		150		150		150
5.1	52	86	10 pcs.		151		151		151
5.2	52	86	10 pcs.		152		152		152
5.3	52	86	10 pcs.		153				153
5.4	57	93	10 pcs.		154				154

				Type Ti		Type N		Type VA	
d_1 h8 mm	l_2 mm	l_1 mm		10042	...	10044	...	10046	...
5.5	57	93	10 pcs.		155		155		155
5.6	57	93	10 pcs.		156				156
5.7	57	93	10 pcs.		157				157
5.8	57	93	10 pcs.		158		158		158
5.9	57	93	10 pcs.		159				159
6.0	57	93	10 pcs.		160		160		160
6.1	63	101	-		161				161
6.2	63	101	-		162				162
6.3	63	101	-		163				163
6.4	63	101	-		164				164
6.5	63	101	-		165		165		165
6.6	63	101	-		166				166
6.7	63	101	-		167				167
6.8	69	109	-		168		168		168
6.9	69	109	-		169				169
7.0	69	109	-		170		170		170
7.1	69	109	-		171				
7.2	69	109	-		172				172
7.3	69	109	-		173				173
7.4	69	109	-		174				174
7.5	69	109	-		175		175		175
7.6	75	117	-		176				176
7.7	75	117	-		177				177
7.8	75	117	-		178		178		178
7.9	75	117	-		179				179
8.0	75	117	-		180		180		180
8.1	75	117	-		181				181
8.2	75	117	-		182		182		182
8.3	75	117	-		183				183
8.4	75	117	-		184		184		184
8.5	75	117	-		185		185		185
8.6	81	125	-		186				186
8.7	81	125	-		187				187
8.8	81	125	-		188		188		188
8.9	81	125	-		189				189
9.0	81	125	-		190		190		190
9.1	81	125	-		191				191
9.2	81	125	-		192				192
9.3	81	125	-		193				193
9.4	81	125	-		194				194
9.5	81	125	-		195		195		195
9.6	87	133	-		196				196
9.7	87	133	-		197				197
9.8	87	133	-		198		198		198
9.9	87	133	-		199				199
10.0	87	133	-		200		200		200
10.2	87	133	-		202		202		202

Continued ▶

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Continued ▶

d_1 h8 mm	l_2 mm	l_1 mm	Type Ti 10042	...	Type N 10044	...	Type VA 10046	...
10.5	87	133	-		205		205	205
11.0	94	142	-		210		210	210
11.5	94	142	-		215		215	215
11.8	94	142	-		218			218
12.0	101	151	-		220		220	220
12.2	101	151	-		222			
12.5	101	151	-		225			

d_1 h8 mm	l_2 mm	l_1 mm	Type Ti 10042	...	Type N 10044	...	Type VA 10046	...
13.0	101	151	-		230			230
13.5	108	160	-		235			
14.0	108	160	-		240			
14.5	114	169	-		245			
15.0	114	169	-		250			
15.5	120	178	-		255			
16.0	120	178	-		260			

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10042	-	-	-	35–40	30–35	25–30	20–25	15–20	-	-	-	-	-	10–14	10–14	8–9	-	-
10044	-	-	-	35–40	30–35	25–30	20–25	15–20	-	-	-	-	-	-	-	-	23–35	-
10046	85–90	50–60	20–45	-	-	-	-	-	-	-	-	-	-	12–14	10–12	-	-	-

10047 Co8 twist drill

DIN 338 | N | 135° | HSS Co8 | < 1400 N/mm²

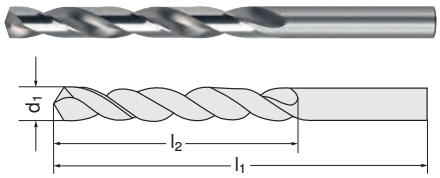
ATORN®

Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- Thinned chisel edge
- High concentricity
- Precise point geometry
- Drilling without centring

Quality
HSS-Co8 ground for high-strength CrNi-based alloys. VA steels and wear-resistant sheet metals and steels up to 1400 N/mm².

Note:
Quality drills for the most demanding applications. Drills for production.

10047



d_1 h8 mm	l_2 mm	l_1 mm	HSS-Co8 10047	...
1.0	12	34	10 pcs.	110
1.1	14	36	10 pcs.	111
1.2	16	38	10 pcs.	112
1.3	16	38	10 pcs.	113
1.4	18	40	10 pcs.	114
1.5	18	40	10 pcs.	115
1.6	20	43	10 pcs.	116
1.7	20	43	10 pcs.	117
1.8	22	46	10 pcs.	118
1.9	22	46	10 pcs.	119
2.0	24	49	10 pcs.	120
2.1	24	49	10 pcs.	121
2.2	27	53	10 pcs.	122
2.3	27	53	10 pcs.	123
2.4	30	57	10 pcs.	124
2.5	30	57	10 pcs.	125
2.6	30	57	10 pcs.	126
2.7	33	61	10 pcs.	127
2.8	33	61	10 pcs.	128
2.9	33	61	10 pcs.	129
3.0	33	61	10 pcs.	130
3.1	36	65	10 pcs.	131
3.2	36	65	10 pcs.	132
3.3	36	65	10 pcs.	133
3.4	39	70	10 pcs.	134
3.5	39	70	10 pcs.	135
3.6	39	70	10 pcs.	136
3.7	39	70	10 pcs.	137
3.8	43	75	10 pcs.	138
3.9	43	75	10 pcs.	139
4.0	43	75	10 pcs.	140
4.1	43	75	10 pcs.	141
4.2	43	76	10 pcs.	142

d_1 h8 mm	l_2 mm	l_1 mm	HSS-Co8 10047	...
4.3	47	80	10 pcs.	143
4.4	47	80	10 pcs.	144
4.5	47	80	10 pcs.	145
4.6	47	80	10 pcs.	146
4.7	47	80	10 pcs.	147
4.8	52	86	10 pcs.	148
4.9	52	86	10 pcs.	149
5.0	52	86	10 pcs.	150
5.1	52	86	10 pcs.	151
5.2	52	86	10 pcs.	152
5.3	52	86	10 pcs.	153
5.4	57	93	10 pcs.	154
5.5	57	93	10 pcs.	155
5.6	57	93	10 pcs.	156
5.7	57	93	10 pcs.	157
5.8	57	93	10 pcs.	158
5.9	57	93	10 pcs.	159
6.0	57	93	10 pcs.	160
6.1	63	101	-	161
6.2	63	101	-	162
6.3	63	101	-	163
6.4	63	101	-	164
6.5	63	101	-	165
6.6	63	101	-	166
6.7	63	101	-	167
6.8	69	109	-	168
6.9	69	109	-	169
7.0	69	109	-	170
7.1	69	109	-	171
7.2	69	109	-	172
7.3	69	109	-	173
7.4	69	109	-	174
7.5	69	109	-	175

d_1 h8 mm	l_2 mm	l_1 mm	HSS-Co8 10047	...
7.6	75	117	-	176
7.7	75	117	-	177
7.8	75	117	-	178
7.9	75	117	-	179
8.0	75	117	-	180
8.1	75	117	-	181
8.2	75	117	-	182
8.3	75	117	-	183
8.4	75	117	-	184
8.5	75	117	-	185
8.6	81	125	-	186
8.7	81	125	-	187
8.8	81	125	-	188
8.9	81	125	-	189
9.0	81	125	-	190
9.1	81	125	-	191
9.2	81	125	-	192
9.3	81	125	-	193
9.4	81	125	-	194
9.5	81	125	-	195
9.6	87	133	-	196
9.7	87	133	-	197
9.8	87	133	-	198
9.9	87	133	-	199
10.0	87	133	-	200
10.1	87	133	-	201
10.5	87	133	-	205
11.0	94	142	-	210
11.5	94	142	-	215
11.8	94	142	-	218
12.0	101	151	-	220
12.5	101	151	-	225
13.0	101	151	-	230

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	35–40	32–35	25–32	20–25	10–20	10–12	-	-	-	-	10–14	10–14	6	-	-

Twist drill

10423 High-quality drill AGPSD

DIN 338 | 118° | AG | 5xD | HSS-E Co8 | ≤ 1200 N/mm² | GG(G)

NACHI

Design
- Straight shank
- Right cutting
- Special flute geometry
- Twist angle 34°

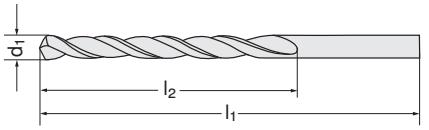
Applications
For steel up to 1200 N/mm² and cast iron.
Drilling in increments, without removing chips!

Quality
HSS-E-Co8, ground
AG(AlCr) coating.

Note:
Note the respective length/diameter ratio of the bore diameter and the flute length.
Use only high-precision tool chucks!

NEW

10423



HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10423	...
1.0	12	34		010
1.1	14	36		011
1.2	16	38		012
1.3	16	38		013
1.4	18	40		014
1.5	18	40		015
1.6	20	43		016
1.7	20	43		017
1.8	22	46		018
1.9	22	46		019
2.0	24	49		020
2.1	24	49		021
2.2	27	53		022
2.3	27	53		023
2.4	30	57		024
2.5	30	57		025
2.6	30	57		026
2.7	33	61		027
2.8	33	61		028
2.9	33	61		029
3.0	33	61		030
3.1	36	65		031
3.2	36	65		032
3.3	36	65		033
3.4	39	70		034
3.5	39	70		035
3.6	39	70		036
3.7	39	70		037
3.8	43	75		038
3.9	43	75		039
4.0	43	75		040
4.1	43	75		041
4.2	43	75		042
4.3	47	80		043
4.4	47	80		044
4.5	47	80		045
4.6	47	80		046
4.7	47	80		047
4.8	52	86		048
4.9	52	86		049
5.0	52	86		050

HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10423	...
5.1	52	86		051
5.2	52	86		052
5.3	52	86		053
5.4	57	93		054
5.5	57	93		055
5.6	57	93		056
5.7	57	93		057
5.8	57	93		058
5.9	57	93		059
6.0	57	93		060
6.1	63	101		061
6.2	63	101		062
6.3	63	101		063
6.4	63	101		064
6.5	63	101		065
6.6	63	101		066
6.7	63	101		067
6.8	69	109		068
6.9	69	109		069
7.0	69	109		070
7.1	69	109		071
7.2	69	109		072
7.3	69	109		073
7.4	69	109		074
7.5	69	109		075
7.6	75	117		076
7.7	75	117		077
7.8	75	117		078
7.9	75	117		079
8.0	75	117		080
8.1	75	117		081
8.2	75	117		082
8.3	75	117		083
8.4	75	117		084
8.5	75	117		085
8.6	81	125		086
8.7	81	125		087
8.8	81	125		088
8.9	81	125		089
9.0	81	125		090
9.1	81	125		091

HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10423	...
9.2	81	125		092
9.3	81	125		093
9.4	81	125		094
9.5	81	125		095
9.6	87	133		096
9.7	87	133		097
9.8	87	133		098
9.9	87	133		099
10.0	87	133		100
10.1	87	133		101
10.2	87	133		102
10.3	87	133		103
10.4	87	133		104
10.5	87	133		105
10.6	87	133		106
10.7	94	142		107
10.8	94	142		108
10.9	94	142		109
11.0	94	142		110
11.1	94	142		111
11.2	94	142		112
11.3	94	142		113
11.4	94	142		114
11.5	94	142		115
11.6	94	142		116
11.7	94	142		117
11.8	94	142		118
11.9	101	151		119
12.0	101	151		120
12.1	101	151		121
12.2	101	151		122
12.3	101	151		123
12.4	101	151		124
12.5	101	151		125
12.6	101	151		126
12.7	101	151		127
12.8	101	151		128
12.9	101	151		129
13.0	101	151		130

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	20–30	15–25	15–25	12–18	12–18	-	-	-	-	-	-	-	-	25–35	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10050 - 10053 Short twist drills

DIN 338 | FS | 130°

ATORN®

Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- Thinned chisel edge
- High concentricity
- Precise point geometry
- From 2 mm chamfer-nitrided
- Wide chip flutes and rounded rear edges for optimum chip removal

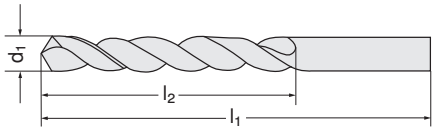
Note:
Quality drills for the most demanding applications.
Drills for production.

10050
Quality
HSS-E for steels up to 1200 N/mm².

HSS-E ≤ 1200 N/mm² — 10050

10053
Quality
HSS-E/TiN-coated for even higher cutting performance.

HSS-E TiN ≤ 1200 N/mm² — 10053



d_1 h8 mm	l_2 mm	l_1 mm		HSS-E 10050	...	HSS-E/TiN 10053	...
1.0	12	34	10 pcs.		101		110
1.1	14	36	10 pcs.		107		
1.2	16	38	10 pcs.		112		
1.3	16	38	10 pcs.		115		
1.4	18	40	10 pcs.		118		
1.5	18	40	10 pcs.		122		115
1.6	20	43	10 pcs.		126		116
1.7	20	43	10 pcs.		129		117
1.8	22	46	10 pcs.		131		
1.9	22	46	10 pcs.		133		
2.0	24	49	10 pcs.		140		120
2.1	24	49	10 pcs.		144		121
2.2	27	53	10 pcs.		147		
2.3	27	53	10 pcs.		150		
2.4	30	57	10 pcs.		154		124
2.5	30	57	10 pcs.		159		125
2.6	30	57	10 pcs.		163		
2.7	33	61	10 pcs.		166		
2.8	33	61	10 pcs.		171		128
2.9	33	61	10 pcs.		175		129
3.0	33	61	10 pcs.		177		130
3.1	36	65	10 pcs.		179		131
3.2	36	65	10 pcs.		182		132
3.3	36	65	10 pcs.		185		133
3.4	39	70	10 pcs.		186		134
3.5	39	70	10 pcs.		188		135
3.6	39	70	10 pcs.		190		136
3.7	39	70	10 pcs.		193		
3.8	43	75	10 pcs.		195		138
3.9	43	75	10 pcs.		197		139
4.0	43	75	10 pcs.		201		140
4.1	43	75	10 pcs.		206		141
4.2	43	75	10 pcs.		208		142
4.3	47	80	10 pcs.		211		
4.4	47	80	10 pcs.		214		
4.5	47	80	10 pcs.		215		145
4.8	52	86	10 pcs.		224		148
5.0	52	86	10 pcs.		229		150

d_1 h8 mm	l_2 mm	l_1 mm		HSS-E 10050	...	HSS-E/TiN 10053	...
5.1	52	86	10 pcs.		231		151
5.2	52	86	10 pcs.		235		152
5.3	52	86	10 pcs.		238		
5.4	57	93	10 pcs.		240		
5.5	57	93	10 pcs.		242		155
5.7	57	93	10 pcs.		246		
5.8	57	93	10 pcs.		249		158
6.0	57	93	10 pcs.		252		160
6.1	63	101	-		255		
6.2	63	101	-		257		162
6.3	63	101	-		259		
6.5	63	101	-		262		165
6.6	63	101	-		264		
6.7	63	101	-		267		
6.8	69	109	-		269		168
6.9	69	109	-		271		
7.0	69	109	-		272		170
7.1	69	109	-		274		
7.4	69	109	-		280		
7.5	69	109	-		283		175
7.8	75	117	-		289		
7.9	75	117	-		290		
8.0	75	117	-		292		180
8.2	75	117	-		295		182
8.5	75	117	-		300		185
8.8	81	125	-		306		
9.0	81	125	-		309		190
9.2	81	125	-		313		
9.5	81	125	-		317		195
9.7	87	133	-		321		
10.0	87	133	-		325		200
10.2	87	133	-		328		202
10.5	87	133	-		333		205
11.0	94	142	-		339		210
11.5	94	142	-		345		215
12.0	101	151	-		351		220
12.5	101	151	-		353		
13.0	101	151	-		356		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10050																	
50–55	65–70	32–36	30–40	25–28	15–28	15–22	14–18	10–12	-	-	-	-	12–14	8–12	-	-	15–18
10053																	
90–105	70–80	50–55	40–45	35–40	20–28	18–22	17–22	12–15	-	-	-	-	17–20	12–26	-	-	24–26

Twist drill

10060 Uni twist drill HSS-E V3

130° | 120° | 5xD | HSS-E TiAlN | Uni

ATORN®

Design
- Special profile
- High degree of concentricity, long service life and high dimensional accuracy
- Drilling without centring
- Structural dimensions similar to DIN 338

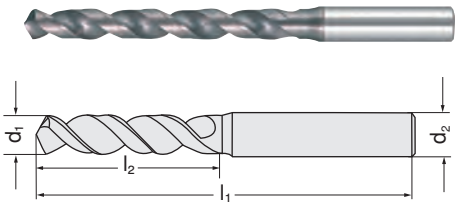
Quality
TiAlN coating with NC shank.

10060 101-121
Design
- Tip angle 130°

10060 122-225
Design
- Tip angle 120°

NEW

10060



HSS-E/TiAlN

d_1 h8 mm	l_2 mm	l_1 mm	d_2 h7 mm	10060	...
2.0	24	56	3		101
2.1	24	56	3		102
2.2	27	56	3		103
2.3	27	56	3		104
2.4	30	57	3		105
2.5	30	57	3		106
2.6	30	57	3		107
2.7	33	57	3		108
2.8	33	61	3		109
2.9	33	61	3		110
3.0	33	61	3		111
3.1	36	65	4		112
3.2	36	65	4		113
3.3	36	65	4		114
3.4	39	70	4		115
3.5	39	70	4		116
3.6	39	70	4		117
3.7	39	75	4		118
3.8	43	75	4		119
3.9	43	75	4		120
4.0	43	75	4		121
4.1	43	75	6		122
4.2	43	75	6		123
4.3	47	80	6		124
4.4	47	80	6		125
4.5	47	80	6		126
4.6	47	80	6		127
4.7	47	80	6		128
4.8	52	86	6		129
4.9	52	86	6		130
5.0	52	86	6		131
5.1	52	86	6		132
5.2	52	86	6		133
5.3	52	86	6		134
5.4	57	93	6		135
5.5	57	93	6		136
5.6	57	93	6		137
5.7	57	93	6		138
5.8	57	93	6		139
5.9	57	93	6		140
6.0	57	93	6		141
6.1	63	101	8		142

HSS-E/TiAlN

d_1 h8 mm	l_2 mm	l_1 mm	d_2 h7 mm	10060	...
6.2	63	101	8		143
6.3	63	101	8		144
6.4	63	101	8		145
6.5	63	101	8		146
6.6	63	101	8		147
6.7	63	101	8		148
6.8	69	109	8		149
6.9	69	109	8		150
7.0	69	109	8		151
7.1	69	109	8		152
7.2	69	109	8		153
7.3	69	109	8		154
7.4	69	109	8		155
7.5	69	109	8		156
7.6	75	117	8		157
7.7	75	117	8		158
7.8	75	117	8		159
7.9	75	117	8		160
8.0	75	117	8		161
8.1	75	117	10		162
8.2	75	117	10		163
8.3	75	117	10		164
8.4	75	117	10		165
8.5	75	117	10		166
8.6	81	125	10		167
8.7	81	125	10		168
8.8	81	125	10		169
8.9	81	125	10		170
9.0	81	125	10		171
9.1	81	125	10		172
9.2	81	125	10		173
9.3	81	125	10		174
9.4	81	125	10		175
9.5	81	125	10		176
9.6	87	133	10		177
9.7	87	133	10		178
9.8	87	133	10		179
9.9	87	133	10		180
10.0	87	133	10		181
10.1	87	133	10		182
10.2	87	133	10		183
10.3	87	133	10		184

HSS-E/TiAlN

d_1 h8 mm	l_2 mm	l_1 mm	d_2 h7 mm	10060	...
10.4	87	133	10		185
10.5	87	133	10		186
10.6	87	133	12		187
10.7	94	142	12		188
10.8	94	142	12		189
10.9	94	142	12		190
11.0	94	142	12		191
11.1	94	142	12		192
11.2	94	142	12		193
11.3	94	142	12		194
11.4	94	142	12		195
11.5	94	142	12		196
11.6	94	142	12		197
11.7	94	142	12		198
11.8	94	142	12		199
11.9	101	151	12		200
12.0	101	151	12		201
12.1	101	151	12		202
12.2	101	151	12		203
12.3	101	151	12		204
12.4	101	151	12		205
12.5	101	151	12		206
12.6	101	151	12		207
12.7	101	151	12		208
12.8	101	151	12		209
12.9	101	151	12		210
13.0	101	151	12		211
13.5	108	160	16		212
14.0	108	160	16		213
14.5	114	169	16		214
15.0	114	169	16		215
15.5	120	178	16		216
16.0	120	178	16		217
16.5	125	184	20		218
17.0	125	184	20		219
17.5	130	191	20		220
18.0	130	191	20		221
18.5	135	198	20		222
19.0	135	198	20		223
19.5	140	205	20		224
20.0	140	205	20		225

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
32–63	63–100	25–50	32–40	28–32	24–28	22–26	20–22	-	-	-	-	-	15–20	13–18	-	32–40	-

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

10034 - 10178 Twist drill sets in box

DIN 338 | N | HSS | HSS TiN | HSS-E

Design
Sturdy folding metal box with drill bit organisation system.

Note:
End number 115 (1.0–10.5 mm) including twist drill Ø 3.3/4.2/6.8/10.2 mm for threaded holes (ISO).

10170
ATORN®
Type N
HSS, ground
(art. no. 10001).

10173
HW
Type N
HSS, ground
(art. no. 10003).

10174
ATORN®
Type N
HSS/TiN, ground
(art. no. 10020).

10034
ATORN®
Type UNI
HSS-E.
(art. no. 10035)

10177
HW
Type N
HSS-E, ground
(art. no. 10040).

10178
Type N
HSS, precision-roll forged
(art. no. 10010).

10034 114

10170 118

10174 118

Set size mm	Number of drills	Increments of mm	HSS 10170	...	HSS 10173	...	HSS/TiN 10174	...	HSS-E/UNI 10034	...	HSS-E 10177	...	HSS roll forged 10178	...
1.0–6.0	51	0.1		106		106						106		106
2.0–10.0	81	0.1		108		108						108		
6.0–10.0	41	0.1		109		109						109		109
1.0 - 10.0	19	0.5		114		114		114		114		114		114
1.0 - 10.5	24	0.5		115		115		115		115		115		115
1.0 - 13.0	25	0.5		118		118		118		118		118		118

10180 - 10183 Twist drill sets in box

DIN 338 | N | HSS

Design
Sheet steel box filled with 180 twist drills.

Contents:
10 pieces each. 0.5–8 mm,
5 pieces each. 8.5–10 mm,
in 0.5-mm increments.

10180
ATORN®
HSS, ground
(art. no. 10001).

10181
HW
HSS, ground
(art. no. 10003).

10182
HSS, precision-roll forged
(art. no. 10010).

10183
Design
Box, empty.
For max. 600 twist drills
(0.5–10 mm Ø 0.5-mm increments).
Dimensions: 325 x 225 x 50 mm.

10180 - 10182

HSS 10180	...	HSS 10181	...	HSS roll forged 10182	...	Empty box 10183	...
	101		101		201		101

10185 - 10188 Twist drill sets

DIN 338 | N | HSS | HSS-E

Design
Set packed in oiled paper.
Applications
To fill and complement existing boxes.

Note:
End number 115 (1.0–10.5 mm) including twist drill Ø 3.3/4.2/6.8/10.2 mm for threaded holes (ISO).

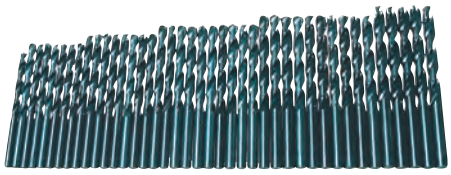
10185
ATORN®
HSS, ground
(art. no. 10001).

10186
HW
HSS, ground
(art. no. 10003).

10187
HW
HSS-E, ground
(art. no. 10040).

10188
HSS, precision-roll forged
(art. no. 10010).

10185 - 10188



Set size mm	Number of drills	Increments of mm	HSS 10185	...	HSS 10186	...	HSS-E 10187	...	HSS roll forged 10188	...
1.0–6.0	51	0.1	106		106		106		106	
2.0–10.0	81	0.1	108		108		108		108	
6.0–10.0	41	0.1	109		109		109		109	
1.0–10.0	19	0.5	114		114		114		114	
1.0–10.5	24	0.5	115		115		115		115	
1.0–13.0	25	0.5	118		118		118		118	

Twist drill

10190 Boxes for twist drills (empty)

Design
Without drills.
When you open the lid the drills are automatically positioned.
Applications
For clearly arranged storage of short spiral drills with straight shank DIN 338, in sets (art. no. 10185–10188) as well as all other short twist drills with straight shank with appropriate diameters and lengths.

Note:
Art. no. 10190 115-116 additionally with locating holes for thread core drills (ISO and BSW):
Art. no. 10190 115 =
3.3/4.2/6.8 and 10.2 mm,
Art. no. 10190 116 =
1.9/2.1/2.6/2.9/3.2/3.3/3.8/4.2/5.1/6.8/7.9/10.2 mm.

10190

For twist drill sets Ø mm	Number of drills	Increments of mm	10190	...
1.0 - 6.0	51	0.1		106
2.0 - 10.0	81	0.1		108
6.0 - 10.0	41	0.1		109
1.0 - 10.0	19	0.5		114

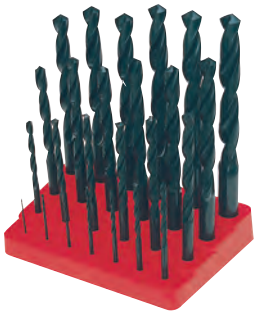
For twist drill sets Ø mm	Number of drills	Increments of mm	10190	...
1.0 - 10.5	24	0.5		115
1.0 - 10.5	32	0.5		116
1.0 - 13.0	25	0.5		118

10195 Plastic stands for twist drills (empty)

Design
Without drills.

Applications
For clearly arranged storage, in different sets, of twist drills with straight shanks.

10195



For set size mm	Increments of mm	10195	...
1.0–5.0	0.1		101
5.1–10.0	0.1		103
1.0–5.9	0.1		107
1.0–10.0	0.5		114
1.0–13.0	0.5		118

10210 - 10214 Short twist drills

DIN 338

HARTNER

10210
Design
- Straight shank
- Right cutting
- Cone-shaped section finish

Quality
HSS ground.

Note:
Special drill with wide, spacious chip flutes for hard and brittle materials (brass, bronze).

10211
Aluminium twist drill
Design
- Straight shank
- Right cutting
- Cone-shaped section finish

Quality
HSS ground.

Note:
Special drill with polished chip flutes for optimum chip removal in soft materials.
Drills for production.

10214
VA twist drill
Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- High concentricity
- Precise point geometry
- Drilling without centring

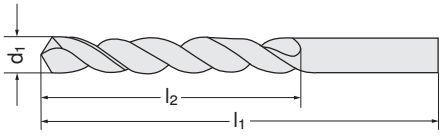
Quality
HSS-E ground.

Note:
For rust-, acid- and heat-resistant steels such as V2A and V4A. Drills for production.

H 118° HSS MS 10210

W 130° HSS ALU 10211

IS 130° HSS-E VA 10214



Continued

10210 - 10214 Short twist drills

DIN 338

Continued ▶

d_1 h8 mm	l_2 mm	l_1 mm		HSS 10210	...	HSS 10211	...	HSS-E 10214	...
0.5	6	22	10 pcs.		101		101		
0.6	7	24	10 pcs.		102		102		
0.7	9	28	10 pcs.		103		103		
0.8	10	30	10 pcs.		104		104		
0.9	11	32	10 pcs.		105		105		
1.0	12	34	10 pcs.		106		106		
1.1	14	36	10 pcs.		107		107		602
1.2	16	38	10 pcs.		108		108		603
1.3	16	38	10 pcs.		109		109		604
1.4	18	40	10 pcs.		110		110		605
1.5	18	40	10 pcs.		111		111		606
1.6	20	43	10 pcs.		112		112		607
1.7	20	43	10 pcs.		113		113		608
1.8	22	46	10 pcs.		114		114		609
1.9	22	46	10 pcs.		115		115		610
2.0	24	49	10 pcs.		116		116		611
2.1	24	49	10 pcs.		117		117		612
2.2	27	53	10 pcs.		118		118		613
2.3	27	53	10 pcs.		119				614
2.4	30	57	10 pcs.		120		120		615
2.5	30	57	10 pcs.		121		121		616
2.6	30	57	10 pcs.		122		122		617
2.7	33	61	10 pcs.		123		123		618
2.8	33	61	10 pcs.		124		124		619
2.9	33	61	10 pcs.		125		125		620
3.0	33	61	10 pcs.		126		126		621
3.1	36	65	10 pcs.		127		127		622
3.2	36	65	10 pcs.		128		128		623
3.3	36	65	10 pcs.		129		129		624
3.4	39	70	10 pcs.		130		130		625
3.5	39	70	10 pcs.		131		131		626
3.6	39	70	10 pcs.		132		132		627
3.7	39	70	10 pcs.		133		133		628
3.8	43	75	10 pcs.		134		134		629
3.9	43	75	10 pcs.		135		135		630
4.0	43	75	10 pcs.		136		136		631
4.1	43	75	10 pcs.		137		137		632
4.2	43	75	10 pcs.		138		138		633
4.3	47	80	10 pcs.		139		139		634
4.4	47	80	10 pcs.		140		140		635
4.5	47	80	10 pcs.		141		141		636
4.6	47	80	10 pcs.		142		142		637
4.7	47	80	10 pcs.		143		143		638
4.8	52	86	10 pcs.		144		144		639
4.9	52	86	10 pcs.		145		145		640
5.0	52	86	10 pcs.		146		146		641
5.1	52	86	10 pcs.		147		147		642
5.2	52	86	10 pcs.		148		148		643
5.3	52	86	10 pcs.		149		149		644
5.4	57	93	10 pcs.		150		150		
5.5	57	93	10 pcs.		151		151		646
5.6	57	93	10 pcs.		152		152		647
5.7	57	93	10 pcs.		153		153		
5.8	57	93	10 pcs.		154		154		650
5.9	57	93	10 pcs.		155		155		651
6.0	57	93	10 pcs.		156		156		652
6.1	63	101	10 pcs.		157		157		653
6.2	63	101	10 pcs.		158		158		654
6.3	63	101	10 pcs.		159		159		655
6.4	63	101	10 pcs.		160		160		656
6.5	63	101	10 pcs.		161		161		657
6.6	63	101	10 pcs.		162		162		658
6.7	63	101	10 pcs.		163		163		659
6.8	69	109	10 pcs.		164		164		661
6.9	69	109	10 pcs.		165		165		662
7.0	69	109	10 pcs.		166		166		663
7.1	69	109	10 pcs.		186		186		664
7.2	69	109	10 pcs.		167		167		665
7.3	69	109	10 pcs.		187		187		666
7.4	69	109	10 pcs.				188		667
7.5	69	109	10 pcs.		168		168		668
7.6	75	117	5 pcs.		189		189		
7.7	75	117	5 pcs.						670
7.8	75	117	5 pcs.		169		169		671
7.9	75	117	5 pcs.		191		191		672
8.0	75	117	5 pcs.		170		170		673
8.1	75	117	5 pcs.		192		192		674
8.2	75	117	5 pcs.		171		171		675
8.3	75	117	5 pcs.				193		
8.4	75	117	5 pcs.		193		194		
8.5	75	117	5 pcs.		172		172		678
8.6	81	125	5 pcs.		194		195		679
8.7	81	125	5 pcs.				196		680
8.8	81	125	5 pcs.		173		173	(	681
9.0	81	125	5 pcs.		174		174		683
9.1	81	125	5 pcs.				198		684
9.2	81	125	5 pcs.		175		175		685
9.3	81	125	5 pcs.		197		199		
9.4	81	125	5 pcs.						687
9.5	81	125	5 pcs.		176		176		688
9.7	87	133	5 pcs.		199				690
9.8	87	133	5 pcs.		177		177		691
9.9	87	133	5 pcs.						692
10.0	87	133	5 pcs.		178		178		693
10.1	87	133	5 pcs.		200		204		694
10.2	87	133	5 pcs.				205		695
10.3	87	133	5 pcs.						696
10.4	87	133	5 pcs.						697
10.5	87	133	5 pcs.		179		179		698
10.9	94	142	-				209		
11.0	94	142	-		180		180		703
11.2	94	142	-		204				706
11.5	94	142	-		205		213		708
12.0	101	151	-		181		181		712
13.0	101	151	-		182		182		
14.0	108	160	-		183		183		
15.0	114	169	-				184		

Al<10%Si	Al>10%Si	Cu	Ms	Mg	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	Ti alloy	GG(G)	Plastic
10210																	
-	-	25–32	40–63	70–80	-	-	-	-	-		-	-	-	-	-	-	-

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10211																	
50–60	40–50	25–32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16–25
10214																	
60–70	50–55	32–36	-	-	-	-	-	-	-	-	-	-	10–20	8–10	-	-	15–18

( ) = Items with prices in brackets partly available from stock.

Short chip drills | Twist drills

10215 High-performance short chip drill UNI

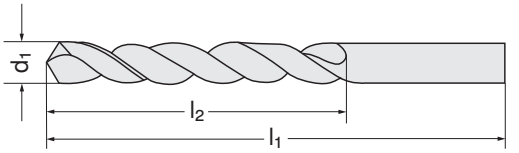
DIN 338 | 130° | HSS-E-PM TiN | ≤ 1400 N/mm² | Uni

ATORN®

Design
- Special profile
- Low wear on the cutting edges
- Temperature-resistant

Quality
HSS-E-PM/TiN for universal use.

Note:
High degree of concentricity, service life and dimensional accuracy. Short chips.
Drilling without centring.
Drills for production.



HSS-E-PM/TiN					HSS-E-PM/TiN					HSS-E-PM/TiN				
d_1 h8 mm	l_2 mm	l_1 mm	10215	...	d_1 h8 mm	l_2 mm	l_1 mm	10215	...	d_1 h8 mm	l_2 mm	l_1 mm	10215	...
1.0	12	34		010	4.1	43	75		041	7.2	69	109		072
1.1	14	36		011	4.2	43	75		042	7.3	69	109		073
1.2	16	38		012	4.3	47	80		043	7.4	69	109		074
1.3	16	38		013	4.4	47	80		044	7.5	69	109		075
1.4	18	40		014	4.5	47	80		045	7.6	75	117		076
1.5	18	40		015	4.6	47	80		046	7.7	75	117		077
1.6	20	43		016	4.7	47	80		047	7.8	75	117		078
1.7	20	43		017	4.8	52	86		048	7.9	75	117		079
1.8	22	46		018	4.9	52	86		049	8.0	75	117		080
1.9	22	46		019	5.0	52	86		050	8.1	75	117		081
2.0	24	49		020	5.1	52	86		051	8.2	75	117		082
2.1	24	49		021	5.2	52	86		052	8.3	75	117		083
2.2	27	53		022	5.3	52	86		053	8.4	75	117		084
2.3	27	53		023	5.4	57	93		054	8.5	75	117		085
2.4	30	57		024	5.5	57	93		055	8.8	81	125		088
2.5	30	57		025	5.6	57	93		056	9.0	81	125		090
2.6	30	57		026	5.7	57	93		057	9.3	81	125		093
2.7	33	61		027	5.8	57	93		058	9.5	81	125		095
2.8	33	61		028	5.9	57	93		059	9.8	87	133		098
2.9	33	61		029	6.0	57	93		060	10.0	87	133		100
3.0	33	61		030	6.1	63	101		061	10.3	87	133		103
3.1	36	65		031	6.2	63	101		062	10.5	87	133		105
3.2	36	65		032	6.3	63	101		063	11.0	94	142		110
3.3	36	65		033	6.4	63	101		064	11.5	94	142		115
3.4	39	70		034	6.5	63	101		065	12.0	101	151		120
3.5	39	70		035	6.6	63	101		066	12.5	101	151		125
3.6	39	70		036	6.7	63	101		067	12.7	101	151		127
3.7	39	70		037	6.8	69	109		068	13.0	101	151		130
3.8	43	75		038	6.9	69	109		069	13.5	108	160		135
3.9	43	75		039	7.0	69	109		070	14.0	108	160		140
4.0	43	75		040	7.1	69	109		071					

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100	St<1200	St<1400	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–90	80–90	60–65	50–60	40–50	30–50	25–45	25–45	20–28	-	-	-	-	15–18	10–15	-	40–60	25–30

Info The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use				P M K
HM grade				H 42
Coating				coated
Designation	**W$^{\pm 0,1}$ mm**	**R$^{\pm 0,05}$ mm**		18674 ...
GTN-2	2,2	0,16	10 pieces	113
GTN-3	3,1	0,20	10 pieces	114

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10216 Powder metal twist drill SG-ESS

1/100 | HSS PM-SG | 118° | 135° | 3xD | Uni

NACHI

Design
- Straight shank
- Right cutting
- Twist angle 26–33°
- Ø < 1.4 mm thinned chisel edge
- Ø < 1.4 mm tip angle 118°

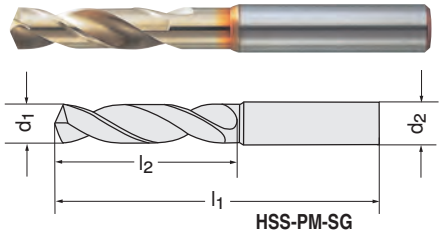
Applications
For process-reliable and cost-effective drilling on CNC machines. For universal use.

Quality
High-quality HSS-PM, ground, for steel up to 1200 N/mm². SG coating (TiCN multi-layer coating).

NEW

Note:
Note the respective length/diameter ratio of the bore diameter and the flute length. Use only high-precision tool chucks!

10216



HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
0.50	3	38	3		010
0.51	3	38	3		011
0.52	3	38	3		012
0.53	3	38	3		013
0.54	3	38	3		014
0.55	3	38	3		015
0.56	3	38	3		016
0.57	3	38	3		017
0.58	3	38	3		018
0.59	3	38	3		019
0.60	3.5	38	3		020
0.61	3.5	38	3		021
0.62	3.5	38	3		022
0.63	3.5	38	3		023
0.64	3.5	38	3		024
0.65	3.5	38	3		025
0.66	3.5	38	3		026
0.67	3.5	38	3		027
0.68	3.5	38	3		028
0.69	3.5	38	3		029
0.70	4.5	38	3		030
0.71	4.5	38	3		031
0.72	4.5	38	3		032
0.73	4.5	38	3		033
0.74	4.5	38	3		034
0.75	4.5	38	3		035
0.76	4.5	38	3		036
0.77	4.5	38	3		037
0.78	4.5	38	3		038
0.79	4.5	38	3		039
0.80	5	38	3		040
0.81	5	38	3		041
0.82	5	38	3		042
0.83	5	38	3		043
0.84	5	38	3		044
0.85	5	38	3		045
0.86	5	38	3		046
0.87	5	38	3		047
0.88	5	38	3		048
0.89	5	38	3		049
0.90	5.5	38	3		050
0.91	5.5	38	3		051
0.92	5.5	38	3		052
0.93	5.5	38	3		053
0.94	5.5	38	3		054
0.95	5.5	38	3		055
0.96	5.5	38	3		056
0.97	5.5	38	3		057
0.98	5.5	38	3		058
0.99	5.5	38	3		059
1.00	6	38	3		060
1.01	6	38	3		061
1.02	6	38	3		062
1.03	6	38	3		063

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
1.04	6	38	3		064
1.05	6	38	3		065
1.06	6	38	3		066
1.07	7	39	3		067
1.08	7	39	3		068
1.09	7	39	3		069
1.10	7	39	3		070
1.11	7	39	3		071
1.12	7	39	3		072
1.13	7	39	3		073
1.14	7	39	3		074
1.15	7	39	3		075
1.16	7	39	3		076
1.17	7	39	3		077
1.18	7	39	3		078
1.19	8	40	3		079
1.20	8	40	3		080
1.21	8	40	3		081
1.22	8	40	3		082
1.23	8	40	3		083
1.24	8	40	3		084
1.25	8	40	3		085
1.26	8	40	3		086
1.27	8	40	3		087
1.28	8	40	3		088
1.29	8	40	3		089
1.30	8	40	3		090
1.31	8	40	3		091
1.32	8	40	3		092
1.33	9	41	3		093
1.34	9	41	3		094
1.35	9	41	3		095
1.36	9	41	3		096
1.37	9	41	3		097
1.38	9	41	3		098
1.39	9	41	3		099
1.40	9	41	3		100
1.41	9	41	3		101
1.42	9	41	3		102
1.43	9	41	3		103
1.44	9	41	3		104
1.45	9	41	3		105
1.46	9	41	3		106
1.47	9	41	3		107
1.48	9	41	3		108
1.49	9	41	3		109
1.50	9	41	3		110
1.51	10	42	3		111
1.52	10	42	3		112
1.53	10	42	3		113
1.54	10	42	3		114
1.55	10	42	3		115
1.56	10	42	3		116
1.57	10	42	3		117

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
1.58	10	42	3		118
1.59	10	42	3		119
1.60	10	42	3		120
1.61	10	42	3		121
1.62	10	42	3		122
1.63	10	42	3		123
1.64	10	42	3		124
1.65	10	42	3		125
1.66	10	42	3		126
1.67	10	42	3		127
1.68	10	42	3		128
1.69	10	42	3		129
1.70	10	42	3		130
1.71	11	43	3		131
1.72	11	43	3		132
1.73	11	43	3		133
1.74	11	43	3		134
1.75	11	43	3		135
1.76	11	43	3		136
1.77	11	43	3		137
1.78	11	43	3		138
1.79	11	43	3		139
1.80	11	43	3		140
1.81	11	43	3		141
1.82	11	43	3		142
1.83	11	43	3		143
1.84	11	43	3		144
1.85	11	43	3		145
1.86	11	43	3		146
1.87	11	43	3		147
1.88	11	43	3		148
1.89	11	43	3		149
1.90	11	43	3		150
1.91	12	44	3		151
1.92	12	44	3		152
1.93	12	44	3		153
1.94	12	44	3		154
1.95	12	44	3		155
1.96	12	44	3		156
1.97	12	44	3		157
1.98	12	44	3		158
1.99	12	44	3		159
2.00	12	44	3		160
2.01	12	44	3		161
2.02	12	44	3		162
2.03	12	44	3		163
2.04	12	44	3		164
2.05	12	44	3		165
2.06	12	44	3		166
2.07	12	44	3		167
2.08	12	44	3		168
2.09	12	44	3		169
2.10	12	44	3		170
2.11	12	44	3		171

Continued ▶

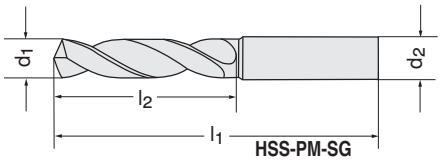
Twist drill

10216 Powder metal twist drill SG-ESS

1/100 | HSS PM-SG | 118° | 135° | 3xD | Uni

Continued

NEW



HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
2.12	12	44	3		172
2.13	13	45	3		173
2.14	13	45	3		174
2.15	13	45	3		175
2.16	13	45	3		176
2.17	13	45	3		177
2.18	13	45	3		178
2.19	13	45	3		179
2.20	13	45	3		180
2.21	13	45	3		181
2.22	13	45	3		182
2.23	13	45	3		183
2.24	13	45	3		184
2.25	13	45	3		185
2.26	13	45	3		186
2.27	13	45	3		187
2.28	13	45	3		188
2.29	13	45	3		189
2.30	13	45	3		190
2.31	13	45	3		191
2.32	13	45	3		192
2.33	13	45	3		193
2.34	13	45	3		194
2.35	13	45	3		195
2.36	13	45	3		196
2.37	14	46	3		197
2.38	14	46	3		198
2.39	14	46	3		199
2.40	14	46	3		200
2.41	14	46	3		201
2.42	14	46	3		202
2.43	14	46	3		203
2.44	14	46	3		204
2.45	14	46	3		205
2.46	14	46	3		206
2.47	14	46	3		207
2.48	14	46	3		208
2.49	14	46	3		209
2.50	14	46	3		210
2.51	14	46	3		211
2.52	14	46	3		212
2.53	14	46	3		213
2.54	14	46	3		214
2.55	14	46	3		215
2.56	14	46	3		216
2.57	14	46	3		217
2.58	14	46	3		218
2.59	14	46	3		219
2.60	14	46	3		220
2.61	14	46	3		221
2.62	14	46	3		222
2.63	14	46	3		223
2.64	14	46	3		224
2.65	14	46	3		225
2.66	16	48	3		226
2.67	16	48	3		227
2.68	16	48	3		228
2.69	16	48	3		229

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
2.70	16	48	3		230
2.71	16	48	3		231
2.72	16	48	3		232
2.73	16	48	3		233
2.74	16	48	3		234
2.75	16	48	3		235
2.76	16	48	3		236
2.77	16	48	3		237
2.78	16	48	3		238
2.79	16	48	3		239
2.80	16	48	3		240
2.81	16	48	3		241
2.82	16	48	3		242
2.83	16	48	3		243
2.84	16	48	3		244
2.85	16	48	3		245
2.86	16	48	3		246
2.87	16	48	3		247
2.88	16	48	3		248
2.89	16	48	3		249
2.90	16	48	3		250
2.91	16	48	3		251
2.92	16	48	3		252
2.93	16	48	3		253
2.94	16	48	3		254
2.95	16	48	3		255
2.96	16	48	3		256
2.97	16	48	3		257
2.98	16	48	3		258
2.99	16	48	3		259
3.00	16	48	3		260
3.01	18	50	4		261
3.02	18	50	4		262
3.03	18	50	4		263
3.04	18	50	4		264
3.05	18	50	4		265
3.06	18	50	4		266
3.07	18	50	4		267
3.08	18	50	4		268
3.09	18	50	4		269
3.10	18	50	4		270
3.11	18	50	4		271
3.12	18	50	4		272
3.13	18	50	4		273
3.14	18	50	4		274
3.15	18	50	4		275
3.16	18	50	4		276
3.17	18	50	4		277
3.18	18	50	4		278
3.19	18	50	4		279
3.20	18	50	4		280
3.21	18	50	4		281
3.22	18	50	4		282
3.23	18	50	4		283
3.24	18	50	4		284
3.25	18	50	4		285
3.26	18	50	4		286
3.27	18	50	4		287

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
3.28	18	50	4		288
3.29	18	50	4		289
3.30	18	50	4		290
3.31	18	50	4		291
3.32	18	50	4		292
3.33	18	50	4		293
3.34	18	50	4		294
3.35	18	50	4		295
3.36	20	52	4		296
3.37	20	52	4		297
3.38	20	52	4		298
3.39	20	52	4		299
3.40	20	52	4		300
3.41	20	52	4		301
3.42	20	52	4		302
3.43	20	52	4		303
3.44	20	52	4		304
3.45	20	52	4		305
3.46	20	52	4		306
3.47	20	52	4		307
3.48	20	52	4		308
3.49	20	52	4		309
3.50	20	52	4		310
3.51	20	52	4		311
3.52	20	52	4		312
3.53	20	52	4		313
3.54	20	52	4		314
3.55	20	52	4		315
3.56	20	52	4		316
3.57	20	52	4		317
3.58	20	52	4		318
3.59	20	52	4		319
3.60	20	52	4		320
3.61	20	52	4		321
3.62	20	52	4		322
3.63	20	52	4		323
3.64	20	52	4		324
3.65	20	52	4		325
3.66	20	52	4		326
3.67	20	52	4		327
3.68	20	52	4		328
3.69	20	52	4		329
3.70	20	52	4		330
3.71	20	52	4		331
3.72	20	52	4		332
3.73	20	52	4		333
3.74	20	52	4		334
3.75	20	52	4		335
3.76	22	54	4		336
3.77	22	54	4		337
3.78	22	54	4		338
3.79	22	54	4		339
3.80	22	54	4		340
3.81	22	54	4		341
3.82	22	54	4		342
3.83	22	54	4		343
3.84	22	54	4		344
3.85	22	54	4		345

Continued

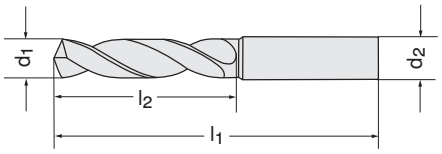
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10216 Powder metal twist drill SG-ESS

1/100 | HSS PM-SG | 118° | 135° | 3xD | Uni

Continued

NEW



HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
3.86	22	54	4		346
3.87	22	54	4		347
3.88	22	54	4		348
3.89	22	54	4		349
3.90	22	54	4		350
3.91	22	54	4		351
3.92	22	54	4		352
3.93	22	54	4		353
3.94	22	54	4		354
3.95	22	54	4		355
3.96	22	54	4		356
3.97	22	54	4		357
3.98	22	54	4		358
3.99	22	54	4		359
4.00	22	54	4		360
4.01	22	66	6		361
4.02	22	66	6		362
4.03	22	66	6		363
4.04	22	66	6		364
4.05	22	66	6		365
4.06	22	66	6		366
4.07	22	66	6		367
4.08	22	66	6		368
4.09	22	66	6		369
4.10	22	66	6		370
4.11	22	66	6		371
4.12	22	66	6		372
4.13	22	66	6		373
4.14	22	66	6		374
4.15	22	66	6		375
4.16	22	66	6		376
4.17	22	66	6		377
4.18	22	66	6		378
4.19	22	66	6		379
4.20	22	66	6		380
4.21	22	66	6		381
4.22	22	66	6		382
4.23	22	66	6		383
4.24	22	66	6		384
4.25	22	66	6		385
4.26	24	68	6		386
4.27	24	68	6		387
4.28	24	68	6		388
4.29	24	68	6		389
4.30	24	68	6		390
4.31	24	68	6		391
4.32	24	68	6		392
4.33	24	68	6		393
4.34	24	68	6		394
4.35	24	68	6		395
4.36	24	68	6		396
4.37	24	68	6		397
4.38	24	68	6		398
4.39	24	68	6		399
4.40	24	68	6		400
4.41	24	68	6		401
4.42	24	68	6		402

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
4.43	24	68	6		403
4.44	24	68	6		404
4.45	24	68	6		405
4.46	24	68	6		406
4.47	24	68	6		407
4.48	24	68	6		408
4.49	24	68	6		409
4.50	24	68	6		410
4.51	24	68	6		411
4.52	24	68	6		412
4.53	24	68	6		413
4.54	24	68	6		414
4.55	24	68	6		415
4.56	24	68	6		416
4.57	24	68	6		417
4.58	24	68	6		418
4.59	24	68	6		419
4.60	24	68	6		420
4.61	24	68	6		421
4.62	24	68	6		422
4.63	24	68	6		423
4.64	24	68	6		424
4.65	24	68	6		425
4.66	24	68	6		426
4.67	24	68	6		427
4.68	24	68	6		428
4.69	24	68	6		429
4.70	24	68	6		430
4.71	24	68	6		431
4.72	24	68	6		432
4.73	24	68	6		433
4.74	24	68	6		434
4.75	24	68	6		435
4.76	26	70	6		436
4.77	26	70	6		437
4.78	26	70	6		438
4.79	26	70	6		439
4.80	26	70	6		440
4.81	26	70	6		441
4.82	26	70	6		442
4.83	26	70	6		443
4.84	26	70	6		444
4.85	26	70	6		445
4.86	26	70	6		446
4.87	26	70	6		447
4.88	26	70	6		448
4.89	26	70	6		449
4.90	26	70	6		450
4.91	26	70	6		451
4.92	26	70	6		452
4.93	26	70	6		453
4.94	26	70	6		454
4.95	26	70	6		455
4.96	26	70	6		456
4.97	26	70	6		457
4.98	26	70	6		458
4.99	26	70	6		459

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
5.00	26	70	6		460
5.01	26	70	6		461
5.02	26	70	6		462
5.03	26	70	6		463
5.04	26	70	6		464
5.05	26	70	6		465
5.06	26	70	6		466
5.07	26	70	6		467
5.08	26	70	6		468
5.09	26	70	6		469
5.10	26	70	6		470
5.11	26	70	6		471
5.12	26	70	6		472
5.13	26	70	6		473
5.14	26	70	6		474
5.15	26	70	6		475
5.16	26	70	6		476
5.17	26	70	6		477
5.18	26	70	6		478
5.19	26	70	6		479
5.20	26	70	6		480
5.21	26	70	6		481
5.22	26	70	6		482
5.23	26	70	6		483
5.24	26	70	6		484
5.25	26	70	6		485
5.26	26	70	6		486
5.27	26	70	6		487
5.28	26	70	6		488
5.29	26	70	6		489
5.30	26	70	6		490
5.31	28	72	6		491
5.32	28	72	6		492
5.33	28	72	6		493
5.34	28	72	6		494
5.35	28	72	6		495
5.36	28	72	6		496
5.37	28	72	6		497
5.38	28	72	6		498
5.39	28	72	6		499
5.40	28	72	6		500
5.41	28	72	6		501
5.42	28	72	6		502
5.43	28	72	6		503
5.44	28	72	6		504
5.45	28	72	6		505
5.46	28	72	6		506
5.47	28	72	6		507
5.48	28	72	6		508
5.49	28	72	6		509
5.50	28	72	6		510
5.51	28	72	6		511
5.52	28	72	6		512
5.53	28	72	6		513
5.54	28	72	6		514
5.55	28	72	6		515
5.56	28	72	6		516

Continued

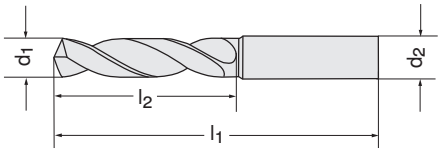
Twist drill

10216 Powder metal twist drill SG-ESS

1/100 | HSS PM-SG | 118° | 135° | 3xD | Uni

Continued

NEW



				HSS-PM-SG	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
5.57	28	72	6		517
5.58	28	72	6		518
5.59	28	72	6		519
5.60	28	72	6		520
5.61	28	72	6		521
5.62	28	72	6		522
5.63	28	72	6		523
5.64	28	72	6		524
5.65	28	72	6		525
5.66	28	72	6		526
5.67	28	72	6		527
5.68	28	72	6		528
5.69	28	72	6		529
5.70	28	72	6		530
5.71	28	72	6		531
5.72	28	72	6		532
5.73	28	72	6		533
5.74	28	72	6		534
5.75	28	72	6		535
5.76	28	72	6		536
5.77	28	72	6		537
5.78	28	72	6		538
5.79	28	72	6		539
5.80	28	72	6		540
5.81	28	72	6		541
5.82	28	72	6		542
5.83	28	72	6		543
5.84	28	72	6		544
5.85	28	72	6		545
5.86	28	72	6		546
5.87	28	72	6		547
5.88	28	72	6		548
5.89	28	72	6		549
5.90	28	72	6		550
5.91	28	72	6		551
5.92	28	72	6		552
5.93	28	72	6		553
5.94	28	72	6		554
5.95	28	72	6		555
5.96	28	72	6		556
5.97	28	72	6		557
5.98	28	72	6		558
5.99	28	72	6		559

				HSS-PM-SG	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
6.0	28	72	6		560
6.1	31	75	8		561
6.2	31	75	8		562
6.3	31	75	8		563
6.4	31	75	8		564
6.5	31	75	8		565
6.6	31	75	8		566
6.7	31	75	8		567
6.8	34	78	8		568
6.9	34	78	8		569
7.0	34	78	8		570
7.1	34	78	8		571
7.2	34	78	8		572
7.3	34	78	8		573
7.4	34	78	8		574
7.5	34	78	8		575
7.6	37	81	8		576
7.7	37	81	8		577
7.8	37	81	8		578
7.9	37	81	8		579
8.0	37	81	8		580
8.1	37	87	10		581
8.2	37	87	10		582
8.3	37	87	10		583
8.4	37	87	10		584
8.5	37	87	10		585
8.6	40	90	10		586
8.7	40	90	10		587
8.8	40	90	10		588
8.9	40	90	10		589
9.0	40	90	10		590
9.1	40	90	10		591
9.2	40	90	10		592
9.3	40	90	10		593
9.4	40	90	10		594
9.5	40	90	10		595
9.6	43	93	10		596
9.7	43	93	10		597
9.8	43	93	10		598
9.9	43	93	10		599
10.0	43	93	10		600
10.1	43	100	12		601
10.2	43	100	12		602

				HSS-PM-SG	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10216	...
10.3	43	100	12		603
10.4	43	100	12		604
10.5	43	100	12		605
10.6	43	100	12		606
10.7	47	104	12		607
10.8	47	104	12		608
10.9	47	104	12		609
11.0	47	104	12		610
11.1	47	104	12		611
11.2	47	104	12		612
11.3	47	104	12		613
11.4	47	104	12		614
11.5	47	104	12		615
11.6	47	104	12		616
11.7	47	104	12		617
11.8	47	104	12		618
11.9	51	108	12		619
12.0	51	108	12		620
12.1	51	108	12		621
12.2	51	108	12		622
12.3	51	108	12		623
12.4	51	108	12		624
12.5	51	108	12		625
12.6	51	108	12		626
12.7	51	108	12		627
12.8	51	108	12		628
12.9	51	108	12		629
13.0	51	108	12		630
13.5	72	132	16		631
14.0	72	132	16		632
14.5	76	136	16		633
15.0	76	142	20		634
15.5	80	146	20		635
16.0	80	146	20		636
16.5	84	150	20		637
17.0	84	150	20		638
17.5	87	153	20		639
18.0	87	153	20		640
18.5	90	156	20		641
19.0	90	164	25		642
19.3	94	164	25		643
19.5	94	168	25		644
20.0	94	168	25		645

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–70	36–68	36–68	30–40	30–40	25–32	25–32	15–20	-	-	-	-	-	8–12	8–10	4–5	32–45	-

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10217 Powder metal twist drill SG-ESR

HSS PM-SG | 135° | 5xD | Uni

NACHI

Design
- Straight shank
- Right cutting
- Twist angle 31–32°
- Tip angle 135°
- Thinned chisel edge

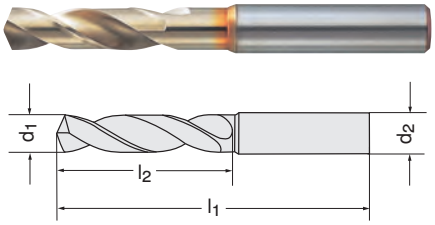
Applications
For process-reliable and cost-effective drilling on CNC machines. For universal use.

Quality
HSS-PM, ground, for steel up to 1200 N/mm². SG coating (TiCN multi-layer coating).

Note:
Note the respective length/diameter ratio of the bore diameter and the flute length.
Use only high-precision tool chucks!

NEW

10217



HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10217	...
2.0	24	56	3		010
2.1	24	56	3		011
2.2	25	56	3		012
2.3	25	56	3		013
2.4	30	61	3		014
2.5	30	61	3		015
2.6	30	61	3		016
2.7	33	64	3		017
2.8	33	64	3		018
2.9	33	64	3		019
3.0	33	64	3		020
3.1	36	68	4		021
3.2	36	68	4		022
3.3	36	68	4		023
3.4	39	71	4		024
3.5	39	71	4		025
3.6	39	71	4		026
3.7	39	71	4		027
3.8	43	75	4		028
3.9	43	75	4		029
4.0	43	75	4		030
4.1	43	85	6		031
4.2	43	85	6		032
4.3	47	89	6		033
4.4	47	89	6		034
4.5	47	89	6		035
4.6	47	89	6		036
4.7	47	89	6		037
4.8	52	94	6		038
4.9	52	94	6		039
5.0	52	94	6		040
5.1	52	94	6		041
5.2	52	94	6		042
5.3	52	94	6		043
5.4	57	99	6		044
5.5	57	99	6		045
5.6	57	99	6		046
5.7	57	99	6		047
5.8	57	99	6		048
5.9	57	99	6		049
6.0	57	99	6		050
6.1	63	107	8		051
6.2	63	107	8		052
6.3	63	107	8		053
6.4	63	107	8		054
6.5	63	107	8		055
6.6	63	107	8		056
6.7	63	107	8		057
6.8	69	113	8		058
6.9	69	113	8		059

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10217	...
7.0	69	113	8		060
7.1	69	113	8		061
7.2	69	113	8		062
7.3	69	113	8		063
7.4	69	113	8		064
7.5	69	113	8		065
7.6	75	119	8		066
7.7	75	119	8		067
7.8	75	119	8		068
7.9	75	119	8		069
8.0	75	119	8		070
8.1	75	125	10		071
8.2	75	125	10		072
8.3	75	125	10		073
8.4	75	125	10		074
8.5	75	125	10		075
8.6	81	131	10		076
8.7	81	131	10		077
8.8	81	131	10		078
8.9	81	131	10		079
9.0	81	131	10		080
9.1	81	131	10		081
9.2	81	131	10		082
9.3	81	131	10		083
9.4	81	131	10		084
9.5	81	131	10		085
9.6	87	137	10		086
9.7	87	137	10		087
9.8	87	137	10		088
9.9	87	137	10		089
10.0	87	137	10		090
10.1	87	144	12		091
10.2	87	144	12		092
10.3	87	144	12		093
10.4	87	144	12		094
10.5	87	144	12		095
10.6	87	144	12		096
10.7	94	151	12		097
10.8	94	151	12		098
10.9	94	151	12		099
11.0	94	151	12		100
11.1	94	151	12		101
11.2	94	151	12		102
11.3	94	151	12		103
11.4	94	151	12		104
11.5	94	151	12		105
11.6	94	151	12		106
11.7	94	151	12		107
11.8	94	151	12		108
11.9	101	158	12		109

HSS-PM-SG

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h7 mm	10217	...
12.0	101	158	12		110
12.1	101	158	12		111
12.2	101	158	12		112
12.3	101	158	12		113
12.4	101	158	12		114
12.5	101	158	12		115
12.6	101	158	12		116
12.7	101	158	12		117
12.8	101	158	12		118
12.9	101	158	12		119
13.0	101	158	12		120
13.5	108	168	16		121
14.0	108	168	16		122
14.5	114	173	16		123
15.0	114	180	20		124
15.5	120	185	20		125
16.0	120	185	20		126
16.5	125	189	20		127
17.0	125	189	20		128
17.5	130	194	20		129
18.0	130	194	20		130
18.5	135	198	20		131
19.0	135	206	25		132
19.5	140	210	25		133
20.0	140	210	25		134
20.5	145	214	25		135
21.0	145	214	25		136
21.5	150	218	25		137
22.0	150	218	25		138
22.5	155	223	25		139
23.0	155	223	25		140
23.5	155	223	25		141
24.0	160	237	32		142
24.5	160	237	32		143
25.0	165	241	32		144
25.5	165	241	32		145
26.0	165	241	32		146
26.5	165	241	32		147
27.0	170	245	32		148
27.5	170	245	32		149
28.0	170	245	32		150
28.5	175	248	32		151
29.0	175	248	32		152
29.5	175	248	32		153
30.0	175	248	32		154
30.5	180	252	32		155
31.0	180	252	32		156
31.5	180	252	32		157
32.0	185	252	32		158

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–70	36–68	36–68	30–40	30–40	25–32	25–32	15–20	-	-	-	-	-	8–12	8–10	4–5	32–45	-

( ) = Items with prices in brackets partly available from stock.

Micro drills | Bodywork drills | Twist drills

10220 Micro drills

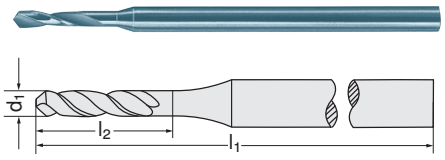
DIN 1899 | N | 118° | HSS-E | ≤ 1200 N/mm²

HARTNER

Design
- Special drill with reinforced shank
- High concentricity
- Precise tip angle
- Up to drill Ø 0.79 = shank Ø 1.0 mm
- From drill Ø 0.80 = shank Ø 1.5 mm

Quality
HSS-E ground for universal use and in steels up to 1200 N/mm².

10220



HSS-E

d_1 mm	l_2 mm	l_1 mm		10220	...
0.16	1.1	25	10 pcs.		102
0.17	1.1	25	10 pcs.		103
0.18	1.1	25	10 pcs.		104
0.19	1.1	25	10 pcs.		105
0.20	1.5	25	10 pcs.		106
0.21	1.5	25	10 pcs.		107
0.22	1.5	25	10 pcs.		108
0.23	1.5	25	10 pcs.		109
0.24	1.5	25	10 pcs.		110
0.25	1.9	25	10 pcs.		111
0.26	1.9	25	10 pcs.		112
0.27	1.9	25	10 pcs.		113
0.28	1.9	25	10 pcs.		114
0.29	1.9	25	10 pcs.		115
0.30	1.9	25	10 pcs.		116
0.32	2.4	25	10 pcs.		118
0.33	2.4	25	10 pcs.		119
0.34	2.4	25	10 pcs.		120
0.35	2.4	25	10 pcs.		121
0.36	2.4	25	10 pcs.		122
0.38	2.4	25	10 pcs.		124
0.39	3.0	25	10 pcs.		125
0.40	3.0	25	10 pcs.		126

HSS-E

d_1 mm	l_2 mm	l_1 mm		10220	...
0.42	3.0	25	10 pcs.		128
0.43	3.0	25	10 pcs.		129
0.44	3.0	25	10 pcs.		130
0.45	3.0	25	10 pcs.		131
0.47	3.0	25	10 pcs.		133
0.48	3.0	25	10 pcs.		134
0.49	3.4	25	10 pcs.		135
0.50	3.4	25	10 pcs.		136
0.52	3.4	25	10 pcs.		138
0.55	3.9	25	10 pcs.		141
0.56	3.9	25	10 pcs.		142
0.57	3.9	25	10 pcs.		143
0.58	3.9	25	10 pcs.		144
0.59	3.9	25	10 pcs.		145
0.60	3.9	25	10 pcs.		146
0.62	4.2	25	10 pcs.		148
0.63	4.2	25	10 pcs.		149
0.64	4.2	25	10 pcs.		150
0.65	4.2	25	10 pcs.		151
0.66	4.2	25	10 pcs.		152
0.70	4.8	25	10 pcs.		156
0.71	4.8	25	10 pcs.		157
0.72	4.8	25	10 pcs.		158

HSS-E

d_1 mm	l_2 mm	l_1 mm		10220	...
0.73	4.8	25	10 pcs.		159
0.75	4.8	25	10 pcs.		161
0.79	5.3	25	10 pcs.		165
0.80	5.3	25	10 pcs.		166
0.81	5.3	25	10 pcs.		167
0.82	5.3	25	10 pcs.		168
0.83	5.3	25	10 pcs.		169
0.85	5.3	25	10 pcs.		171
0.90	6.0	25	10 pcs.		176
0.92	6.0	25	10 pcs.		178
0.95	6.0	25	10 pcs.		181
0.96	6.8	25	10 pcs.		182
1.00	6.8	25	10 pcs.		186
1.05	6.8	25	10 pcs.		187
1.10	7.6	25	10 pcs.		188
1.15	7.6	25	10 pcs.		189
1.20	8.5	25	10 pcs.		190
1.25	8.5	25	10 pcs.		191
1.30	8.5	25	10 pcs.		192
1.40	9.5	25	10 pcs.		194
1.45	9.5	25	10 pcs.		195

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
18–20	15–18	20–22	20–25	18–20	14–18	12–14	10–12	-	-	-	-	-	6–8	6–8	-	18–28	16–18

10250 Double-sided bodywork drill

N | 118° | HSS | ≤ 800 N/mm²

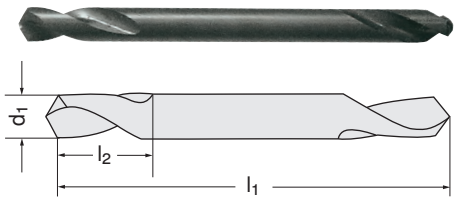
HHW

Design
- Double-sided ground
- Extremely break-proof due to shorter chip flutes
- Ideal for hand-guided machines
- Special surface treatment

Quality
HSS ground.

Note:
Specially designed for drilling thin sheet metals.

10250



HSS

d_1 h8 mm	l_2 mm	l_1 mm		10250	...
2.5	9.5	43	10 pcs.		104
3.0	10.6	46	10 pcs.		105
3.1	11.2	49	10 pcs.		106

HSS

d_1 h8 mm	l_2 mm	l_1 mm		10250	...
3.2	11.2	49	10 pcs.		107
3.3	11.2	49	10 pcs.		108
4.0	14.0	55	10 pcs.		113

HSS

d_1 h8 mm	l_2 mm	l_1 mm		10250	...
4.1	14.0	55	10 pcs.		114
4.2	14.0	55	10 pcs.		115
5.0	17.0	62	10 pcs.		117

Info Precision short drill chuck

Can be found from page 21.11

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

10252 - 10257 Extra-short twist drills

DIN 1897

ATORN®

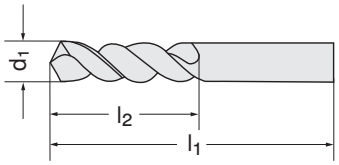
Design
- Straight shank
- Right cutting
- Cone-shaped section finish

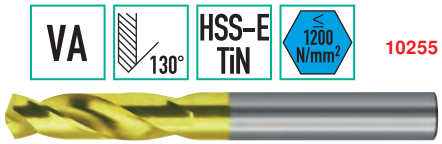
Note:
High concentricity. Long service life.
Drills for production.

10252
Quality
HSS ground for steels up to 900 N/mm².

10257
Quality
HSS-E with reinforced core and point thinning for VA steels.

10255
Quality
HSS-E/TiN with special point thinning for quiet running and maximum service life in VA, spring steel, special alloys such as Hastelloy, Nimonic and Inconel.





				HSS		HSS-E		HSS-E/TiN	
d_1 h8 mm	l_2 mm	l_1 mm		10252	...	10257	...	10255	...
1.00	6	26	10 pcs.			610		640	310
1.10	7	28	10 pcs.			612		646	
1.20	8	30	10 pcs.			613		652	312
1.30	8	30	10 pcs.			615		655	
1.40	9	32	10 pcs.			617		658	314
1.50	9	32	10 pcs.			619		661	315
1.60	10	34	10 pcs.			622		664	316
1.70	10	34	10 pcs.					667	
1.80	11	36	10 pcs.			626		670	318
1.90	11	36	10 pcs.			628		676	
2.00	12	38	10 pcs.			630		679	320
2.10	12	38	10 pcs.			632		682	321
2.20	13	40	10 pcs.			634		685	322
2.30	13	40	10 pcs.			636		691	
2.40	14	43	10 pcs.			638		694	324
2.50	14	43	10 pcs.			640		697	325
2.60	14	43	10 pcs.			642		700	326
2.70	16	46	10 pcs.			644		703	327
2.80	16	46	10 pcs.			646		706	328
2.90	16	46	10 pcs.			647		711	
3.00	16	46	10 pcs.			649		714	330
3.10	18	49	10 pcs.			651		717	
3.20	18	49	10 pcs.			652		720	332
3.25	18	49	10 pcs.					723	
3.30	18	49	10 pcs.			654		726	333
3.40	20	52	10 pcs.			655		729	334
3.50	20	52	10 pcs.			657		732	335
3.60	20	52	10 pcs.			658		735	336
3.70	20	52	10 pcs.			659		738	
3.80	22	55	10 pcs.			661		741	338
3.90	22	55	10 pcs.			663		743	
4.00	22	55	10 pcs.			664		746	340
4.10	22	55	10 pcs.			665		749	341
4.20	22	55	10 pcs.			666		752	342
4.30	24	58	10 pcs.			668		758	343
4.40	24	58	10 pcs.					761	
4.50	24	58	10 pcs.			672		764	345
4.60	24	58	10 pcs.					767	
4.70	24	58	10 pcs.			675		773	
4.80	26	62	10 pcs.			677		776	
4.90	26	62	10 pcs.			679		779	
5.00	26	62	10 pcs.			681		782	350
5.10	26	62	10 pcs.			682		785	351
5.20	26	62	10 pcs.			683		788	352
5.30	26	62	10 pcs.			685		791	
5.40	26	62	10 pcs.			686		794	
5.50	28	66	10 pcs.			687		797	355
5.55	28	66	10 pcs.					800	
5.60	28	66	10 pcs.					803	
5.80	28	66	10 pcs.			691		809	358
6.00	28	66	10 pcs.			694		815	360
6.10	31	70	-			695		818	
6.20	31	70	-			697		821	
6.30	31	70	-			699		824	
6.40	31	70	-			701		827	
6.50	31	70	-			702		830	365
6.60	31	70	-			703		833	366
6.80	34	74	-			706		840	368
6.90	34	74	-					843	
7.00	34	74	-			708		846	370
7.10	34	74	-			709		849	371
7.30	34	74	-					855	
7.40	34	74	-					858	
7.50	34	74	-			715		861	375
7,80	37	79	-			719		870	378
7.90	37	79	-			720		873	
8.00	37	79	-			721		876	380
8.10	37	79	-			722		879	381
8.20	37	79	-			723		882	382
8.40	37	79	-			727			384
8.50	37	79	-			728		890	385
8.80	40	84	-						388
8.90	40	84	-					898	
9.00	40	84	-			736		900	390
9.10	40	84	-					902	
9.40	40	84	-					908	
9.50	40	84	-			743		910	
9.60	43	89	-					912	
9.70	43	89	-					914	
9.80	43	89	-					916	
10.00	43	89	-			749		920	400
10.20	43	89	-			752			402
10.50	43	89	-			756		930	405
11.00	47	95	-			761		936	410
11.10	47	95	-					938	
11.50	47	95	-			765		946	415
11.80	47	95	-					948	
12.00	51	102	-			769		950	420
12.50	51	102	-			772		956	425
12.80	51	102	-					958	
13.00	51	102	-			777		960	430
13.50	54	107	-			779		964	
14.00	54	107	-			783		966	
14.50	56	111	-			786		968	

Continued ▶

Twist drill

10252 - 10257 Extra-short twist drills

DIN 1897

Continued ▶

d_1 h8 mm	l_2 mm	l_1 mm		HSS 10252	...	HSS-E 10257	...	HSS-E/TiN 10255	...
15.00	56	111	-			788		970	
16.00	58	115	-			794		974	
16.50	60	119	-					976	
18.00	62	123	-					982	
18.50	64	127	-					984	
19.00	64	127	-					986	
20.00	66	131	-					990	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10252																	
60–70	50–55	30–35	32–38	30–34	28–36	-	-	-	-	-	-	-	-	-	-	23–32	-
10257																	
60–70	50–55	32–36	32–36	28–32	25–28	-	-	-	-	-	-	-	12–14	8–10	-	22–30	15–18
10255																	
-	-	-	40–45	35–40	25–35	20–25	18–20	14–18	-	-	-	-	15–20	15–20	-	40–45	-

10259 Multi-range twist drill MBS 1200

DIN 1897 | 118° | HSS-E | Uni

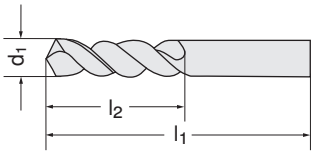
ATORN®

Design
- Straight shank
- Right cutting
- Special point thinning
- 4-surface cut

Quality
HSS-E ground for universal use
In VA, steel up to 1200 N/mm², cast iron and aluminium.

Note:
Universal use, smooth running, low torque, high dimensional accuracy, optimal chip evacuation thanks to round groove profile.

10259



d_1 h8 mm	l_2 mm	l_1 mm		HSS-E 10259	...
1.0	6	26	10 pcs.		301
1.1	7	28	10 pcs.		302
1.2	8	30	10 pcs.		303
1.3	8	30	10 pcs.		304
1.4	9	32	10 pcs.		305
1.5	9	32	10 pcs.		306
1.6	10	34	10 pcs.		307
1.7	10	34	10 pcs.		308
1.8	11	36	10 pcs.		309
1.9	11	36	10 pcs.		310
2.0	12	38	10 pcs.		311
2.1	12	38	10 pcs.		312
2.2	13	40	10 pcs.		313
2.3	13	40	10 pcs.		314
2.4	14	43	10 pcs.		315
2.5	14	43	10 pcs.		316
2.6	14	43	10 pcs.		317
2.7	16	46	10 pcs.		318
2.8	16	46	10 pcs.		319
2.9	16	46	10 pcs.		320
3.0	16	46	10 pcs.		321
3.1	18	49	10 pcs.		322
3.2	18	49	10 pcs.		323
3.3	18	49	10 pcs.		324
3.4	20	52	10 pcs.		325
3.5	20	52	10 pcs.		326
3.6	20	52	10 pcs.		327
3.7	20	52	10 pcs.		328
3.8	22	55	10 pcs.		329
3.9	22	55	10 pcs.		330
4.0	22	55	10 pcs.		331
4.1	22	55	10 pcs.		332
4.2	22	55	10 pcs.		333
4.3	24	58	10 pcs.		334
4.4	24	58	10 pcs.		335
4.5	24	58	10 pcs.		336
4.6	24	58	10 pcs.		337
4.7	24	58	10 pcs.		338
4.8	26	62	10 pcs.		339
4.9	26	62	10 pcs.		340
5.0	26	62	10 pcs.		341
5.1	26	62	10 pcs.		342
5.2	26	62	10 pcs.		343
5.3	26	62	10 pcs.		344
5.4	28	66	10 pcs.		345
5.5	28	66	10 pcs.		346
5.6	28	66	10 pcs.		347
5.7	28	66	10 pcs.		348
5.8	28	66	10 pcs.		349
5.9	28	66	10 pcs.		350
6.0	28	66	10 pcs.		351
6.1	31	70	-		352
6.2	31	70	-		353
6.3	31	70	-		354
6.4	31	70	-		355
6.5	31	70	-		356
6.6	31	70	-		357
6.7	31	70	-		358
6.8	34	74	-		359
6.9	34	74	-		360
7.0	34	74	-		361
7.1	34	74	-		362
7.2	34	74	-		363
7.3	34	74	-		364
7.4	34	74	-		365
7.5	34	74	-		366
7.6	37	79	-		367
7.7	37	79	-		368
7.8	37	79	-		369
7.9	37	79	-		370
8.0	37	79	-		371
8.1	37	79	-		372
8.2	37	79	-		373
8.3	37	79	-		374
8.4	37	79	-		375
8.5	37	79	-		376
8.8	40	84	-		377
9.0	40	84	-		378
9.3	40	84	-		379
9.5	40	84	-		380
9.8	43	89	-		381
10.0	43	89	-		382
10.2	43	89	-		383
10.5	43	89	-		384
11.0	47	95	-		385
11.5	47	95	-		386
12.0	51	102	-		387
12.5	51	102	-		388
13.0	51	102	-		389
13.5	54	107	-		390
14.0	54	107	-		391

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	30–40	40–50	35–42	32–40	28–28	16–20	15–18	-	-	-	-	-	18–20	14–16	-	25–50	25–32

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10260 Uni twist drill HSS-E V3

DIN 1897 | 140° | 130° | 120° | HSS-E TiAlN | 3xD | Uni

ATORN®

Design
- NC shank
- Structural dimensions similar to DIN 1897
- Special profile

Quality
HSS-E-Co/TiAlN.

Note:
High degree of concentricity, service life and dimensional accuracy. Problem solver for all VA materials. Drills for production. Drilling without centring.

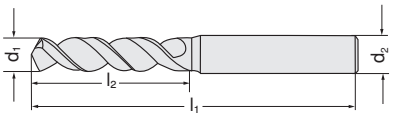
10260 080-090
Design
- Tip angle 140°

10260 091-111
Design
- Tip angle 130°

10260 112-249
Design
- Tip angle 120°

NEW

10260



HSS-E/TiAlN

d_1 h8 mm	l_2 mm	l_1 mm	d_2 h7 mm	10260	...
1.0	6	26	3		080
1.1	7	28	3		081
1.2	8	30	3		082
1.3	8	30	3		083
1.4	9	32	3		084
1.5	9	32	3		085
1.6	10	34	3		086
1.7	10	34	3		087
1.8	11	36	3		088
1.9	11	36	3		089
2.0	12	38	3		090
2.1	12	38	3		091
2.2	13	40	3		092
2.3	13	40	3		093
2.4	14	43	3		094
2.5	14	43	3		095
2.6	14	43	3		096
2.7	16	46	3		097
2.8	16	46	3		098
2.85	16	46	3		230
2.9	16	46	3		100
3.0	16	46	3		101
3.1	18	49	4		102
3.2	18	49	4		103
3.3	18	49	4		104
3.4	20	52	4		105
3.5	20	52	4		106
3.6	20	52	4		107
3.7	20	52	4		108
3.8	22	55	4		109
3.9	22	55	4		110
4.0	22	55	4		111
4.1	22	55	6		112
4.2	22	55	6		113
4.3	24	58	6		114
4.4	24	58	6		115
4.5	24	58	6		116
4.6	24	58	6		117
4.65	24	58	6		231
4.7	24	58	6		118
4.8	26	62	6		119
4.9	26	62	6		120
5.0	26	62	6		121
5.1	26	62	6		122
5.2	26	62	6		123
5.3	26	62	6		124
5.4	28	66	6		125

HSS-E/TiAlN

d_1 h8 mm	l_2 mm	l_1 mm	d_2 h7 mm	10260	...
5.5	28	66	6		126
5.55	28	66	6		232
5.6	28	66	6		127
5.65	28	66	6		233
5.7	28	66	6		128
5.8	28	66	6		129
5.9	28	66	6		130
6.0	28	66	6		131
6.1	32	70	8		132
6.2	32	70	8		133
6.3	32	70	8		134
6.4	32	70	8		135
6.5	32	70	8		136
6.6	32	70	8		137
6.7	32	70	8		138
6.8	34	74	8		139
6.9	34	74	8		140
7.0	34	74	8		141
7.1	34	74	8		142
7.2	34	74	8		143
7.3	34	74	8		144
7.4	34	74	8		145
7.5	34	74	8		146
7.55	37	79	8		234
7.6	37	79	8		147
7.7	37	79	8		148
7.8	37	79	8		149
7.9	37	79	8		150
8.0	37	79	8		151
8.1	37	79	10		152
8.2	37	79	10		153
8.3	37	79	10		154
8.4	37	79	10		155
8.5	37	79	10		156
8.6	40	84	10		157
8.7	40	84	10		158
8.8	40	84	10		159
8.9	40	84	10		160
9.0	40	84	10		161
9.1	40	84	10		162
9.2	40	84	10		163
9.3	40	84	10		164
9.4	40	84	10		165
9.5	40	84	10		166
9.55	43	89	10		235
9.6	43	89	10		167
9.7	43	89	10		168

HSS-E/TiAlN

d_1 h8 mm	l_2 mm	l_1 mm	d_2 h7 mm	10260	...
9.8	43	89	10		169
9.9	43	89	10		170
10.0	43	89	10		171
10.1	43	89	10		172
10.2	43	89	10		173
10.3	43	89	10		174
10.4	43	89	10		175
10.5	43	89	10		176
10.6	43	89	12		177
10.7	47	95	12		178
10.8	47	95	12		180
10.9	47	95	12		181
11.0	47	95	12		182
11.1	47	95	12		183
11.2	47	95	12		184
11.3	47	95	12		185
11.4	47	95	12		186
11.5	47	95	12		187
11.6	47	95	12		188
11.7	47	95	12		189
11.8	47	95	12		190
11.9	47	95	12		191
12.0	51	102	12		192
12.1	51	102	12		193
12.2	51	102	12		194
12.3	51	102	12		195
12.4	51	102	12		196
12.5	51	102	12		197
12.6	51	102	12		198
12.7	51	102	12		199
12.8	51	102	12		200
12.9	51	102	12		201
13.0	51	102	12		202
13.5	54	107	16		236
14.0	54	107	16		237
14.5	56	111	16		238
15.0	56	111	16		239
15.5	58	115	16		240
16.0	58	115	16		241
16.5	60	119	20		242
17.0	60	119	20		243
17.5	62	123	20		244
18.0	62	123	20		245
18.5	64	127	20		246
19.0	64	127	20		247
19.5	66	131	20		248
20.0	66	131	20		249

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–100	63–90	25–50	32–45	34–40	22–28	22–25	18–22	15–18	-	-	-	-	13–18	8–12	-	32–40	-

( ) = Items with prices in brackets partly available from stock.

Short chip drills | Twist drills

10261 High-performance short chip drill UNI

DIN 1897 | 130° | HSS-E-PM TiN | ≤ 1400 N/mm² | Uni

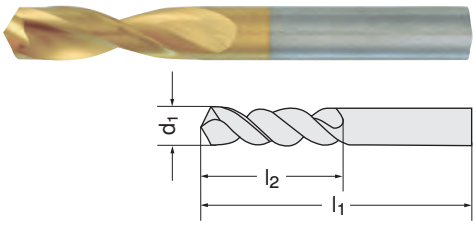
ATORN®

Design
- Special profile
- Low wear on the cutting edges
- Temperature-resistant

Quality
HSS-E-PM/TiN for universal use.

Note:
High degree of concentricity, service life and dimensional accuracy. Short chips. Drilling without centring. Drills for production.

10261



HSS-E-PM/TiN

d_1 h8 mm	l_2 mm	l_1 mm	10261	...
1.0	6	26		010
1.1	7	28		011
1.2	8	30		012
1.3	8	30		013
1.4	9	32		014
1.5	9	32		015
1.6	10	34		016
1.7	10	34		017
1.8	11	36		018
1.9	11	36		019
2.0	12	38		020
2.1	12	38		021
2.2	13	40		022
2.3	13	40		023
2.4	14	43		024
2.5	14	43		025
2.6	14	43		026
2.7	16	46		027
2.8	16	46		028
2.9	16	46		029
3.0	16	46		030
3.1	18	49		031
3.2	18	49		032
3.3	18	49		033
3.4	20	52		034
3.5	20	52		035
3.6	20	52		036
3.7	20	52		037
3.8	22	55		038
3.9	22	55		039
4.0	22	55		040

HSS-E-PM/TiN

d_1 h8 mm	l_2 mm	l_1 mm	10261	...
4.1	22	55		041
4.2	22	55		042
4.3	24	58		043
4.4	24	58		044
4.5	24	58		045
4.6	24	58		046
4.7	24	58		047
4.8	26	62		048
4.9	26	62		049
5.0	26	62		050
5.1	26	62		051
5.2	26	62		052
5.3	26	62		053
5.4	28	66		054
5.5	28	66		055
5.6	28	66		056
5.7	28	66		057
5.8	28	66		058
5.9	28	66		059
6.0	28	66		060
6.1	31	70		061
6.2	31	70		062
6.3	31	70		063
6.4	31	70		064
6.5	31	70		065
6.6	31	70		066
6.7	31	70		067
6.8	34	74		068
6.9	34	74		069
7.0	34	74		070
7.1	34	74		071

HSS-E-PM/TiN

d_1 h8 mm	l_2 mm	l_1 mm	10261	...
7.2	34	74		072
7.3	34	74		073
7.4	34	74		074
7.5	34	74		075
7.6	37	79		076
7.7	37	79		077
7.8	37	79		078
7.9	37	79		079
8.0	37	79		080
8.1	37	79		081
8.2	37	79		082
8.3	37	79		083
8.4	37	79		084
8.5	37	79		085
8.8	40	84		088
9.0	40	84		090
9.3	40	84		093
9.5	40	84		095
9.8	43	89		098
10.0	43	89		100
10.2	43	89		102
10.5	43	89		105
11.0	47	95		110
11.5	47	95		115
12.0	51	102		120
12.3	51	102		123
12.5	51	102		125
12.7	51	102		127
13.0	51	102		130
13.5	54	107		135
14.0	54	107		140

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70–80	70–80	50–60	45–55	35–45	25–45	25–45	23–35	18–25	-	-	-	-	12–16	10–13	-	30–50	25–30

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10262 Twist drills for Hardox

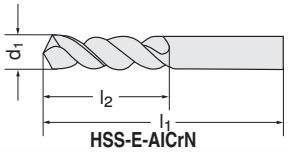
DIN 1897 | 135° | ≈ 30° | 3xD | HSS-E AlCrN | Hardox

Design
- Special geometry with split point DIN 1412C
- Reinforced core
- High-performance coating

Advantage:
- Drilling without centring

Applications
Specially for Hardox processing.

10262



HSS-E-AlCrN

d_1 h8 mm	l_2 mm	l_1 mm	Feed f	10262 ...
2.0	12	38	0.02	020
2.5	14	43	0.02	025
3.0	16	46	0.03	030
3.3	18	49	0.03	033
3.5	20	52	0.03	035
4.0	22	55	0.04	040
4.2	22	55	0.04	042
4.5	24	58	0.04	045
5.0	26	62	0.05	050
5.5	28	66	0.05	055
6.0	28	66	0.06	060
6.5	31	70	0.06	065
6.8	34	74	0.06	068
7.0	34	74	0.07	070
7.5	34	74	0.07	075
8.0	37	79	0.08	080

HSS-E-AlCrN

d_1 h8 mm	l_2 mm	l_1 mm	Feed f	10262 ...
8.5	37	79	0.08	085
9.0	40	84	0.09	090
9.5	40	84	0.09	095
10.0	43	89	0.10	100
10.2	43	89	0.10	102
10.5	43	89	0.10	105
11.0	47	95	0.11	110
11.5	47	95	0.11	115
12.0	51	102	0.12	120
12.5	51	102	0.12	125
13.0	51	102	0.13	130
14.0	54	107	0.14	140
15.0	56	111	0.15	150
16.0	58	115	0.16	160
18.0	62	123	0.18	180

Al<10%Si	Al>10%Si	Cu	Hardox 300	Hardox 400	Hardox 500	Hardox 600	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	GG(G)	Plastic
-	-	-	12	9	7	5	-	-	-	-	-	-	-	-

10263 Twist drills for Hardox and INOX

Norm | 135° | 3xD | HSS-E Co5 | Hardox | VA

Design
- Short cutting edge with split point

Applications
For Hardox and INOX sheet metals as well as tough and hard materials such as rust- and acid-resistant chrome-nickel steels and components subject to wear. Also for hand-guided tools.

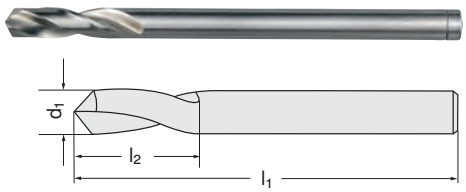
Note:
Very good centring and drilling properties.
Problem solver for Hardox processing.

NEW

10263 319

10263 325

10263 120-230



Set

Set size mm	Number of drills	Increments of mm	10263 ...
1.0 - 10.0	19	0.5	319
1.0–13.0	25	0.5	325

HSS-E (Co5)

d_1 h8 mm	l_2 mm	l_1 mm		10263 ...
2.0	12	49	10 pcs.	120
2.5	14	57	10 pcs.	125
3.0	16	61	10 pcs.	130
3.2	18	65	10 pcs.	132
3.3	18	65	10 pcs.	133
3.5	20	70	10 pcs.	135
4.0	22	75	10 pcs.	140
4.2	22	75	10 pcs.	142
4.5	24	80	10 pcs.	145
5.0	26	86	10 pcs.	150
5.5	28	93	10 pcs.	155
6.0	28	93	10 pcs.	160
6.5	31	101	10 pcs.	165
6.8	34	101	10 pcs.	168

HSS-E (Co5)

d_1 h8 mm	l_2 mm	l_1 mm		10263 ...
7.0	34	109	10 pcs.	170
7.5	34	109	5 pcs.	175
8.0	37	117	5 pcs.	180
8.5	37	117	5 pcs.	185
9.0	40	125	5 pcs.	190
9.5	40	125	5 pcs.	195
10.0	43	133	5 pcs.	200
10.2	43	133	5 pcs.	202
10.5	43	133	5 pcs.	205
11.0	47	142	5 pcs.	210
11.5	47	142	5 pcs.	215
12.0	51	151	5 pcs.	220
12.5	51	151	5 pcs.	225
13.0	51	151	5 pcs.	230

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti/Hardox	GG(G)	Plastic
-	-	-	40	30	22	18	10	8	-	-	-	-	8	15	5/5	-	-

10424 High-quality deep hole drill AGPSLSD

DIN 339 | HSS-E Co8 | 118° | 10xD | AG | ≤ 1200 N/mm² | GGG

NACHI

Design
- Straight shank
- Right cutting
- Special flute geometry
- Twist angle 34°

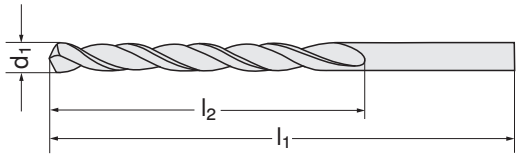
Applications
For drilling deep holes under difficult conditions.
For steel up to 1200 N/mm² and cast iron.
Drilling in increments, without removing chips!

Quality
HSS-E-Co8, ground
AG(AlCr) coating.

NEW

Note:
Note the respective length/ diameter ratio of the bore diameter and the flute length.
Use only high-precision tool chucks!

10424



HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10424	...
1.0	26	48		010
1.1	28	50		011
1.2	30	52		012
1.3	30	52		013
1.4	33	55		014
1.5	33	55		015
1.6	35	58		016
1.7	35	58		017
1.8	38	62		018
1.9	38	62		019
2.0	41	66		020
2.1	41	66		021
2.2	44	70		022
2.3	44	70		023
2.4	47	74		024
2.5	47	74		025
2.6	47	74		026
2.7	51	79		027
2.8	51	79		028
2.9	51	79		029
3.0	51	79		030
3.1	55	84		031
3.2	55	84		032
3.3	55	84		033
3.4	60	91		034
3.5	60	91		035
3.6	60	91		036
3.7	60	91		037
3.8	64	96		038
3.9	64	96		039
4.0	64	96		040
4.1	64	96		041
4.2	64	96		042

HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10424	...
4.3	69	102		043
4.4	69	102		044
4.5	69	102		045
4.6	69	102		046
4.7	69	102		047
4.8	74	108		048
4.9	74	108		049
5.0	74	108		050
5.1	74	108		051
5.2	74	108		052
5.3	74	108		053
5.4	80	116		054
5.5	80	116		055
5.6	80	116		056
5.7	80	116		057
5.8	80	116		058
5.9	80	116		059
6.0	80	116		060
6.1	86	124		061
6.2	86	124		062
6.3	86	124		063
6.4	86	124		064
6.5	86	124		065
6.6	86	124		066
6.7	86	124		067
6.8	93	133		068
6.9	93	133		069
7.0	93	133		070
7.1	93	133		071
7.2	93	133		072
7.3	93	133		073
7.4	93	133		074
7.5	93	133		075

HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10424	...
7.6	100	142		076
7.7	100	142		077
7.8	100	142		078
7.9	100	142		079
8.0	100	142		080
8.1	100	142		081
8.2	100	142		082
8.3	100	142		083
8.4	100	142		084
8.5	100	142		085
8.6	107	151		086
8.7	107	151		087
8.8	107	151		088
8.9	107	151		089
9.0	107	151		090
9.1	107	151		091
9.2	107	151		092
9.3	107	151		093
9.4	107	151		094
9.5	107	151		095
9.6	116	162		096
9.7	116	162		097
9.8	116	162		098
9.9	116	162		099
10.0	116	162		100
10.5	116	162		101
11.0	125	173		102
11.5	125	173		103
12.0	134	184		104
12.5	134	184		105
13.0	134	184		106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	18-28	12-18	12-18	8-13	8-13	-	-	-	-	-	-	-	-	20-30	-

10404 - 10406 Long twist drills

DIN 340

ATORN®

Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- Thinned chisel edge

10406
Quality
HSS ground for normally machinable materials up to 900 N/mm².

N | 118° | HSS | > 900 N/mm²

10406

10404
Quality
HSS-E ground for difficult to machine materials such as VA, titanium and exotics.

VA | 130° | HSS-E | VA

10404

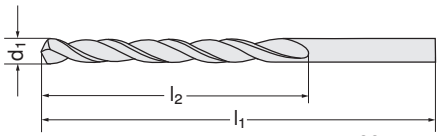
Continued ▶

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10404 - 10406 Long twist drills

DIN 340

Continued ▶



d_1 h8 mm	l_2 mm	l_1 mm		HSS 10406	...	HSS-E 10404	...
0.60	15	35	10 pcs.		606		
0.80	29	46	10 pcs.		608		
1.00	33	56	10 pcs.		610		110
1.10	37	60	10 pcs.		611		111
1.20	41	65	10 pcs.		613		112
1.30	41	65	10 pcs.		615		113
1.40	45	70	10 pcs.		616		114
1.50	45	70	10 pcs.		617		115
1.60	50	76	10 pcs.		619		116
1.70	50	76	10 pcs.		620		117
1.80	53	80	10 pcs.		622		118
1.90	53	80	10 pcs.		623		119
2.00	56	85	10 pcs.		625		120
2.10	56	85	10 pcs.		627		121
2.20	59	90	10 pcs.		628		122
2.30	59	90	10 pcs.		630		123
2.40	62	95	10 pcs.		631		124
2.50	62	95	10 pcs.		632		125
2.60	62	95	10 pcs.		634		126
2.70	66	100	10 pcs.		636		127
2.80	66	100	10 pcs.		637		128
2.90	66	100	10 pcs.		639		129
3.00	66	100	10 pcs.		640		130
3.10	69	106	10 pcs.		642		131
3.20	69	106	10 pcs.		644		132
3.30	69	106	10 pcs.		646		133
3.40	73	112	10 pcs.		648		134
3.50	73	112	10 pcs.		649		135
3.60	73	112	10 pcs.		650		136
3.70	73	112	10 pcs.		651		137
3.80	78	119	10 pcs.		653		138
3.90	78	119	10 pcs.		654		139
4.00	78	119	10 pcs.		655		140
4.10	78	119	10 pcs.		657		141
4.20	78	119	10 pcs.		658		142
4.30	82	126	10 pcs.		660		143
4.40	82	126	10 pcs.		661		144
4.50	82	126	10 pcs.		662		145
4.60	82	126	10 pcs.		663		
4.70	82	126	10 pcs.		664		147
4.80	87	132	10 pcs.		666		148
4.90	87	132	10 pcs.		668		149
5.00	87	132	10 pcs.		669		150
5.10	87	132	10 pcs.		671		151
5.20	87	132	10 pcs.		673		152
5.30	87	132	10 pcs.		675		153
5.40	91	139	10 pcs.		676		154
5.50	91	139	10 pcs.		678		155
5.60	91	139	10 pcs.		679		156
5.70	91	139	10 pcs.		680		157
5.80	91	139	10 pcs.		682		158
5.90	91	139	10 pcs.		683		159
6.00	91	139	10 pcs.		684		160
6.10	97	148	-		685		161
6.20	97	148	-		686		162
6.30	97	148	-		688		163
6.40	97	148	-		689		164
6.50	97	148	-		690		165
6.60	97	148	-		691		166
6.70	97	148	-		692		167
6.80	102	156	-		694		168
6.90	102	156	-		695		
7.00	102	156	-		696		170
7.10	102	156	-		697		
7.20	102	156	-		698		
7.30	102	156	-		699		
7.40	102	156	-		700		
7.50	102	156	-		701		175
7.60	109	165	-		702		
7.70	109	165	-		703		177
7.80	109	165	-		704		178
7.90	109	165	-		705		
8.00	109	165	-		706		180
8.10	109	165	-		707		181
8.20	109	165	-		708		182
8.30	109	165	-		709		
8.40	109	165	-		710		184
8.50	109	165	-		711		185
8.60	115	175	-		712		
8.70	115	175	-		713		
8.80	115	175	-		714		
8.90	115	175	-		715		
9.00	115	175	-		716		190
9.10	115	175	-		717		
9.20	115	175	-		718		
9.30	115	175	-		719		
9.40	115	175	-		720		
9.50	115	175	-		721		
9.60	121	184	-		722		
9.70	121	184	-		723		
9.80	121	184	-		724		198
9.90	121	184	-		725		
10.00	121	184	-		726		200
10.20	121	184	-		728		202
10.25	121	184	-		729		
10.50	121	184	-		732		205
11.00	128	195	-		737		210
11.50	128	195	-		742		215
12.00	134	205	-		747		220
12.50	134	205	-		752		
13.00	134	205	-		757		
13.50	140	214	-		762		
14.00	140	214	-		763		
14.50	144	220	-		764		
15.00	144	220	-		765		
15.50	149	227	-		766		
16.00	149	227	-		767		

Al<10%Si	Al>10%Si	Cu	St<520N	St<7 50N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10406																	
-	-	-	30–40	25–28	15–28	-	-	-	-	-	-	-	-	-	-	30–36	-
10404																	
-	-	-	-	-	-	-	-	-	-	-	-	-	10–12	8–10	6–8	-	-

( ) = Items with prices in brackets partly available from stock.

Deep hole drills | Twist drills

10407 - 10408 Deep hole drills

DIN 340 | 130° | HSS

Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- Thinned chisel edge
- Reinforced core
- Wide chip flutes
- Strongly rounded rear edges

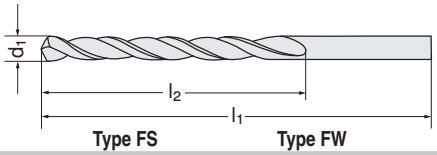
Note:
For drilling deep holes (5-10 x d) without chip removal.

10407
HW
Quality
HSS ground for normally machinable materials up to 900 N/mm².

FS | ≤ 900 N/mm² — 10407

10408
HARTNER
Quality
HSS ground with polished chip flutes for optimal chip removal in soft materials.

FW | ≤ 500 N/mm² | ALU — 10408



d_1 h8 mm	l_2 mm	l_1 mm		Type FS 10407 ...	Type FW 10408 ...
1.0	33	56	10 pcs.	201	
1.1	37	60	10 pcs.	207	
1.2	41	65	10 pcs.	211	
1.3	41	65	10 pcs.	213	
1.4	45	70	10 pcs.	216	
1.5	45	70	10 pcs.	218	
1.6	50	76	10 pcs.	223	
1.7	50	76	10 pcs.	226	
1.8	53	80	10 pcs.	229	
1.9	53	80	10 pcs.	231	
2.0	56	85	10 pcs.	236	111
2.1	56	85	10 pcs.	240	112
2.2	59	90	10 pcs.	243	
2.3	59	90	10 pcs.	246	
2.4	62	95	10 pcs.	250	115
2.5	62	95	10 pcs.	254	116
2.6	62	95	10 pcs.	258	
2.7	66	100	10 pcs.	261	
2.8	66	100	10 pcs.	266	119
2.9	66	100	10 pcs.	270	120
3.0	66	100	10 pcs.	273	121
3.1	69	106	10 pcs.	275	122
3.2	69	106	10 pcs.	278	123
3.3	69	106	10 pcs.	281	124
3.4	73	112	10 pcs.	282	125
3.5	73	112	10 pcs.	284	126
3.6	73	112	10 pcs.	287	
3.7	73	112	10 pcs.	290	
3.8	78	119	10 pcs.	293	129
3.9	78	119	10 pcs.	295	130
4.0	78	119	10 pcs.	299	131
4.2	78	119	10 pcs.	305	133
4.5	82	126	10 pcs.	312	136
4.8	87	132	10 pcs.	319	
5.0	87	132	10 pcs.	324	141
5.1	87	132	10 pcs.		142
5.2	87	132	10 pcs.	330	
5.5	91	139	10 pcs.	337	146
5.8	91	139	10 pcs.	344	
6.0	91	139	10 pcs.	347	151
6.2	97	148	10 pcs.	352	
6.5	97	148	10 pcs.	357	156
6.8	102	156	5 pcs.	363	159
7.0	102	156	5 pcs.	366	161
7.2	102	156	5 pcs.	371	
7.5	102	156	5 pcs.	376	
7.8	109	165	5 pcs.	382	
7.9	109	165	5 pcs.		170
8.0	109	165	5 pcs.	386	171
8.2	109	165	5 pcs.	389	
8.5	109	165	5 pcs.	395	
9.0	115	175	5 pcs.	403	
9.5	115	175	5 pcs.	412	186
9.8	121	184	5 pcs.	417	
10.0	121	184	5 pcs.	420	191
10.5	121	184	5 pcs.	429	
11.0	128	195	-	433	
11.5	128	195	-	438	
12.0	134	205	-	442	
12.5	134	205	-	444	
13.0	134	205	-	447	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10407																	
-	-	-	25–30	22–28	21–25	-	-	-	-	-	-	-	-	-	-	18–22	-
10408																	
40–55	40–45	25–28	25–30	-	-	-	-	-	-	-	-	-	-	-	-	-	-

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10410 Long twist drills

DIN 340 | FN | 130° | HSS TiN | ≤ 1000 N/mm²

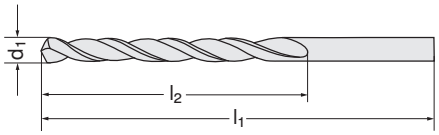
ATORN®

Design
- Straight shank
- Right cutting
- Cone-shaped section finish
- Thinned chisel edge
- Reinforced core
- Wide chip flutes
- Strongly rounded rear edges

Note:
For drilling deep holes under difficult conditions, such as poor chip removal, poor cooling.

Caution:
Exception: VA steels, CrN steels and similar materials.

10410



Quality
HSS/TiN-coated for a long service life in steel up to 1000 N/mm² and cast iron.

HSS/TiN

d_1 h8 mm	l_2 mm	l_1 mm		10410	...
1.0	33	56	10 pcs.		110
1.1	37	60	10 pcs.		111
1.2	41	65	10 pcs.		112
1.3	41	65	10 pcs.		113
1.4	45	70	10 pcs.		114
1.5	45	70	10 pcs.		115
1.6	50	76	10 pcs.		116
1.7	50	76	10 pcs.		117
1.8	53	80	10 pcs.		118
1.9	53	80	10 pcs.		119
2.0	56	85	10 pcs.		120
2.1	56	85	10 pcs.		121
2.2	59	90	10 pcs.		122
2.3	59	90	10 pcs.		123
2.4	62	95	10 pcs.		124
2.5	62	95	10 pcs.		125
2.6	62	95	10 pcs.		126
2.7	66	100	10 pcs.		127
2.8	66	100	10 pcs.		128
2.9	66	100	10 pcs.		129
3.0	66	100	10 pcs.		130
3.1	69	106	10 pcs.		131
3.2	69	106	10 pcs.		132
3.3	69	106	10 pcs.		133

HSS/TiN

d_1 h8 mm	l_2 mm	l_1 mm		10410	...
3.4	73	112	10 pcs.		134
3.5	73	112	10 pcs.		135
3.6	73	112	10 pcs.		136
3.7	73	112	10 pcs.		137
3.8	78	119	10 pcs.		138
3.9	78	119	10 pcs.		139
4.0	78	119	10 pcs.		140
4.1	78	119	10 pcs.		141
4.2	78	119	10 pcs.		142
4.3	82	126	10 pcs.		143
4.4	82	126	10 pcs.		144
4.5	82	126	10 pcs.		145
4.7	82	126	10 pcs.		147
4.8	87	132	10 pcs.		148
4.9	87	132	10 pcs.		149
5.0	87	132	10 pcs.		150
5.1	87	132	10 pcs.		151
5.2	87	132	10 pcs.		152
5.3	87	132	10 pcs.		153
5.4	91	139	10 pcs.		154
5.5	91	139	10 pcs.		155
5.6	91	139	10 pcs.		156
5.7	91	139	10 pcs.		157
5.8	91	139	10 pcs.		158

HSS/TiN

d_1 h8 mm	l_2 mm	l_1 mm		10410	...
5.9	91	139	10 pcs.		159
6.0	91	139	10 pcs.		160
6.1	97	148	-		161
6.2	97	148	-		162
6.3	97	148	-		163
6.4	97	148	-		164
6.5	97	148	-		165
6.6	97	148	-		166
6.7	97	148	-		167
6.8	102	156	-		168
7.0	102	156	-		170
7.5	102	156	-		175
8.0	109	165	-		180
8.5	109	165	-		185
9.0	115	175	-		190
9.5	115	175	-		195
10.0	121	184	-		200
10.2	121	184	-		202
10.5	121	184	-		205
11.0	128	195	-		210
11.5	128	195	-		215
12.0	134	205	-		220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1000N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
45–55	30–45	22–28	32–40	28–32	25–28	18–25	-	-	-	-	-	-	-	-	-	25–38	-

Info The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use
HM grade
Coating

Designation	W±0,1 mm	R±0,05 mm		P M K H 42 coated 18674	...
GTN-2	2,2	0,16	10 pieces		113
GTN-3	3,1	0,20	10 pieces		114

10425 High-quality deep hole drill AGPLSD

HSS-E Co8 | AG | 118° | 15xD | DIN 1869 Reihe 1, 2, 3 | ≤ 1200 N/mm² | GGG

NEW

NACHI

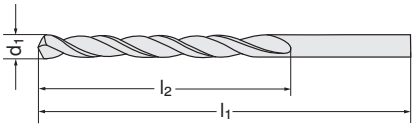
Design
- Straight shank
- Right cutting
- Special flute geometry
- Twist angle 34°
- DIN 1869-1

Applications
For drilling deep holes under difficult conditions.
For steel up to 1200 N/mm² and cast iron.
Drilling in increments, without chip removal up to 15xD!

Quality
HSS-E-Co8, ground
AG(AlCr) coating.

Note:
Note the respective length/diameter ratio of the bore diameter and the flute length. Use only high-precision tool chucks!

10425



HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10425	...
1.0	60	100		010
1.1	60	100		011
1.2	65	105		012
1.3	65	105		013
1.4	70	110		014
1.5	70	110		015
1.6	75	115		016
1.7	75	115		017
1.8	80	120		018
1.9	80	120		019
2.0	85	125		020
2.1	85	125		021
2.2	90	135		022
2.3	90	135		023
2.4	95	140		024
2.5	95	140		025
2.6	95	140		026
2.7	100	150		027
2.8	100	150		028
2.9	100	150		029
3.0	100	150		030
3.1	105	155		031
3.2	105	155		032
3.3	105	155		033

HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10425	...
3.4	115	165		034
3.5	115	165		035
3.6	115	165		036
3.7	115	165		037
3.8	120	175		038
3.9	120	175		039
4.0	120	175		040
4.1	120	175		041
4.2	120	175		042
4.3	125	185		043
4.4	125	185		044
4.5	125	185		045
4.6	125	185		046
4.7	125	185		047
4.8	135	195		048
4.9	135	195		049
5.0	135	195		050
5.1	135	195		051
5.2	135	195		052
5.3	135	195		053
5.4	140	205		054
5.5	140	205		055
5.6	140	205		056
5.7	140	205		057

HSS-E-Co8-AG

d_1 h8 mm	l_2 mm	l_1 mm	10425	...
5.8	140	205		058
5.9	140	205		059
6.0	140	205		060
6.4	150	215		061
6.5	150	215		062
6.8	155	225		063
7.0	155	225		064
7.5	155	225		065
7.9	165	240		066
8.0	165	240		067
8.3	165	240		068
8.4	165	240		069
8.5	165	240		070
9.0	175	250		071
9.5	175	250		072
10.0	185	265		073
10.5	185	265		074
11.0	195	280		075
11.5	195	280		076
12.0	205	295		077
12.5	205	295		078
13.0	205	295		079

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	12-25	8-15	8-15	5-10	5-10	-	-	-	-	-	-	-	-	12-25	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10421 - 10422 Extra-long twist drills

DIN 1869 Reihe 1, 2, 3 | FN | 130° | HSS | HSS TiN | ≤ 1000 N/mm²

HARTNER

Design
Straight shank, right cutting, cone-shaped section finish. Thinned chisel edge.

10421
Design
Flat, wide chip flutes for holes up to 10xD without chip removal, rounded rear edge, above 2.5 mm chamfer-nitrided.
Quality
HSS ground for steel up to 1000 N/mm², cast iron, aluminium alloys, brass and bronze.

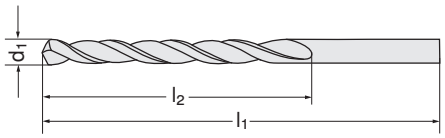
10422
Design
Reinforced core and strongly rounded rear edges under difficult conditions, such as poor chip removal and poor cooling.

Quality
HSS/TiN-coated for a long service life in steel up to 1000 N/mm² and cast iron.

Caution:
Exception: VA steels, CrN steels and similar materials.

10421

10422



		HSS	HSS/TiN		HSS	HSS/TiN		HSS	HSS/TiN
d_1 h8 x l_1 mm	l_2 mm	10421	10422	...	10421	10422	...	10421	10422	...
2.0 x 125	85	101		101	5.5 x 205	140	117				8.0 x 305	210	133		133
2.5 x 140	95	102		102	5.5 x 260	180	118				8.0 x 390	265	134		
3.0 x 150	100	103		103	6.0 x 205	140	120		120		8.5 x 240	165	135		
3.0 x 190	130	104			6.0 x 260	180	121				8.5 x 305	210	136		136
3.5 x 165	115	105			6.0 x 330	225	122				8.5 x 390	265	137		
3.5 x 210	145	106			6.5 x 215	150	123				9.0 x 250	175	138		
4.0 x 175	120	108		108	6.5 x 275	190	124				9.0 x 320	220	139		
4.0 x 220	150	109		109	6.5 x 350	235	125				9.0 x 410	280	140		
4.0 x 280	190	110			7.0 x 225	155	126				9.5 x 250	175	141		
4.5 x 185	125	111			7.0 x 290	200	127		127		10.0 x 265	185	144		
4.5 x 235	160	112			7.0 x 370	250	128				10.0 x 340	235	145		
5.0 x 195	135	114		114	7.5 x 225	155	129				10.0 x 430	295	146		
5.0 x 245	170	115			7.5 x 290	200	130				11.0 x 280	195	147		
5.0 x 315	210	116			8.0 x 240	165	132		132		12.0 x 375	260	148		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10421																	
40–45	-	-	18–22	18–22	14–18	12–16	-	-	-	-	-	-	6–8	-	-	14–22	-
10422																	
-	-	-	22–28	22–28	16–20	10–15	-	-	-	-	-	-	-	-	-	18–25	-

10426 High-quality deep hole drill AGPLSD

DIN 1869 Reihe 1, 2, 3 | HSS-E Co8 | AG | 118° | 20xD | ≤ 1200 N/mm² | GGG

NACHI

Design
- Straight shank
- Right cutting
- Special flute geometry
- Twist angle 34°
- DIN 1869-2

Applications
For drilling deep holes under difficult conditions.
For steel up to 1200 N/mm² and cast iron.
Drilling in increments, without chip removal up to 15xD!

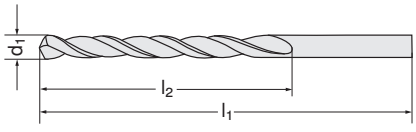
Quality
HSS-E-Co8, ground
AG(AlCr) coating.

Note:
Note the respective length/diameter ratio of the bore diameter and the flute length.

NEW

10426

Use only high-precision tool chucks!



			HSS-E-Co8-AG				HSS-E-Co8-AG			HSS-E-Co8-AG
d_1 h8 mm	l_2 mm	l_1 mm	10426	...	d_1 h8 mm	l_2 mm	l_1 mm	10426	...	d_1 h8 mm	l_2 mm	l_1 mm	10426	...
3.0	130	190		010	6.5	190	275		018	10.5	235	340		026
3.5	145	210		011	7.0	200	290		019	11.0	250	365		027
4.0	150	220		012	7.5	200	290		020	11.5	250	365		028
4.5	160	235		013	8.0	210	305		021	12.0	260	375		029
5.0	170	245		014	8.5	210	305		022	12.5	260	375		030
5.5	180	260		015	9.0	220	320		023	13.0	260	375		031
6.0	180	260		016	9.5	220	320		024					
6.1	190	275		017	10.0	235	340		025					

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	12-25	8-15	8-15	5-10	5-10	-	-	-	-	-	-	-	-	12-25	-

( ) = Items with prices in brackets partly available from stock.

Twist drill

10508 - 10510 Morse taper shank twist drills

DIN 345 | N | 118° | HSS

Design
- Cone-shaped section finish
- Surface treatment, resulting in reduced build-up of material deposits and improved chip removal

10508

ATORN®

Quality
HSS ground for steel up to 900 N/mm2, cast iron, aluminium alloys, brass, bronze.

Note:
Quality drills for the most demanding applications.
Drills for production.

10510
Quality
HSS precision-roll forged for steel up to 800 N/mm², cast iron, aluminium alloys, bronze, brass.

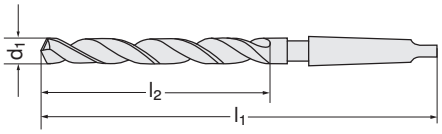
Note:
Cost-effective design.

≤ 900 N/mm²

10508

≤ 800 N/mm²

10510



ATORN®

d_1 h8 mm	l_2 mm	l_1 mm	MT	10508	...	10510	...
5.00	52	133	1		604		
5.50	57	138	1		605		
6.00	57	138	1		606		
6.50	63	144	1		608		
7.00	69	150	1		613		
8.00	75	156	1		617		
8.50	75	156	1		619		
9.00	81	162	1		621		
9.50	81	162	1		622		
10.00	87	168	1		624		211
10.20	87	168	1		626		212
10.50	87	168	1		629		213
10.80	94	175	1		630		
11.00	94	175	1		631		215
11.50	94	175	1		634		217
11.80	94	175	1		636		
12.00	101	182	1		637		219
12.20	101	182	1		639		
12.50	101	182	1		640		221
12.80	101	182	1		641		
13.00	101	182	1		642		223
13.50	108	189	1		645		225
13.80	108	189	1		647		
14.00	108	189	1		648		227
14.25	114	212	2		651		228
14.50	114	212	2		652		229
14.75	114	212	2		654		230
15.00	114	212	2		655		231
15.25	120	218	2		656		232
15.50	120	218	2		657		233
15.75	120	218	2		658		234
16.00	120	218	2		659		235
16.25	125	223	2		661		236
16.50	125	223	2		662		237
16.75	125	223	2		664		238
17.00	125	223	2		665		239
17.25	130	228	2		666		
17.50	130	228	2		667		241
17.75	130	228	2		668		242
18.00	130	228	2		669		243
18.25	135	233	2		670		
18.50	135	233	2		671		245
18.75	135	233	2		672		
19.00	135	233	2		673		247
19.50	140	238	2		675		249
19.75	140	238	2		676		250
20.00	140	238	2		677		251
20.25	145	243	2		679		252
20.50	145	243	2		681		253

ATORN®

d_1 h8 mm	l_2 mm	l_1 mm	MT	10508	...	10510	...
20.75	145	243	2		682		254
21.00	145	243	2		683		255
21.50	150	248	2		685		257
21.75	150	248	2		686		258
22.00	150	248	2		687		259
22.50	155	253	2		689		261
23.00	155	253	2		691		263
23.50	155	276	3		693		265
24.00	160	281	3		695		267
24.50	160	281	3		696		268
24.75	160	281	3		697		
25.00	160	281	3		698		270
25.50	165	286	3		701		271
26.00	165	286	3		703		273
26.50	165	286	3		704		274
27.00	170	291	3		706		276
27.50	170	291	3		707		277
28.00	170	291	3		709		279
28.50	175	296	3		710		280
29.00	175	296	3		711		281
29.50	175	296	3		712		282
30.00	175	296	3		713		283
30.50	180	301	3		714		284
31.00	180	301	3		715		285
31.50	180	301	3				286
32.00	185	334	4		717		287
32.50	185	334	4		718		288
33.00	185	334	4		719		289
33.50	185	334	4		720		290
34.00	190	339	4		721		291
34.50	190	339	4		722		292
35.00	190	339	4		723		293
35.50	190	339	4		724		294
36.00	195	344	4		725		295
36.50	195	344	4		726		296
37.00	195	344	4		727		297
38.00	200	349	4		728		298
38.50	200	349	4		729		299
39.00	200	349	4		730		300
39.50	200	349	4		731		301
40.00	200	349	4		732		302
41.00	205	354	4		733		303
42.00	205	354	4		734		304
43.00	210	359	4		735		305
44.00	210	359	4		736		306
45.00	210	359	4		737		307
46.00	215	364	4		738		308
47.00	215	364	4		739		309
48.00	220	369	4		740		310

Continued ▶

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10508 - 10510 Morse taper shank twist drills

DIN 345 | N | 118° | HSS

Continued ▶

ATORN®

d_1 h8 mm	l_2 mm	l_1 mm	MT	10508	...	10510	...
49.00	220	369	4		741		311
50.00	220	369	4		742		312
51.00	225	412	5		743		
55.00	230	417	5		747		
56.00	230	417	5		748		

ATORN®

d_1 h8 mm	l_2 mm	l_1 mm	MT	10508	...	10510	...
57.00	235	422	5		749		
58.00	235	422	5		750		
59.00	235	422	5		751		
60.00	235	422	5		752		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	45HRC	55HRC	60HRC	67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
55–63	40–50	25–32	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

10511 - 10526 Morse taper shank twist drills

DIN 345

Design
- Cone-shaped section finish
- Thinned chisel edge

Note:
Quality drills for the most demanding applications.

10511
HARTNER

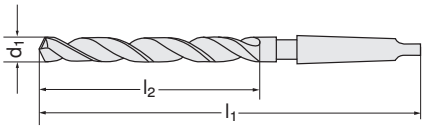
Quality
HSS/TiN for even longer service life in steel up to 900 N/mm², cast iron, aluminium alloys, bronze, brass.

10514
ATORN®

Quality
HSS-E surface-treated for steel up to 1200 N/mm² and cast iron. Reduced build-up of material deposits and improved chip removal. Reinforced core.

10526
ATORN®

Quality
HSS-E with special geometry for VA steels and materials that tend towards cold hardening.



N | 118° | HSS TiN | ≤ 900 N/mm² — 10511

N | 118° | HSS-E | ≤ 1200 N/mm² — 10514

VA | 130° | HSS-E | VA — 10526

HARTNER | ATORN® | ATORN®

d_1 h8 mm	l_2 mm	l_1 mm	MT	10511	...	10514	...	10526	...
10.0	87	168	1					630	
10.2	87	168	1					632	
10.5	87	168	1			213		634	
11.0	94	175	1			215		637	111
11.5	94	175	1			217		639	115
12.0	101	182	1			219		642	120
12.5	101	182	1			221		647	125
13.0	101	182	1					650	130
13.5	108	189	1			225		653	135
13.75	108	189	1					655	
14.0	108	189	1			227		657	140
14.5	114	212	2			229		662	145
15.0	114	212	2			231		664	150
15.5	120	218	2					666	155
16.0	120	218	2			235		668	160
16.5	125	223	2					670	165
17.0	125	223	2			239		671	170
17.5	130	228	2			241		673	175
18.0	130	228	2			243		674	180
18.5	135	233	2					676	185
19.0	135	233	2					677	190
19.5	140	238	2					678	195
20.0	140	238	2			251		679	200

HARTNER | ATORN® | ATORN®

d_1 h8 mm	l_2 mm	l_1 mm	MT	10511	...	10514	...	10526	...
20.5	145	238	2					680	205
21.0	145	243	2			255		681	210
21.5	150	248	2					682	215
22.0	150	248	2			259		683	220
22.5	155	253	2			261		684	225
23.0	155	253	2					685	230
23.5	155	276	3					686	
24.0	160	281	3					687	240
24.5	160	281	3					688	245
25.0	160	281	3					689	250
26.0	165	286	3			273		692	260
26.5	170	291	3						265
27.0	170	291	3					694	270
28.0	170	291	3			279		696	280
28.5	175	296	3						285
29.0	175	296	3					698	290
30.0	175	296	3					700	300
31.0	180	301	3					702	
32.0	185	334	4					704	320
33.0	185	334	4					705	
34.0	190	339	4					706	
35.0	190	339	4					707	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	45HRC	55HRC	60HRC	67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10511																	
60–70	45–55	26–36	28–36	22–28	22–26	-	-	-	-	-	-	-	-	-	-	22–28	18–28
10514																	
-	-	-	28–36	22–28	14–18	14–16	10–14	-	-	-	-	-	10–14	10–12	-	22–30	-
10526																	
-	-	-	35–40	32–35	25–32	20–25	15–20	12–15	-	-	-	-	10–15	10–15	8–10	-	-

( ) = Items with prices in brackets partly available from stock.

10610 Long twist drill (boring bush drill) with Morse taper shank

HARTNER

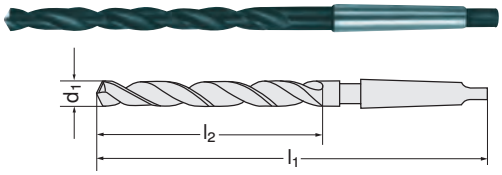
Design
- Cone-shaped section finish
- Surface treatment, resulting in reduced build-up of material deposits and improved chip removal
- Above Ø 14 mm with point thinning
- Extended cutting section compared to DIN 345

Quality
HSS ground for steel up to 900 N/mm², cast iron, graphite.

Note:
For drilling through boring bushings.

DIN 341 | N | 118° | HSS | ≤ 900 N/mm²

10610



d_1 h8 mm	l_2 mm	l_1 mm	MT	HSS 10610	...
10.0	116	197	1		122
11.0	125	206	1		127
11.5	125	206	1		129
13.0	134	215	1		135
13.5	142	223	1		137
14.0	142	223	1		140
15.0	147	245	2		145
15.5	153	251	2		147
16.0	153	251	2		149
17.0	159	257	2		155
17.5	165	263	2		157

d_1 h8 mm	l_2 mm	l_1 mm	MT	HSS 10610	...
18.0	165	263	2		159
19.0	171	269	2		162
20.0	177	275	2		164
21.0	184	282	2		166
22.0	191	289	2		168
24.0	206	327	3		172
25.0	206	327	3		173
28.0	222	343	3		176
30.0	230	351	3		178
34.0	257	406	4		182
35.0	257	406	4		183

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	25-28	20-24	18-22	-	-	-	-	-	-	-	-	-	-	20-24	-

10621 Extra-long twist drills with Morse taper shank

HARTNER

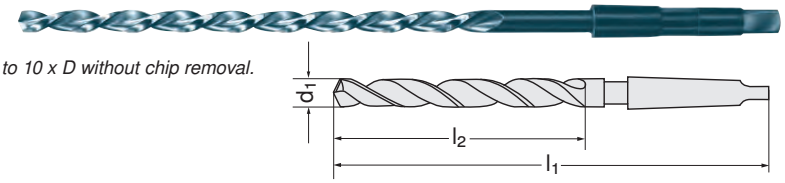
Design
- Reinforced core
- Flat flute profile
- Cone-shaped section finish
- Point thinning
- Up to Ø 16 mm nitrated chamfers and bare chip flutes. Also specially heat treated for increased wear resistance and reduced build-up of material deposits

Quality
HSS ground for steel up to 900 N/mm², cast iron, graphite, aluminium alloys, brass, bronze.

Note:
For drilling up to 10 x D without chip removal.

DIN 1870 Reihe 1, 2 | FN | 130° | HSS | ≤ 900 N/mm²

10621



d_1 h8 x l_1 mm	l_2 mm	MT	HSS 10621	...
8 x 265	165	1		101
9 x 275	175	1		103
10 x 285	185	1		105
10 x 360	235	1		106
11 x 300	195	1		107
12 x 310	205	1		109
12 x 395	260	1		110
13 x 310	205	1		111
13 x 395	260	1		112
14 x 325	220	1		113
14 x 410	275	1		114
15 x 340	220	2		115
15 x 425	275	2		116
16 x 355	230	2		117

d_1 h8 x l_1 mm	l_2 mm	MT	HSS 10621	...
16 x 445	295	2		118
17 x 355	230	2		119
18 x 370	245	2		121
18 x 465	310	2		122
19 x 465	310	2		124
20 x 385	260	2		125
20 x 490	325	2		126
22 x 515	345	2		130
24 x 555	365	3		134
25 x 440	290	3		135
25 x 555	365	3		136
28 x 580	385	3		142
30 x 460	305	3		145

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
35–45	30–36	18–22	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	14–20	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10632 Core drill with Morse taper shank

DIN 343 | Z 3 | N | 120° | HSS | ≤ 900 N/mm²

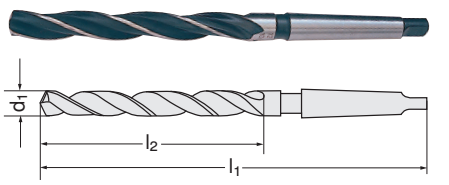
Design
- Strongly rounded rear
- Surface treatment for reduced build-up of material deposits and improved chip removal

Quality
HSS ground for normally machinable materials up to 900 N/mm².

Advantage:
For drilling non-round holes, misaligned holes can be compensated.

Note:
The drilling diameter should be at least 3/4 of the spiral countersink Ø.

10632



d_1 h8 mm	l_2 mm	l_1 mm	MT	HSS 10632	...
7.80	75	156	1		101
8.00	75	156	1		102
8.80	81	162	1		103
9.80	87	168	1		104
10.00	87	168	1		105
10.75	94	175	1		106
11.75	101	182	1		107
12.00	101	182	1		108
12.75	101	182	1		109

d_1 h8 mm	l_2 mm	l_1 mm	MT	HSS 10632	...
13.75	108	189	1		110
14.00	108	189	1		111
14.75	114	212	2		112
15.00	114	212	2		113
15.75	120	218	2		114
16.00	120	218	2		115
16.75	125	223	2		116
17.00	125	223	2		117
17.75	130	228	2		118

d_1 h8 mm	l_2 mm	l_1 mm	MT	HSS 10632	...
18.00	130	228	2		119
18.70	135	233	2		120
19.70	140	238	2		121
20.00	140	238	2		122
20.70	145	243	2		123
21.70	150	248	2		124
22.00	150	248	2		125
25.00	160	281	3		127
30.00	175	296	3		129

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
25–40	10–30	10–30	26–30	25–28	20–25	15–20	10–15	5–10	-	-	-	-	4–10	3–6	-	10–18	-

10640 - 10649 Multiplex HPC

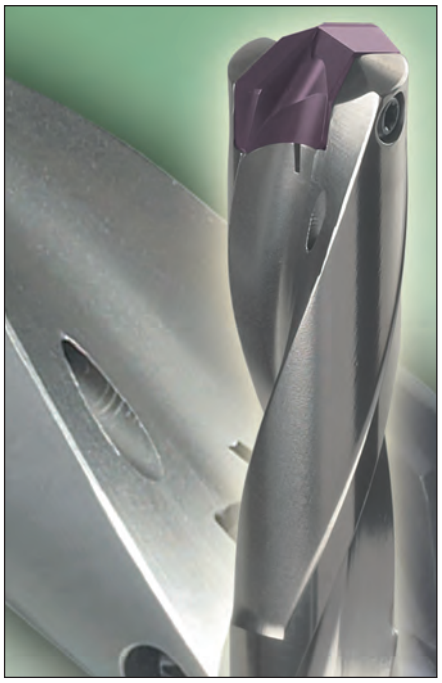
HARTNER

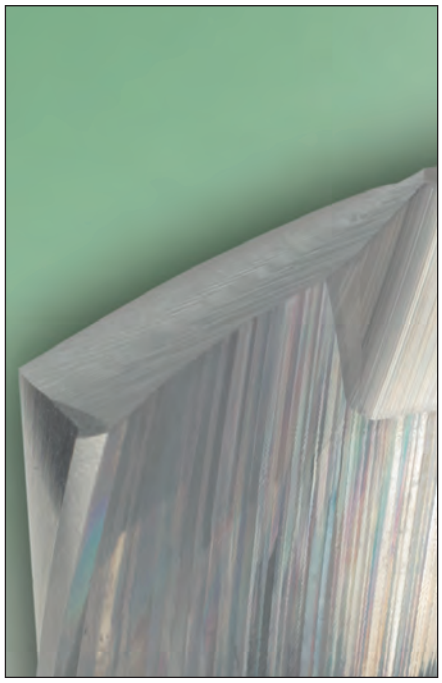
Design
- Long service life due to wear-resistant indexable inserts
- Optimised chip removal
- Highly accurate and stable plate seat
- Perfect lubrication
- Large selection of indexable inserts

Advantage:
- Drilling tool also suitable for stack drilling

Scope of delivery:
Indexable insert holder incl. clamping screw.

Note:
For drilling depths from 5xD we recommend centring or making a pilot hole.
When drilling without centring - reduce feed by approx. 50%.
In the case of through-bores, the feed is to be reduced in the event of breakthrough.





High precision, stable plate seat and stable holder + optimised chip removal and perfect cooling = long service life

Continued ▶

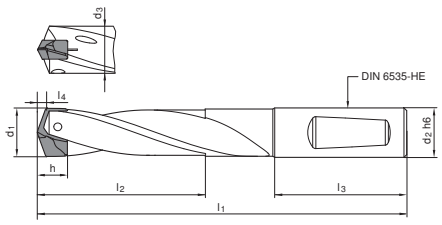
Multiplex holder

10640 - 10649 Multiplex HPC

1,5xD

Continued

Multiplex HPC holder 1.5xD



10640

For drilling range Ø d_1 mm	Carrier size	l_2 mm	l_1 mm	l_3 mm	d_2 (h6) mm	d_3 mm	1.5xD 10640	...
11.00–11.49	110	19.30	84	45	12	10.70		100
11.50–11.99	115	20.10	85	45	12	11.20		101
12.00–12.49	120	21.0	87	45	12	11.70		102
12.50–12.99	125	21.90	89	45	14	12.20		103
13.00–13.49	130	22.60	90	45	14	12.70		104
13.50–13.99	135	23.60	92	45	14	13.20		105
14.00–14.49	140	24.50	93	45	14	13.70		106
14.50–14.99	145	25.30	98	48	16	14.20		107
15.00–15.49	150	26.10	100	48	16	14.70		108
15.50–15.99	155	27.0	101	48	16	15.20		109
16.00–16.49	160	27.80	102	48	16	15.70		110
16.50–16.99	165	28.70	105	48	18	16.20		111
17.00–17.49	170	29.60	106	48	18	16.70		112
17.50–17.99	175	30.40	107	48	18	17.20		113
18.00–18.49	180	31.20	108	48	18	17.70		114
18.50–18.99	185	32.10	113	50	20	18.20		115
19.00–19.49	190	32.90	114	50	20	18.70		116
19.50–19.99	195	33.70	116	50	20	19.20		117
20.00–20.49	200	34.60	117	50	20	19.70		118
20.50–20.99	205	35.50	128	56	25	20.20		119
21.00–21.49	210	36.40	129	56	25	20.70		120
21.50–21.99	215	37.20	130	56	25	21.20		121
22.00–22.49	220	38.00	131	56	25	21.70		122
22.50–22.99	225	38.90	134	56	25	22.20		123
23.00–23.49	230	39.80	135	56	25	22.70		124
23.50–23.99	235	40.60	137	56	25	23.20		125
24.00–24.49	240	41.50	138	56	25	23.70		126
24.50–24.99	245	42.30	140	56	25	24.20		127
25.00–25.49	250	43.20	142	56	25	24.70		128
25.50–25.99	255	44.00	148	60	32	25.20		129
26.00–26.49	260	44.30	151	60	32	25.70		130
26.50–26.99	265	45.10	153	60	32	26.20		131
27.00–27.49	270	46.00	155	60	32	26.70		132
27.50–27.99	275	46.80	156	60	32	27.20		133
28.00–28.49	280	47.70	157	60	32	27.70		134
28.50–28.99	285	48.50	159	60	32	28.20		135
29.00–29.49	290	49.40	161	60	32	28.70		136
29.50–29.99	295	50.20	162	60	32	29.20		137
30.00–30.49	300	50.90	164	60	32	29.70		138
30.50–30.99	305	51.70	166	60	32	30.20		139
31.00–31.49	310	52.60	167	60	32	30.70		140
31.50–31.99	315	53.40	168	60	32	31.20		141
32.00–32.99	320	55.10	172	60	32	31.70		142
33.00–33.99	330	56.80	175	60	32	32.70		143
34.00–34.99	340	58.50	178	60	32	33.70		144
35.00–35.99	350	60.20	181	60	32	34.70		145
36.00–36.99	360	61.80	184	60	32	35.70		146
37.00–37.99	370	63.50	188	60	32	36.70		147
38.00–38.99	380	65.20	191	60	32	37.70		148
39.00–40.00	390	66.90	194	60	32	38.70		149

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= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

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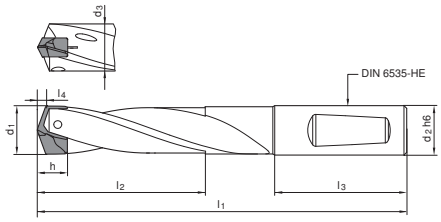
Multiplex HPC holder 3xD



10641

For drilling range Ø d_1 mm	Carrier size	l_2 mm	l_1 mm	l_3 mm	d_2 (h6) mm	d_3 mm	3xD 10641	...
11.00–11.49	110	36.60	101	45	12	10.70		**100**
11.50–11.99	115	38.10	103	45	12	11.20		**101**
12.00–12.49	120	39.70	106	45	12	11.70		**102**
12.50–12.99	125	41.30	108	45	14	12.20		**103**
13.00–13.49	130	42.90	110	45	14	12.70		**104**
13.50–13.99	135	44.60	113	45	14	13.20		**105**
14.00–14.49	140	46.20	115	45	14	13.70		**106**
14.50–14.99	145	47.80	120	48	16	14.20		**107**
15.00–15.49	150	49.30	123	48	16	14.70		**108**
15.50–15.99	155	50.90	125	48	16	15.20		**109**
16.00–16.49	160	52.90	127	48	16	15.70		**110**
16.50–16.99	165	54.10	130	48	18	16.20		**111**
17.00–17.49	170	55.80	132	48	18	16.70		**112**
17.50–17.99	175	57.40	134	48	18	17.20		**113**
18.00–18.49	180	58.90	137	48	18	17.70		**114**
18.50–18.99	185	60.50	141	50	20	18.20		**115**
19.00–19.49	190	62.10	143	50	20	18.70		**116**
19.50–19.99	195	63.70	146	50	20	19.20		**117**
20.00–20.49	200	65.30	148	50	20	19.70		**118**
20.50–20.99	205	67.00	159	56	25	20.20		**119**
21.00–21.49	210	68.60	161	56	25	20.70		**120**
21.50–21.99	215	70.10	163	56	25	21.20		**121**
22.00–22.49	220	71.70	165	56	25	21.70		**122**
22.50–22.99	225	73.30	168	56	25	22.20		**123**
23.00–23.49	230	74.90	170	56	25	22.70		**124**
23.50–23.99	235	76.50	173	56	25	23.20		**125**
24.00–24.49	240	78.10	175	56	25	23.70		**126**
24.50–24.99	245	79.70	177	56	25	24.20		**127**
25.00–25.49	250	81.30	180	56	25	24.70		**128**
25.50–25.99	255	82.90	187	60	32	25.20		**129**
26.00–26.49	260	84.00	191	60	32	25.70		**130**
26.50–26.99	265	86.10	193	60	32	26.20		**131**
27.00–27.49	270	87.20	196	60	32	26.70		**132**
27.50–27.99	275	88.90	198	60	32	27.20		**133**
28.00–28.49	280	90.50	200	60	32	27.70		**134**
28.50–28.99	285	92.50	202	60	32	28.20		**135**
29.00–29.49	290	94.60	205	60	32	28.70		**136**
29.50–29.99	295	95.10	207	60	32	29.20		**137**
30.00–30.49	300	96.70	210	60	32	29.70		**138**
30.50–30.99	305	98.30	212	60	32	30.20		**139**
31.00–31.49	310	99.80	214	60	32	30.70		**140**
31.50–31.99	315	101.40	216	60	32	31.20		**141**
32.00–32.99	320	104.60	221	60	32	31.70		**142**
33.00–33.99	330	107.80	226	60	32	32.70		**143**
34.00–34.99	340	111.00	230	60	32	33.70		**144**
35.00–35.99	350	114.20	235	60	32	34.70		**145**
36.00–36.99	360	117.30	240	60	32	35.70		**146**
37.00–37.99	370	120.50	245	60	32	36.70		**147**
38.00–38.99	380	123.70	249	60	32	37.70		**148**
39.00–40.00	390	126.90	254	60	32	38.70		**149**

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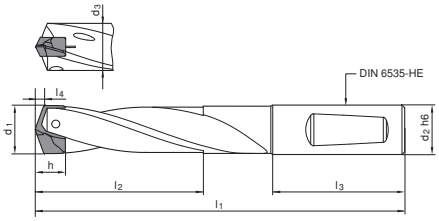
Multiplex holder

10640 - 10649 Multiplex HPC

5xD

Continued

Multiplex HPC holder 5xD



10642

For drilling range Ø d_1 mm	Carrier size	l_2 mm	l_1 mm	l_3 mm	d_2 (h6) mm	d_3 mm	5xD 10642	...
11.00–11.49	110	59.60	124	45	12	10.70		100
11.50–11.99	115	62.10	127	45	12	11.20		101
12.00–12.49	120	64.70	131	45	12	11.70		102
12.50–12.99	125	67.30	134	45	14	12.20		103
13.00–13.49	130	69.90	137	45	14	12.70		104
13.50–13.99	135	72.60	141	45	14	13.20		105
14.00–14.49	140	75.20	144	45	14	13.70		106
14.50–14.99	145	77.80	150	48	16	14.20		107
15.00–15.49	150	80.30	154	48	16	14.70		108
15.50–15.99	155	82.90	157	48	16	15.20		109
16.00–16.49	160	85.90	160	48	16	15.70		110
16.50–16.99	165	88.10	164	48	18	16.20		111
17.00–17.49	170	90.80	167	48	18	16.70		112
17.50–17.99	175	93.40	170	48	18	17.20		113
18.00–18.49	180	95.90	174	48	18	17.70		114
18.50–18.99	185	98.50	179	50	20	18.20		115
19.00–19.49	190	101.10	182	50	20	18.70		116
19.50–19.99	195	103.70	186	50	20	19.20		117
20.00–20.49	200	106.30	189	50	20	19.70		118
20.50–20.99	205	109.00	201	56	25	20.20		119
21.00–21.49	210	111.60	204	56	25	20.70		120
21.50–21.99	215	114.10	207	56	25	21.20		121
22.00–22.49	220	116.70	210	56	25	21.70		122
22.50–22.99	225	119.30	214	56	25	22.20		123
23.00–23.49	230	121.90	217	56	25	22.70		124
23.50–23.99	235	124.50	221	56	25	23.20		125
24.00–24.49	240	127.10	224	56	25	23.70		126
24.50–24.99	245	129.70	227	56	25	24.20		127
25.00–25.49	250	132.30	231	56	25	24.70		128
25.50–25.99	255	134.90	239	60	32	25.20		129
26.00–26.49	260	137.00	244	60	32	25.70		130
26.50–26.99	265	140.00	247	60	32	26.20		131
27.00–27.49	270	142.20	251	60	32	26.70		132
27.50–27.99	275	144.80	254	60	32	27.20		133
28.00–28.49	280	147.40	257	60	32	27.70		134
28.50–28.99	285	150.40	260	60	32	28.20		135
29.00–29.49	290	153.50	264	60	32	28.70		136
29.50–29.99	295	155.10	267	60	32	29.20		137
30.00–30.49	300	157.60	271	60	32	29.70		138
30.50–30.99	305	160.20	274	60	32	30.20		139
31.00–31.49	310	162.80	277	60	32	30.70		140
31.50–31.99	315	165.40	280	60	32	31.20		141
32.00–32.99	320	170.60	287	60	32	31.70		142
33.00–33.99	330	175.80	294	60	32	32.70		143
34.00–34.99	340	181.00	300	60	32	33.70		144
35.00–35.99	350	186.20	307	60	32	34.70		145
36.00–36.99	360	191.30	314	60	32	35.70		146
37.00–37.99	370	196.50	321	60	32	36.70		147
38.00–38.99	380	201.70	327	60	32	37.70		148
39.00–40.00	390	206.90	334	60	32	38.70		149

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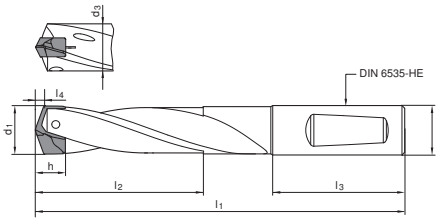
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Continued

Multiplex HPC holder 7xD



10643

For drilling range Ø d_1 mm	Carrier size	l_2 mm	l_1 mm	l_3 mm	d_2 (h6) mm	d_3 mm	7xD 10643	...
11.00–11.49	110	82.60	147	45	12	10.70		**100**
11.50–11.99	115	86.10	151	45	12	11.20		**101**
12.00–12.49	120	89.70	156	45	12	11.70		**102**
12.50–12.99	125	93.30	160	45	14	12.20		**103**
13.00–13.49	130	96.90	164	45	14	12.70		**104**
13.50–13.99	135	100.60	169	45	14	13.20		**105**
14.00–14.49	140	104.20	173	45	14	13.70		**106**
14.50–14.99	145	107.80	180	48	16	14.20		**107**
15.00–15.49	150	111.30	185	48	16	14.70		**108**
15.50–15.99	155	114.90	189	48	16	15.20		**109**
16.00–16.49	160	118.90	193	48	16	15.70		**110**
16.50–16.99	165	122.10	198	48	18	16.20		**111**
17.00–17.49	170	125.80	202	48	18	16.70		**112**
17.50–17.99	175	129.40	206	48	18	17.20		**113**
18.00–18.49	180	132.90	211	48	18	17.70		**114**
18.50–18.99	185	136.50	217	50	20	18.20		**115**
19.00–19.49	190	140.10	221	50	20	18.70		**116**
19.50–19.99	195	143.70	226	50	20	19.20		**117**
20.00–20.49	200	147.30	230	50	20	19.70		**118**
20.50–20.99	205	151.60	243	56	25	20.20		**119**
21.00–21.49	210	154.60	247	56	25	20.70		**120**
21.50–21.99	215	158.10	251	56	25	21.20		**121**
22.00–22.49	220	161.70	225	56	25	21.70		**122**
22.50–22.99	225	165.30	260	56	25	22.20		**123**
23.00–23.49	230	168.90	264	56	25	22.70		**124**
23.50–23.99	235	172.50	269	56	25	23.20		**125**
24.00–24.49	240	176.10	273	56	25	23.70		**126**
24.50–24.99	245	179.70	277	56	25	24.20		**127**
25.00–25.49	250	183.30	282	56	25	24.70		**128**
25.50–25.99	255	186.90	291	60	32	25.20		**129**
26.00–26.49	260	190.00	297	60	32	25.70		**130**
26.50–26.99	265	194.00	301	60	32	26.20		**131**
27.00–27.49	270	197.20	306	60	32	26.70		**132**
27.50–27.99	275	200.80	310	60	32	27.20		**133**
28.00–28.49	280	204.40	314	60	32	27.70		**134**
28.50–28.99	285	208.40	318	60	32	28.20		**135**
29.00–29.49	290	212.50	323	60	32	28.70		**136**
29.50–29.99	295	215.10	327	60	32	29.20		**137**
30.00–30.49	300	218.60	332	60	32	29.70		**138**
30.50–30.99	305	222.20	336	60	32	30.20		**139**
31.00–31.49	310	225.80	340	60	32	30.70		**140**
31.50–31.99	315	229.40	344	60	32	31.20		**141**

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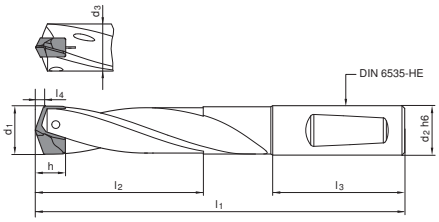
Multiplex holder

10640 - 10649 Multiplex HPC

10xD

Continued

Multiplex HPC holder 10xD



10644 100-141

For drilling range Ø d_1 mm	Carrier size	l_2 mm	l_1 mm	l_3 mm	d_2 (h6) mm	d_3 mm	10xD 10644	...
11.00–11.49	110	117.10	182	45	12	10.70		**100**
11.50–11.99	115	122.10	187	45	12	11.20		**101**
12.00–12.49	120	127.20	194	45	12	11.70		**102**
12.50–12.99	125	132.30	199	45	14	12.20		**103**
13.00–13.49	130	137.50	205	45	14	12.70		**104**
13.50–13.99	135	142.50	211	45	14	13.20		**105**
14.00–14.49	140	147.70	217	45	14	13.70		**106**
14.50–14.99	145	152.80	225	48	16	14.20		**107**
15.00–15.49	150	157.80	232	48	16	14.70		**108**
15.50–15.99	155	162.90	237	48	16	15.20		**109**
16.00–16.49	160	168.00	243	48	16	15.70		**110**
16.50–16.99	165	173.10	249	48	18	16.20		**111**
17.00–17.49	170	178.30	255	48	18	16.70		**112**
17.50–17.99	175	183.50	260	48	18	17.20		**113**
18.00–18.49	180	188.40	267	48	18	17.70		**114**
18.50–18.99	185	193.50	274	50	20	18.20		**115**
19.00–19.49	190	198.70	280	50	20	18.70		**116**
19.50–19.99	195	203.70	286	50	20	19.20		**117**
20.00–20.49	200	208.90	292	50	20	19.70		**118**
20.50–20.99	205	214.00	306	56	25	20.20		**119**
21.00–21.49	210	219.10	312	56	25	20.70		**120**
21.50–21.99	215	224.20	317	56	25	21.20		**121**
22.00–22.49	220	229.30	323	56	25	21.70		**122**
22.50–22.99	225	234.40	329	56	25	22.20		**123**
23.00–23.49	230	239.50	335	56	25	22.70		**124**
23.50–23.99	235	244.60	341	56	25	23.20		**125**
24.00–24.49	240	249.70	347	56	25	23.70		**126**
24.50–24.99	245	254.80	352	56	25	24.20		**127**
25.00–25.49	250	259.90	359	56	25	24.70		**128**
25.50–25.99	255	265.00	369	60	32	25.20		**129**
26.00–26.49	260	270.00	377	60	32	25.70		**130**
26.50–26.99	265	275.00	382	60	32	26.20		**131**
27.00–27.49	270	280.00	388	60	32	26.70		**132**
27.50–27.99	275	285.20	394	60	32	27.20		**133**
28.00–28.49	280	290.30	400	60	32	27.70		**134**
28.50–28.99	285	295.40	405	60	32	28.20		**135**
29.00–29.49	290	300.50	412	60	32	28.70		**136**
29.50–29.99	295	305.60	418	60	32	29.20		**137**
30.00–30.49	300	310.60	424	60	32	29.70		**138**
30.50–30.99	305	315.70	429	60	32	30.20		**139**
31.00–31.49	310	320.80	435	60	32	30.70		**140**
31.50–31.99	315	325.90	441	60	32	31.20		**141**

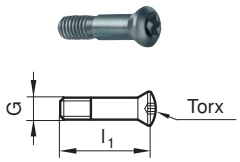
Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Continued

Clamping screws

10644 200-213



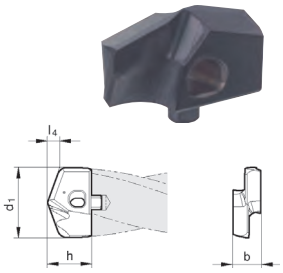
For carrier size	G	l_1 mm	TORX® size	10644	...
110/115	M 2.2	9.50	T 7		**200**
120/125	M 2.2	10.50	T 7		**201**
130/135	M 2.5	11.40	T 8		**202**
140/145	M 3.0	12.10	T 9		**203**
150/155	M 3.0	13.10	T 9		**204**
160–175	M 3.5	14.25	T 10		**205**
180–195	M 4.0	16.00	T 15		**206**

For carrier size	G	l_1 mm	TORX® size	10644	...
200–215	M 4.5	18.00	T 15		**207**
220–235	M 5.0	19.75	T 20		**208**
240–255	M 5.0	21.75	T 20		**209**
260–295	M 5.0	23.40	T 20		**210**
300–315	M 6.0	27.00	T 25		**211**
320–350	M 6.0	28.50	T 25		**212**
360–390	M 6.0	32.50	T 25		**213**

Multiplex HPC pilot plates

10645

Scope of delivery:
- Includes 1 clamping screw



Solid carbide/AlTiN

Carrier size	d_1 m7 mm	l_4 mm	b mm	h mm	10645	...
110	11.00	1.80	4.50	7.20		**100**
110	11.20	1.80	4.50	7.20		**101**
110	11.50	1.90	4.50	7.20		**102**
110	11.80	1.90	4.50	7.20		**103**
120	12.00	1.90	5.00	7.40		**104**
120	12.20	2.00	5.00	7.40		**105**
120	12.50	2.00	5.00	7.40		**106**
130	13.00	2.10	5.50	8.20		**107**
130	13.50	2.20	5.50	8.20		**108**
130	13.80	2.20	5.50	8.20		**109**
140	14.00	2.30	6.00	9.40		**110**
140	14.50	2.30	6.00	9.40		**111**
140	14.80	2.40	6.00	9.40		**112**
150	15.00	2.40	6.00	9.40		**113**
150	15.50	2.50	6.00	9.40		**114**
150	15.80	2.50	6.00	9.40		**115**
160	16.00	2.60	7.00	10.60		**116**
160	16.50	2.70	7.00	10.60		**117**
170	17.00	2.70	7.00	10.60		**118**
170	17.50	2.80	7.00	10.60		**119**
180	18.00	2.90	8.00	12.10		**120**
180	18.50	3.00	8.00	12.10		**121**
190	19.00	3.00	8.00	12.10		**122**
190	19.60	3.10	8.00	12.10		**123**
200	20.00	3.20	9.00	13.30		**124**

Solid carbide/AlTiN

Carrier size	d_1 m7 mm	l_4 mm	b mm	h mm	10645	...
200	20.50	3.30	9.00	13.30		**125**
210	21.00	3.40	9.00	13.30		**126**
210	21.50	3.40	9.00	13.30		**127**
220	22.00	3.50	10.00	14.80		**128**
220	22.50	3.60	10.00	14.80		**129**
230	23.00	3.70	10.00	14.80		**130**
230	23.50	3.80	10.00	14.80		**131**
240	24.00	3.80	11.00	15.30		**132**
240	24.50	3.90	11.00	15.30		**133**
250	25.00	4.00	11.00	15.30		**134**
260	26.00	4.10	12.00	19.40		**135**
270	27.00	4.30	12.00	19.40		**136**
280	28.00	4.40	13.00	20.10		**137**
290	29.00	4.60	13.00	20.10		**138**
300	30.00	4.70	14.00	21.70		**139**
310	31.00	4.90	14.00	21.70		**140**
320	32.00	5.00	15.00	22.40		**141**
330	33.00	5.20	15.00	22.40		**142**
340	34.00	5.40	15.00	22.40		**143**
350	35.00	5.50	15.00	22.40		**144**
360	36.00	5.70	16.00	23.20		**145**
370	37.00	5.80	16.00	23.20		**146**
380	38.00	6.00	16.00	23.20		**147**
390	39.00	6.20	16.00	23.20		**148**
390	40.00	6.20	16.00	23.20		**149**

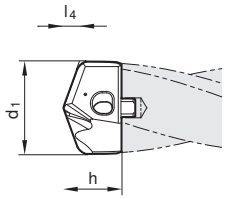
Continued

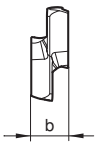
Multiplex holders | Twist drills

10640 - 10649 Multiplex HPC

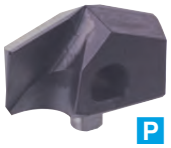
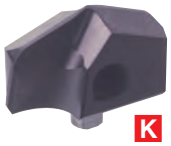
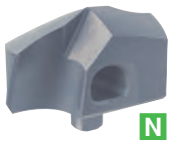
Continued

Multiplex HPC indexable inserts





Scope of delivery:
- Includes 1 clamping screw

	10646	10647	10648	10649
				
Use	P	K	N	M
Carbide type	Solid carbide/nanofire	Solid carbide/fire	Solid carbide/blank	Solid carbide/AlTiN nano

Carrier size	d_1 m7 mm	l_4 mm	b mm	h mm	10646	...	10647	...	10648	...	10649	...
110	11.00	2.10	4.50	7.50		100		100		100		100
110	11.20	2.10	4.50	7.50		101		101		101		101
115	11.50	2.10	4.50	7.50		102		102		102		102
115	11.80	2.20	4.50	7.50		103		103		103		103
120	12.00	2.20	5.00	7.70		104		104		104		104
120	12.20	2.30	5.00	7.70		105		105		105		105
125	12.50	2.30	5.00	7.70		106		106		106		106
130	13.00	2.40	5.50	8.50		107		107		107		107
135	13.50	2.50	5.50	8.50		108		108		108		108
135	13.80	2.60	5.50	8.50		109		109		109		109
140	14.00	2.60	6.00	9.60		110		110		110		110
145	14.50	2.70	6.00	9.60		111		111		111		111
145	14.80	2.70	6.00	9.60		112		112		112		112
150	15.00	2.80	6.00	9.80		113		113		113		113
155	15.50	2.90	6.00	9.80		114		114		114		114
155	15.80	2.90	6.00	9.80		115		115		115		115
160	16.00	3.00	7.00	11.00		116		116		116		116
165	16.50	3.10	7.00	11.00		117		117		117		117
170	17.00	3.10	7.00	11.00		118		118		118		118
175	17.50	3.20	7.00	11.00		119		119		119		119
180	18.00	3.30	8.00	12.60		120		120		120		120
185	18.50	3.40	8.00	12.60		121		121		121		121
190	19.00	3.50	8.00	12.60		122		122		122		122
195	19.60	3.60	8.00	12.60		123		123		123		123
200	20.00	3.70	9.00	13.90		124		124		124		124
205	20.50	3.80	9.00	13.90		125		125		125		125
210	21.00	3.90	9.00	13.90		126		126		126		126
215	21.50	4.00	9.00	13.90		127		127		127		127
220	22.00	4.10	10.00	15.30		128		128		128		128
225	22.50	4.10	10.00	15.30		129		129		129		129
230	23.00	4.20	10.00	15.30		130		130		130		130
235	23.50	4.30	10.00	15.30		131		131		131		131
240	24.00	4.40	11.00	15.80		132		132		132		132
245	24.50	4.50	11.00	15.80		133		133		133		133
250	25.00	4.60	11.00	15.80		134		134		134		134
260	26.00	4.80	12.00	20.00		135		135		135		135
270	27.00	5.00	12.00	20.00		136		136		136		136
280	28.00	5.10	13.00	20.70		137		137		137		137
290	29.00	5.30	13.00	20.70		138		138		138		138
300	30.00	5.50	14.00	22.30		139		139		139		139
310	31.00	5.70	14.00	22.30		140		140		140		140
320	32.00	5.90	15.00	23.10		141		141		141		141
330	33.00	6.10	15.00	23.10		142		142		142		142
340	34.00	6.20	15.00	23.10		143		143		143		143
350	35.00	6.40	15.00	23.10		144		144		144		144
360	36.00	6.60	16.00	23.90		145		145		145		145
370	37.00	6.80	16.00	23.90		146		146		146		146
380	38.00	7.00	16.00	23.90		147		147		147		147
390	39.00	7.10	16.00	23.90		148		148		148		148
390	40.00	7.30	16.00	23.90		149		149		149		149

Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10640 - 10649 Multiplex HPC

Continued

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10646																	
-	-	-	130	120	110	90	70	55	-	-	-	-	-	-	-	-	-
10647																	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	-
10648																	
200	150	70-180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10649																	
-	-	-	-	-	-	-	-	-	25	25	-	-	55	35	-	-	-

Info Are you familiar with the HARTNER multiplex drilling system?

HARTNER

The tool system with internally cooled holders in different lengths as well as cutting plates that can be replaced, meaning
- No re-sharpening
- Always original grinding
- Length always remains constant

Each holder drills with plates in different diameters and cutting materials, such as coated HSS-E PM and solid carbide, depending on what is being processed. Drilling range from Ø 9.7 to 65 mm – often up to 7 x d.
This tool is not suitable for drilling out pre-cast or pre-drilled holes.

What you have previously drilled conventionally, you can now drill with the MULTIPLEX DRILLING SYSTEM
- Quicker
- More precise
- Better
- Cheaper

The MULTIPLEX DRILLING SYSTEM has many benefits:
- No resharpening costs
- The coating benefit is fully maintained
- High cutting performance and optimum service life due to internal cooling
- Constant tool length
- Presetting times and adjustments for NC machines are not required
- Reduction in storage costs

Further development as a special tool for the operations
- Drilling
- Countersinking
- Levelling
- Chamfering
- Extracting
- Countersinking

The MULTIPLEX DRILLING SYSTEM drills down your spiralling costs!

10649–10674 Multiplex indexable insert twist drills

Design
With internal coolant supply.
With straight shank, right cutting.
Up to drilling Ø 35 mm hardened and nickel-plated.
Also nickel-plated. Without cutting plate.

Tip angle:
- Up to Ø 25.4 = 135°
- Over Ø 25.4 = 132°

Point thinning:
Special design with short chisel edge.

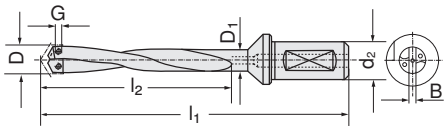
Applications
For drilling steel and steel casting alloyed and unalloyed up **to 1100 N/mm²** strength, grey cast iron, malleable iron, spheroidal graphite iron, sintered iron, nickel silver, bronze, brass.

10649 Twist drill with straight shank 3xD

HARTNER

10649

For drilling range Ø D mm	l_2 mm	l_1 mm	D_1 mm	d_2 mm	B mm	TORX® screws G	10649	...
9.70–11.70	50	107	9.5	20	2.5	M 2.0 x 4		201
11.71–13.40	53	109	11.5	20	2.5	M 2.0 x 4		202
13.41–16,40	60	116	13.0	20	3.5	M 2.5 x 5		203
16.41–18,90	65	118	16.0	20	3.5	M 2.5 x 7		204
18.91–22,40	73	124	18.5	20	4.0	M 3.0 x 6		205
22.41–25,40	78	127	22.0	20	4.0	M 3.0 x 8		206
25.41–29.00	105	178	24.0	32	5.0	M 3.5 x 10		207
29.01–35.00	108	178	28.0	32	5.0	M 3.5 x 10		208
35.01–45,00	152	223	34.0	32	7.0	M 4.0 x 15		209
45.01–55.00	152	233	44.0	40	7.0	M 4.0 x 15		210
55.01–65.00	152	233	54.0	40	7.0	M 4.0 x 15		211



Continued

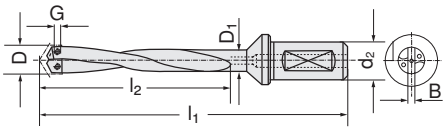
Twist drills | Multiplex drilling system

10650 Twist drill with straight shank 5xD

HARTNER

10650

For drilling range Ø D mm	l_2 mm	l_1 mm	D_1 mm	d_2 mm	B mm	TORX® screws G	10650	...
9.70–11.70	83	140	9.5	20	2.5	M 2.0 x 4		201
11.71–13.40	94	150	11.5	20	2.5	M 2.0 x 4		202
13.41–16,40	104	160	13.0	20	3.5	M 2.5 x 5		203
16.41–18,90	117	170	16.0	20	3.5	M 2.5 x 7		204
18.91–22,40	129	180	18.5	20	4.0	M 3.0 x 6		205
22.41–25,40	131	180	22.0	20	4.0	M 3.0 x 8		206
25.41–29,00	166	240	24.0	32	5.0	M 3.5 x 10		207
29.01–35.00	170	240	28.0	32	5.0	M 3.5 x 10		208
35.01–45,00	210	280	34.0	32	7.0	M 4.0 x 15		209
45.01–55.00	210	290	44.0	40	7.0	M 4.0 x 15		210
55.01–65.00	210	290	54.0	40	7.0	M 4.0 x 15		211

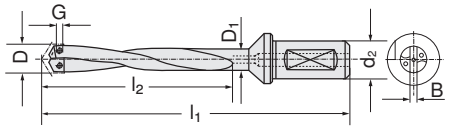


10651 Twist drill with straight shank 7xD

HARTNER

10651

For drilling range Ø D mm	l_2 mm	l_1 mm	D_1 mm	d_2 mm	B mm	TORX® screws G	10651	...
9.70–11.70	123	180	9.5	20	2.5	M 2.0 x 4		201
11.71–13.40	134	190	11.5	20	2.5	M 2.0 x 4		202
13.41–16,40	155	210	13.0	20	3.5	M 2.5 x 5		203
16.41–18,90	168	220	16.0	20	3.5	M 2.5 x 7		204
18.91–22,40	199	250	18.5	20	4.0	M 3.0 x 6		205
22.41–25.40	201	250	22.0	20	4.0	M 3.0 x 8		206
25.41–29,00	246	320	24.0	32	5.0	M 3.5 x 10		207
29.01–35,00	250	320	28.0	32	5.0	M 3.5 x 10		208
35.01–45,00	310	380	34.0	32	7.0	M 4.0 x 15		209
45.01–55.00	310	390	44.0	40	7.0	M 4.0 x 15		210
55.01–65.00	310	390	54.0	40	7.0	M 4.0 x 15		211



10654 - 10657 Indexable inserts for Multiplex system

HARTNER

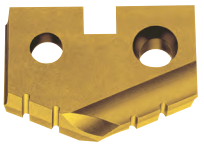
Design
- With surface cut
- Right cutting

10654
Quality
HSS-E-PM/TiN for steel up to 1200 N/mm², cast iron, aluminium. With chip divider groove for short chips.

10655
Quality
HSS-E-PM/fire coating for increased service life in steel up to 1200 N/mm², cast iron, aluminium, brass, bronze. With chip divider groove for short chips.

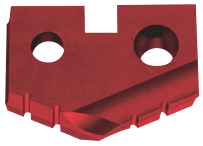
10657
Quality
Solid carbide/fire coating for another significant increase in service life and performance also in steel up to 48 HRC and chilled cast iron.
With chamfer without chip divider groove.

HSS-E-PM TiN | 1200 N/mm²



10654

HSS-E-PM FIRE | 1200 N/mm²



10655

H22 FIRE | 48 HRC

10657

Ø mm	B mm	HSS-E-PM/TiN 10654	...	HSS-E-PM/Fire 10655	...	H 22/Fire 10657	...
10.00	2.5		602		602		602
10.20	2.5		603				603
10.50	2.5				604		604
11.00	2.5		607		607		607
12.00	2.5		615		615		615
12.50	2.5		621		621		621
12.75	2.5		624				624
13.00	2.5		625		625		625
13.50	3.5		628		628		628

Ø mm	B mm	HSS-E-PM/TiN 10654	...	HSS-E-PM/Fire 10655	...	H 22/Fire 10657	...
13.75	3.5		629				629
14.00	3.5		630		630		630
14.25	3.5		631		631		
14.50	3.5		633		633		633
14.75	3.5		634				634
15.00	3.5		635		635		635
15.25	3.5		636				
15.50	3.5		637		637		637
15.75	3.5		638		638		

Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10654 - 10657 Indexable inserts for Multiplex system

Continued

Ø mm	B mm	HSS-E-PM/TiN 10654	...	HSS-E-PM/Fire 10655	...	H 22/Fire 10657	...
16.00	3.5		639		639		
16.25	3.5						640
16.50	3.5		641		641		641
17.00	3.5		643		643		643
17.50	3.5		645		645		645
17.75	3.5		646				646
18.00	3.5		647		647		647
18.25	3.5		648		648		648
18.50	3.5		649		649		649
18.75	3.5		650		650		
19.00	4.0		651		651		651
19.50	4.0		654		654		654
19.75	4.0		655		655		
20.00	4.0		656		656		656
20.25	4.0		657				
20.50	4.0		658		658		658
21.00	4.0		661		661		661
21.25	4.0		662				

Ø mm	B mm	HSS-E-PM/TiN 10654	...	HSS-E-PM/Fire 10655	...	H 22/Fire 10657	...
21.50	4.0		663		663		663
21.75	4.0		664		664		
22.00	4.0		665		665		665
22.50	4.0		668		668		
23.00	4.0		670		670		670
23.50	4.0		672		672		
24.00	4.0		675		675		
24.25	4.0						676
24.50	4.0		677		677		677
25.00	4.0		680		680		680
26.00	5.0						685
27.00	5.0						690
28.00	5.0						695
29.00	5.0						700
30.00	5.0						705
33.00	5.0						720
34.00	5.0						725
35.00	5.0						730

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10654	80–85	65–70	40–45	35–40	30–35	25–30	22–25	20–22	-	-	-	-	-	15–20	-	-	28–35	-
10655	80–85	65–70	40–50	42–48	40–45	35–40	25–28	18–25	-	-	-	-	-	17–23	-	-	33–40	-
10657	140–160	130–150	70–80	90-100	80–85	75–80	70–75	55–65	40–45	-	-	-	-	30–45	-	-	70–90	-

10672 Indexable inserts for Multiplex system

HARTNER

Design
- With surface cut
- Right cutting

Quality
HSS-E-PM/TiAlN for materials up to 1200 N/mm².

10672 600-613

10672 614-641

Ø mm	B mm	HSS-E-PM/TiAlN 10672	...
25	5		600
25.5	5		601
26	5		602
26.5	5		603
27	5		604
28	5		605
29	5		606
29.5	5		607
30	5		608
31	5		609
32	5		610

Ø mm	B mm	HSS-E-PM/TiAlN 10672	...
33	5		611
34	5		612
35	5		613
36	7		614
37	7		615
38	7		616
39	7		617
40	7		618
41	7		619
42	7		620
43	7		621

Ø mm	B mm	HSS-E-PM/TiAlN 10672	...
44	7		622
45	7		623
46	7		624
47	7		625
48	7		626
49	7		627
50	7		628
51	7		629
52	7		630
53	7		631
54	7		632

Ø mm	B mm	HSS-E-PM/TiAlN 10672	...
55	7		633
56	7		634
57	7		635
58	7		636
59	7		637
60	7		638
62	7		639
64	7		640
65	7		641

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
75–80	65–75	60–65	50–55	45–50	40–45	35–40	30–35	-	-	-	-	-	25–28	-	-	40–50	-

10674 TORX® clamping screws

HARTNER

Design
Pack = 5 units.

Applications
For Multiplex indexable insert twist drills
Art. no. 10649 ff.

10674

Designation	Drilling range mm	TORX® size	10674	...
M 2.0 x 4	10–13	T 6		201
M 2.5 x 5	> 13–16	T 7		202
M 2.5 x 7	> 16–18	T 7		203
M 3.0 x 6	> 18–22	T 9		204

Designation	Drilling range mm	TORX® size	10674	...
M 3.0 x 8	> 22–25	T 9		205
M 3.5 x 10	> 25–35	T 15		206
M 4.0 x 15	> 35–65	T 20		207

Stepped drill bit

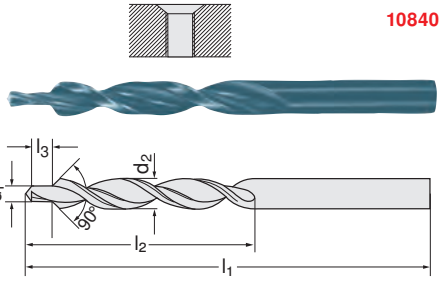
10840 Stepped drill bit

90° | DIN 8378 | N | 118° | HSS | ≤ 900 N/mm²

HARTNER

Design
- **Countersink angle 90°**
- With straight shank
- Cone-shaped section finish
- Thinned chisel edge and surface treatment

Applications
For making threaded core holes and counterbores in accordance with DIN 336 Part 1. Free countersinks for through-bores in accordance with DIN EN 20273.
Quality
HSS ground for steel up to 900 N/mm², aluminium alloys, bronze, brass.



For thread	d_1 x d_2 mm	l_3 mm	l_2 mm	l_1 mm	10840	...
M 3	2.5 x 3.4	8.8	39	70		101
M 4	3.3 x 4.5	11.4	47	80		102
M 5	4.2 x 5.5	13.6	57	93		103

For thread	d_1 x d_2 mm	l_3 mm	l_2 mm	l_1 mm	10840	...
M 6	5.0 x 6.6	16.5	63	101		104
M 8	6.8 x 9.0	21.0	81	125		105
M 10	8.5 x 11.0	25.5	94	142		106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

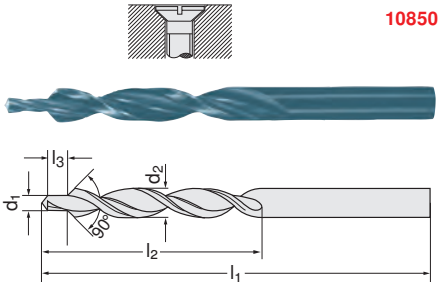
10850 Stepped drill bit

90° | DIN 8374 | N | 118° | HSS | ≤ 900 N/mm²

HARTNER

Design
- **Countersink angle 90°**
- With straight shank
- Cone-shaped section finish
- Thinned chisel edge and surface treatment

Applications
For making screw through-bores DIN EN 20273, screw head countersinking shape A medium DIN 74 Part 1. Screw countersinks DIN 963 to 966.
Quality
HSS ground for steel up to 900 N/mm², aluminium alloys, bronze, brass.



For thread	d_1 x d_2 mm	l_3 mm	l_2 mm	l_1 mm	10850	...
M 3	3.4 x 6.6	9	63	101		101
M 4	4.5 x 9.0	11	81	125		102
M 5	5.5 x 11.0	13	94	142		103
M 6	6.6 x 13.0	15	101	151		105
M 8	9.0 x 17.2	19	130	191		107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

10861 - 10862 Stepped drill bit

180° | N | 118° | HSS | ≤ 900 N/mm²

HARTNER

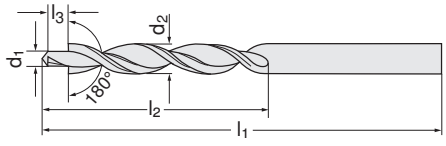
Design
- **Countersink angle 180°**
- Cone-shaped section finish
- Thinned chisel edge and surface treatment

Applications
For making screw through-bores and countersinks DIN EN 20273, screw head countersinking shape H, J and K. Medium design in accordance with DIN 74 Part 2. Cylinder screws in accordance with DIN 84, DIN 912, DIN 6912, DIN 7513, DIN 7984.
Quality
HSS ground for steel up to 900 N/mm², cast iron, aluminium alloys, brass, bronze.

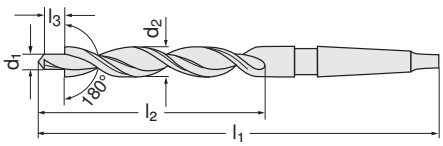
10861
Design
With straight shank.

10862
Design
With Morse taper shank.

DIN 8376



DIN 8377



For thread	d_1 x d_2 mm	l_3 mm	l_2 mm	l_1 mm	Shank MT	Straight shank 10861	Straight shank ...	Morse taper shank 10862	Morse taper shank ...
M 3	3.4 x 6.0	9	57	93	–		101		
M 4	4.5 x 8.0	11	75	117	–		102		
M 5	5.5 x 10.0	13	87	133	–		103		
M 6	6.6 x 11.0	15	94	142	–		104		
M 8	9.0 x 15.0	19	114	169	–		105		
M 8	9.0 x 15.0	19	114	212	2				105
M 10	11.0 x 18.0	23	130	191	–		106		
M 10	11.0 x 18.0	23	130	228	2				106
M 12	13.5 x 20.0	27	140	238	2				107
M 16	17.5 x 26.0	35	165	286	3				109
M 20	22.0 x 33.0	43	185	334	4				111

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10866 - 10868 Stub length stepped drill bit

N | 118° | HSS | ≤ 900 N/mm²

HARTNER

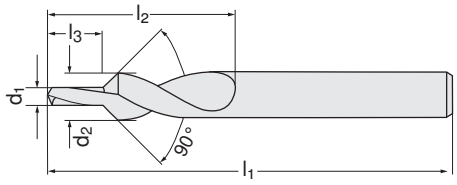
Design
- With straight shank
- Cone-shaped section finish
- Thinned chisel edge

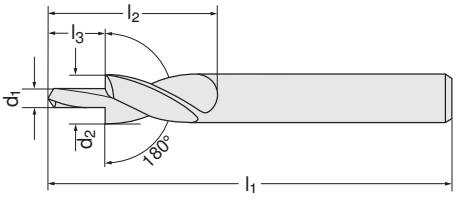
Quality
HSS ground for steel up to 900 N/mm², cast iron, aluminium alloys, brass, bronze.

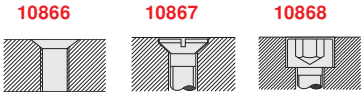
10866
Design
Countersink angle 90°. For thread core hole bores DIN 336 Part 1. Free countersinks for through-bores DIN EN 20273 medium.

10867
Design
Countersink angle 90°. For screw through-bores DIN EN 20273. Countersinks DIN 74 Part 1 fine, countersunk head screws DIN EN ISO 2009 and 2010.

10868
Design
Countersink angle 180°. For screw through-bores DIN EN 20273. Screw head countersinks shape H, J, K Part 2 medium. Cheese head screws DIN EN ISO 4762, DIN EN ISO 1207, DIN 6912, DIN 7513, DIN 7984.







For thread	d_1 x d_2 mm	l_3 mm	l_2 mm	l_1 mm	HSS 10866 ...	HSS 10867 ...	HSS 10868 ...
M 3	2.5 x 3.4	8.8	20	52	101		
M 4	3.3 x 4.5	11.4	24	58	102		
M 5	4.2 x 5.5	13.6	28	66	103		
M 6	5.0 x 6.6	16.5	31	70	104		
M 8	6.8 x 9.0	21.0	40	84	105		
M 10	8.5 x 11.0	25.5	47	95	106		
M 12	10.2 x 13.5	30.0	54	107	107		
M 3	3.2 x 6.0	9.0	28	66		101	
M 4	4.3 x 8.0	11.0	37	79		102	
M 5	5.3 x 10.0	13.0	43	89		103	
M 6	6.4 x 11.5	15.0	47	95		104	
M 8	8.4 x 15.0	19.0	56	111		105	
M 10	10.5 x 19.0	23.0	64	127		106	
M 3	3.4 x 6.0	9.0	28	66			101
M 4	4.5 x 8.0	11.0	37	79			102
M 5	5.5 x 10.0	13.0	43	89			103
M 6	6.6 x 11.0	15.0	47	95			104
M 8	9.0 x 15.0	19.0	56	111			105
M 10	11.0 x 18.0	23.0	62	123			106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

Stepped drill bits | Centre drills

10863 - 10864 Solid carbide stub length stepped drill bit

VHM TiAlN

ATORN®

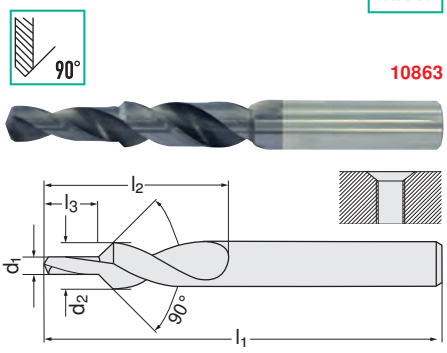
Design
- With straight shank
- Right cutting
- Diameter tolerance h8

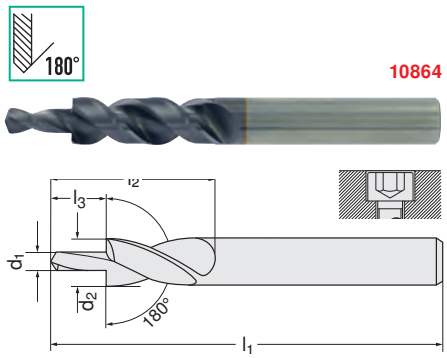
Applications
For thread core holes. For economic manufacture of hole and countersink in a single action.

Quality
Solid carbide/TiAlN-coated.

10863
Design
Countersink angle 90°.
For thread core hole bores DIN 336 Part 1. Free countersinks for through-bores DIN EN 20273 medium.

10864
Design
Countersink angle 180°.
For screw through-bores DIN EN 20273. Screw head countersinks shape H, J, K Part 2 medium. Cheese head screws DIN EN ISO 4762, DIN EN ISO 1207, DIN 6912, DIN 7513, DIN 7984.





90°

For thread	d_1 x d_2 mm	l_3 mm	l_2 mm	l_1 mm	Shank Ø mm	10863	...
M 3	2.5 x 3.4	8.8	28	66	6.0		101
M 4	3.3 x 4.5	11.4	28	66	6.0		102
M 5	4.2 x 5.5	13.6	28	66	6.0		103
M 6	5.0 x 6.6	16.5	41	79	8.0		104
M 8	6.8 x 9.0	21.0	47	89	10.0		105
M 10	8.5 x 11.0	25.5	55	102	12.0		106
M 12	10.2 x 13.5	30.0	60	107	14.0		107

180°

For thread	d_1 x d_2 mm	l_3 mm	l_2 mm	l_1 mm	Shank Ø mm	10864	...
M 3	3.4 x 6.0	9	28	64	6.0		101
M 4	4.5 x 8.0	11	37	79	8.0		102
M 5	5.5 x 10.0	13	43	89	10.0		103
M 6	6.6 x 11.0	15	55	102	12.0		104
M 8	9.0 x 15.0	19	60	115	16.0		105
M 10	11.0 x 18.0	23	62	123	18.0		106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190–200	180–190	100–120	80–100	70–90	65–85	60–80	55–75	35–55	-	-	-	-	35–40	25–30	25–35	65–90	35–60

www.hhw.de
Fax order hotline: 0800 0 915910
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.
eng/P

10869 - 10872 Centre drill bit

DIN 333A | Form A | 118° | Uni

Design
- **Shape A 60°**
- Double-sided
- Right cutting
- Spiral-fluted
- Relief ground
- Conical grinding
- Simple centring hole without protective countersink with a large surface area of the workpiece at the punch tip

Applications
For making centring holes in accordance with DIN 332 in normally machinable materials such as steel, cast iron, and non-ferrous and light metals. Suitable for especially heavy workpieces using synchronously running punch tips.

Note:
Centre drill with Ø 0.50 and 0.80 mm on one side only.

10869
Quality
HSS.

10870 101-118
ATORN®
Quality
HSS.

10870 203-215
ATORN®
Quality
HSS-E.

10871
ATORN®
Quality
HSS-E/TiN-coated.

10872
ATORN®
Quality
HSS-E/TiAlN-coated.

HSS
HSS-E

10869 - 10870

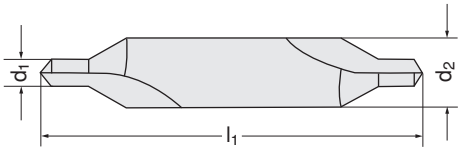
10870 (L)

HSS-E TiN

10871

HSS-E TiAlN

10872



d_1 h7 mm	d_2 mm	l_1 mm		HSS 10869	...	HSS 10870	...	HSS-E 10870	...	HSS-E/TiN 10871	...	HSS-E/TiAlN 10872	...
0.50	3.15	25.0	10 pcs.				101				201		
0.80	3.15	25.0	10 pcs.		102		102				202		
1.00	3.15	31.0	10 pcs.		103		103		203		203		203
L 1.00	4.00	**120.0**	–				104						
1.25	3.15	31.0	10 pcs.		105		105		205		205		205
1.60	4.00	35.0	10 pcs.		106		106		206		206		206
L 1.60	5.00	**120.0**	–				107						
2.00	5.00	40.0	10 pcs.		108		108		208		208		208
L 2.00	6.00	**120.0**	–				109						
2.50	6.30	45.0	10 pcs.		110		110		210		210		210
L 2.50	8.00	**120.0**	–				111						
3.15	8.00	50.0	10 pcs.		112		112		212		212		212
L 3.15	10.00	**120.0**	–				113						
4.00	10.00	55.0	10 pcs.		114		114		214		214		214
L 4.00	10.0	**120.0**	–				119						
5.00	12.50	63.0	–		115		115		215		215		215
L 5.00	14.0	**120.0**	–				120						
6.30	16.00	71.0	–		116		116				216		
8.00	20.00	80.0	–		117		117						
10.00	25.00	100.0	–		118		118						

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
160–200	140–170	90–110	70–80	60–65	50–60	40–50	35–40	30–35	-	-	-	-	-	-	20–25	60–70	40–45

10881 Centre drill set

DIN 333A | Form A | 118° | HSS | Uni

ATORN®

Design
- **Shape A 60°**
- Short
- **Countersink angle 60°**
- Right cutting

Applications
For centring holes without protective countersink in accordance with DIN 333.

Quality
HSS.

Set contents:
3 pieces 1.6 x 4.0 mm
3 pieces 2.0 x 5.0 mm
3 pieces 2.5 x 6.3 mm
3 pieces 3.15 x 8.0 mm
2 pieces 4.0 x 10.0 mm
1 pieces 5.0 x 12.5 mm

	HSS 10881	...
Set contents		
15 pieces		101

10881

Centre drills | NC spotting drills

10873 Centre drill, left-cutting

DIN 333A | Form A | 118° | HSS | Uni

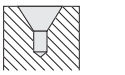
ATORN®

Design
- **Shape A 60°**
- Double-sided
- **Left-cutting**
- Spiral-fluted
- Relief ground
- Cone polished section

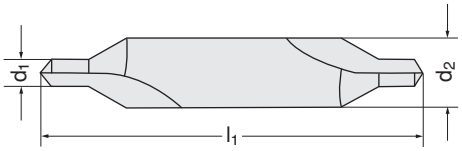
Applications
For left-turning processing machines.

Quality
HSS.

10873



d_1 h7 mm	d_2 mm	l_1 mm		HSS 10873	...
1.00	3.15	31.0	10 pcs.		103
1.60	4.00	35.0	10 pcs.		106
2.00	5.00	40.0	10 pcs.		108
2.50	6.30	45.0	10 pcs.		110
3.15	8.00	50.0	10 pcs.		112
4.00	10.00	55.0	10 pcs.		114
5.00	12.50	63.0	–		115



Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
160–200	140–170	90–110	70–80	60–65	50–60	40–50	35–40	30–35	-	-	-	-	-	-	20–25	60–70	40–45

10874 - 10876 Centre drill bit

DIN 333 | 118° | HSS | Uni

ATORN®

Design
- Double-sided (Ø 0.50 and 0.80 one-sided)
- Right cutting
- Spiral-fluted
- Relief ground
- Cone polished section

Quality
HSS.

10874
Design
- Shape A with bead 60°
- Centring hole without protective countersink
- With ring bead that forms additional space for lubricant

Applications
Beneficial for fast-rotating workpieces when using fixed punch tips.

10875
Design
- Shape R 60°
- Centring hole with radius results in a ring-shaped installation of the workpiece at the punch tip with the advantages of a protective countersink

Applications
Ideal for workpieces in which deformation tensions occur during processing.

10876
Design
- Shape B 60/120°
- Centring hole with conical protective countersink
- Large surface area of the workpiece at the punch tip

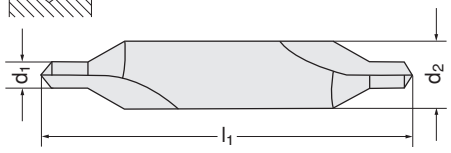
Applications
Especially beneficial for workpieces or tools, which need to be clamped between punch tips very often.

Form A

10874

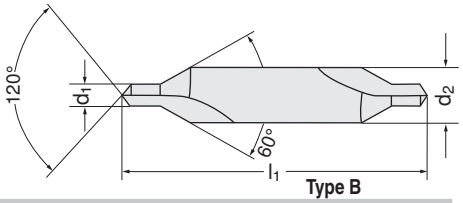
Form R

10875



Form B

10876



d_1 h7 mm	d_2 mm	l_1 mm		Shape A 10874	...	Shape R 10875	...
0.50	3.15	25.0	10 pcs.				101
0.80	3.15	25.0	10 pcs.				102
1.00	3.15	31.0	10 pcs.			103	103
1.25	3.15	31.0	10 pcs.				105
1.60	4.00	35.0	10 pcs.			106	106
2.00	5.00	40.0	10 pcs.			108	108
2.50	6.30	45.0	10 pcs.			110	110
3.15	8.00	50.0	10 pcs.			112	112
4.00	10.00	55.0	10 pcs.			114	114
5.00	12.50	63.0	–			115	115
6.30	16.00	71.0	–			116	116

Type B

d_1 h7 mm	d_2 mm	l_1 mm		10876	...
1.60	6.30	45.0	10 pcs.		103
2.00	8.00	50.0	10 pcs.		104
2.50	10.00	55.0	10 pcs.		105
3.15	11.20	62.0	10 pcs.		106
4.00	14.00	69.0	10 pcs.		107
5.00	18.00	77.0	–		108
6.30	20.00	80.0	–		109

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
160–200	140–170	90–110	70–80	60–65	50–60	40–50	35–40	30–35	-	-	-	-	-	-	20–25	60–70	40–45

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10880 Solid carbide centre drills

Norm | Form A | VHM K10/K20 | Uni

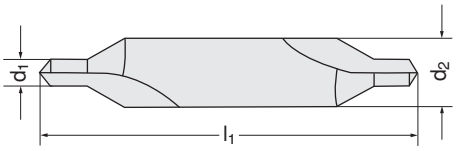
ATORN®

Design
- **Shape A, 60°**
- Simple centring hole without protective countersink
- With large surface area of the workpiece at the punch tip

Quality
Solid carbide K10/K20.

Applications
For making centring holes in materials that are difficult to machine, such as high-strength steel, various types of cast iron and aluminium with a high silicon content. Suitable for especially heavy workpieces using synchronously running punch tips.

10880



d_1 h7 mm	d_2 mm	l_1 mm	K10/K20 10880	...
1.00	3.15	31.5		103
1.25	3.15	31.5		104
1.60	4.00	35.5		105
2.00	5.00	40.0		106

d_1 h7 mm	d_2 mm	l_1 mm	K10/K20 10880	...
2.50	6.30	45.0		107
3.15	8.00	50.0		108
4.00	10.00	56.0		109
5.00	12.50	63.0		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
160–200	140–170	90–110	70–80	60–65	50–60	40–50	35–40	30–35	-	-	-	-	25–28	25–28	20–25	60–70	40–45

10890 - 10893 NC spotting drills

> 1000 N/mm² | Uni

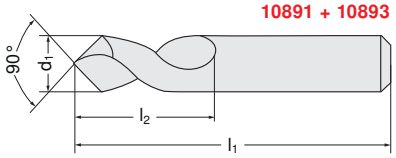
ATORN®

Design
- With straight shank
- Right cutting
- Extremely short chip flutes
- Without chamfers
- Cone polished section
- Special drill with weak core

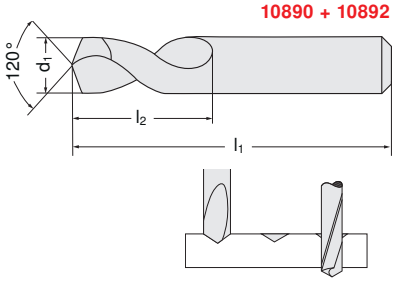
Applications
For drilling in steel and steel casting, alloyed and unalloyed, **up to approx. 1000 N/mm²** strength, grey cast iron, malleable iron, spheroidal graphite iron, sintered iron, nickel silver, graphite, short-chipping aluminium alloys, high-pressure die casting, tough brass. In particular, for precision spotting and countersinking work on NC and CNC-controlled machines, jig boring machines etc.

Note:
Not suitable for drilling deep holes!
NC spotting drill TiN-coated, as well as with another tip angle, in an extended design or with MK shank deliverable on request.

10891 + 10893



10890 + 10892



HSS-E 90° | 10891

HSS-E/TiCN 90° | 10893

HSS-E 120° | 10890

HSS-E/TiCN 120° | 10892

d_1 h_6 mm	l_2 mm	l_1 mm	HSS-E 90° 10891	...	HSS-E/TiCN 90° 10893	...	HSS-E 120° 10890	...	HSS-E/TiCN 120° 10892	...
3	12.0	46		201		201		201		201
4	12.0	55		202		202		202		202
5	14.0	62		203		203		203		203
6	16.0	66		204		204		204		204
8	21.0	79		205		205		205		205
10	25.0	89		206		206		206		206
12	30.0	102		207		207		207		207
16	37.5	115		208		208		208		208
20	40.0	131		209		209		209		209

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10890 + 10891																	
40–100	30–60	35–65	30–50	25–35	20–30	14–20	-	-	-	-	-	-	-	-	-	20–35	10–40
10892 + 10893																	
50–125	40–65	45–80	38–63	30–45	25–30	20–25	-	-	-	-	-	-	15–25	8–15	4–14	25–40	10–40

NC spotting drills

10882 - 10883 Long NC spotting drills

Design
- Straight shank
- Right cutting
- Extremely short chip flutes, without chamfers
- Cone polished section

Applications
For drilling in steel and steel casting, alloyed and unalloyed, **up to approx. 1000 N/mm²** strength, grey cast iron, malleable iron, spheroidal graphite iron, sintered iron, nickel silver, graphite, short-chipping aluminium alloys, high-pressure die casting, tough brass.

Note:
Not suitable for drilling deep holes!

10882
Quality
HSS-E.

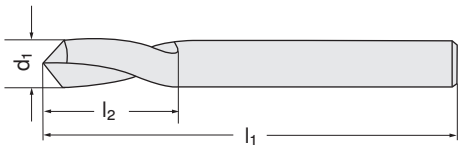
HSS-E

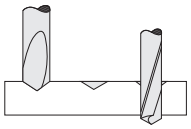
10882

10883
Quality
HSS-E/TiCN-coated.

HSS-E TiCN

10883





d_1 h6 mm	l_2 mm	l_1 mm	HSS-E 90° 10882 ...	HSS-E/TiCN 90° 10883 ...
4	12	100	**104**	**104**
6	20	140	**106**	**106**
8	25	140	**108**	**108**
10	25	170	**110**	**110**
12	30	170	**112**	**112**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10882																	
40–100	30–60	35–65	30–50	25–35	20–30	14–20	-	-	-	-	-	-	-	-	-	20–35	10–40
10883																	
50–125	40–65	45–80	38–63	30–45	25–30	20–25	-	-	-	-	-	-	15–25	8–15	4-10	25–40	10–40

10895 Solid carbide NC spotting drill

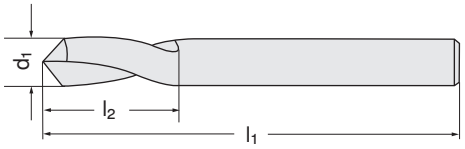
HW

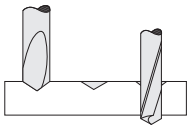
Design
- Straight shank
- Right cutting
- Extremely short chip flutes, without chamfers
- Surface grinding
- Special drill with weak core

Applications
In particular, for precision spotting and countersinking work on NC and CNC-controlled machines, jig boring machines etc. For drilling in grey cast iron, chilled cast iron, short chipping malleable iron, hardened steel, non-ferrous metals, plastics, etc.

Quality
Carbide, type K10/K20 90°.

10895





d_1 h8 mm	l_2 mm	l_1 mm	K10/K20 90° 10895 ...
2	8	40	**107**
3	10	45	**108**
4	12	50	**109**
5	15	50	**110**
6	18	50	**111**
8	23	60	**112**
10	24	70	**113**
12	24	70	**114**
16	26	80	**115**
20	35	100	**116**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
150–220	130–160	130–180	60–85	55–75	50–75	45–60	45–60	45–60	-	-	-	-	30–50	20–45	20–40	65–75	20–70

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10901 - 10903 Solid carbide NC spotting drill

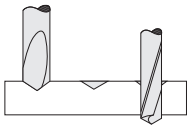
DIN 6535 HA | DIN 6535 HB | VHM TiAlN | Uni

Design
- Straight shank
- Right cutting
- Spiral-fluted

Applications
Drilling and countersinking on NC machines in cast iron, malleable iron, non-ferrous light metals, abrasive plastics.

Quality
Solid carbide ultra-fine grain/TiAlN-coated.

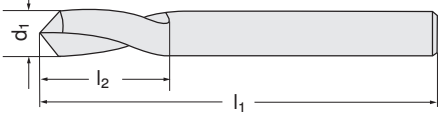
10901
Design
From diameter 6 mm with HB shaft.



142° 10901

120° 10902

90° 10903



			142°		120°		90°	
d_1 h6 mm	l_2 mm	l_1 mm	10901	...	10902	...	10903	...
2	8	40				101		101
3	10	45		102		102		102
4	12	50		103		103		103
5	15	50		104		104		104
6	18	50		105		105		105
8	23	60		106		106		106
10	24	70		107		107		107
12	24	70		108		108		108
16	26	80		110		110		110
20	35	100		112		112		112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
220–300	180–240	180–240	80–100	60–90	60–80	50–70	45–65	45–65	-	-	-	-	30–40	20–30	35–45	80–100	30–80

10905 - 10906 Solid carbide NC spotting drill

DIN 1835 HA | DIN 1835 HB | Uni

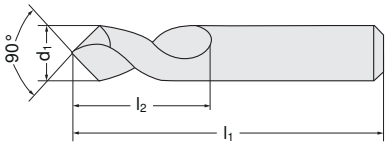
ATORN®

Design
- Spiral-fluted
- With relief grinding

Applications
For universal use up to 1300 N/mm².
For NC spot drilling on CNC machines.

Note:
Diameter 3.0–5.0 with HA shaft.

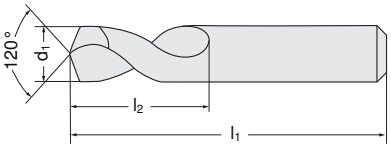
10905



VHM 90° 10905 103-120

VHM TiAlN+ 90° 10905 203-220

10906



VHM 120° 10906 103-120

VHM TiAlN+ 120° 10906 203-220

				Solid carbide 90°		Solid carbide/TiAlN+ 90°		Solid carbide 120°		Solid carbide/TiAlN+ 120°	
d_1 h6 mm	l_2 mm	l_1 mm	Shank DIN 1835	10905	...	10905	...	10906	...	10906	...
3.0	12	46	HA		103		203		103		203
4.0	12	55	HA		104		204		104		204
5.0	14	62	HA		105		205		105		205
6.0	20	66	HB		106		206		106		206
8.0	25	79	HB		108		208		108		208
10.0	25	89	HB		110		210		110		210
12.0	30	102	HB		112		212		112		212
16.0	35	115	HB		116		216		116		216
20.0	40	131	HB		120		220		120		220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10905+10906 1..																	
150–220	130–160	130–180	60–85	55–75	50–75	45–60	45–60	45–60	-	-	-	-	30–50	20–45	20–40	65–75	20–70
10905+10906 2..																	
220–300	180–240	180–240	80–100	60–90	60–80	50–70	45–65	45–65	-	-	-	-	30–40	20–30	35–45	80–100	30–80

( ) = Items with prices in brackets partly available from stock.

10899 Taper pin drills

DIN 1898A | 1:50 | 118° | HSS | ≤ 1000 N/mm²

HARTNER

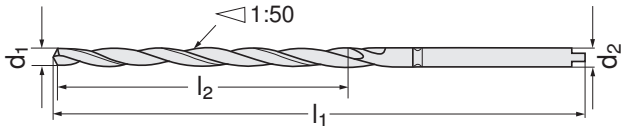
Design
- Straight shank with driver in accordance with DIN 1809
- Right cutting
- Cone polished section

Applications
For drilling in steel and steel casting alloyed and unalloyed **up to 1000 N/mm²** strength, grey cast iron, malleable iron, etc.
For manufacturing tapered bores for taper pins DIN 1 and DIN 7978 in one step.
(Use for finish-machining of pin hole reamers art. no. 13432.)

Quality
HSS.

Note:
The diameter d_1 of the pin hole drill bit corresponds to the nominal diameter of the tapered pin.

10899



d_1 h9 mm	l_2 mm	l_1 mm	d_2 mm	HSS 10899 ...
4	68	112	5.00	105
5	73	122	6.30	106
6	105	160	8.00	107

d_1 h9 mm	l2 mm	l1 mm	d2 mm	HSS 10899 ...
8	145	207	10.00	108
10	175	245	12.50	109
12	210	290	16.00	110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
50–60	40–50	30–60	25–28	22–25	20–22	-	-	-	-	-	-	-	-	-	-	20–28	30–40

Info 10918 - 10927 Drilling and deburring tool (stepped drill bit)

Design
Diameter tolerance +/- 0.13 mm.

Applications
For drilling and deburring in sheet metals of almost all metal alloys from 0.4 to 3.0 mm thickness, stainless steel, grey cast iron, aluminium, brass, plastic and fibreglass.

Quality
HSS.

Note:
Coolant stick see art. no. 10937 101.

10918 Drilling and deburring tool set

118° | HSS | ≤ 900 N/mm²

Design
Consisting of 1 drilling and deburring tool each size 1/2A/3A, in box.

Quality
HSS.

Note:
Coolant stick see art. no. 10937 101.

10918

Drilling Ø mm	HSS 10918 ...
4 - 30	101

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

10924 Stepped drill bit (2 cutting edges)

HSS ≤ 900 N/mm²

Size	Number of cutting edges	Dimension table for bore diameter mm	Shank Ø mm	up to material thickness mm	HSS 10924	...
1	2	4/5/6/7/8/9/10/11/12	6	5		130
2	2	12/13/14/15/16/17/18/19/20	9	4		142 NEW
3	2	20/21/22/23/24/25/26/27/28/29/30	12	4		132
2A	2	4/6/8/10/12/14/16/18/20	8	4		135
3A	2	6/8/10/12/14/16/18/20/22/24/26/28/30	10	4		143 NEW
4	2	7/12.5 (PG7)/15.2 (PG9)/18.6 (PG11)/20.4 (PG 13.5)/22.5 (PG16)/28.3 (PG21)/30.5/32.6	12	4		137 NEW
5	2	7/12.5 (PG7)/15.2 (PG9)/18.6 (PG11)/20.4 (PG 13.5)/22.5 (PG16)/28.3 (PG21)/33/37 (PG29)/39.6	12	4		138 NEW
13	2	30/31/32/33/34/35/36/37/38/39/40	13	4		139 NEW
14	2	40/41/42/43/4/45/46/47/48/49/50	13	4		140 NEW
15	2	50/51/52/53/54/55/56/57/58/59/60	13	4		141 NEW

10927 Stepped drill bit

≤ 900 N/mm²

Design
With 2 spiral grooves (DBGM) and edge-breaker (DBGM) deburring zone, as well as ROTASTOP (DBGM) comfort shank. Both steps (6 mm for core hole and 3 mm for through hole) on one tool.

Applications
For burr-free drilling and reaming for cable glands in accordance with **DIN EN 60423.** For processing cable junction boxes, installation boxes, distributor housings, terminal boxes, switch cabinets, switch and control devices, housings.

Thread core hole (6 mm steps) Dia./thread
7.0/-
10.5/M 12 x 1.5
14.5/M 16 x 1.5
18.5/M 20 x 1.5
23.5/M 25 x 1.5
30.5/M 30 x 1.5

Through hole (3 mm steps) Dia./thread
12.5/M 12 x 1.5
16.5/M 16 x 1.5
20.5/M 20 x 1.5
25.5/M 25 x 1.5
32.5/M 30 x 1.5

HSS

HSS-E TiN

HSS-E TiAlN

Quality	10927 ...
HSS	101
TiN-coated	201
TiAlN-coated	301

10934 Slabbing cut drill reamer (sheet metal drill) sets

≤ 900 N/mm²

Design
- With straight shank
- Drilling range 3–30.5 mm
- Consisting of 1 drill bit in each size: 1, 2 and 3, in plastic case

Applications
For burr- and chatter-free drilling and reaming of holes in thin materials in a single action. For annealed sheet steels, stainless-steel sheets, body panels, non-ferrous metals, thin-walled pipes and plastics such as PVC, Plexiglas, Resopal, among others, as well as hard paper, plywood, etc.

Note:
Bore to the edge possible without deformation!
Coolant stick, see art. no. 10937 101.

10934 201
Quality
HSS-E.

10934 202
Quality
HSS-E/TiN-coated.

Quality	10934 ...
HSS-E	201
HSS-E/TiN	202

HSS-E

HSS-E TiN

Slabbing cut drill reamers | Universal milling drills | Spot weld cutters | Core drill bits

10935 - 10937 Slabbing cut drill reamer (sheet metal drill)

≤ 900 N/mm²

Design
- With straight shank

Applications
For burr- and chatter-free drilling and reaming of holes in thin materials in a single action. For annealed sheet steels, stainless-steel sheets, body panels, non-ferrous metals, thin-walled pipes and plastics such as PVC, Plexiglas, Resopal, among others, as well as hard paper, plywood, etc.

Note:
Cooling lubricant!

10935
Quality
HSS-E.

10936
Quality
HSS-E/TiN-coated.

10937
Coolant stick
Design
Without silicone, content 25 ml.
Applications
For lubricating all areas of friction when drilling and thread cutting.

HSS-E

10935

HSS-E TiN

10936

10937

Size	for hole Ø mm	Shank Ø mm	HSS-E 10935	...	HSS-E/TiN 10936	...	Coolant stick 10937	...
1	3–14.0	6		101		101		
2	8–20.0	8		102		102		
3	16–30.5	9		103		103		
4	26–40.0	12		104		104		
5	36–50.0	12		105		105		
6	46–60.0	12		106		106		
7	4–30.5	9		107		107		
-	-	-						101

10940 Universal milling drill

HSS

Design
With straight shank.
Applications
For drilling and cutting out any desired contour in sheets of all kinds, also suitable for wood, Resopal and other plastics.
Quality
HSS.

Note:
Effective rotation speed approx. 1000–1200 rpm.
In the case of lubricating material (zinc, aluminium, etc.) immerse the tool in a lubricant occasionally. For use in electric hand drills.
Coolant stick see art. no. 10937 101.

10940

Ø mm	HSS 10940	...
6.35		101

10942 Spot weld cutter

HSS

Design
The core drill is reversible, the cutting depth can be adjusted.
Applications
For loosening spot-welded sheet metal parts without deformation or tearing of the sheet metal. For sheet metal processing plants, body workshops, industry, etc.

Quality
HSS.

Note:
Effective rotation speed approx. 900 rpm.

10942

	Core drill Ø mm	HSS 10942	...
Cutter	10		101
Spare core	10		102

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

10955 - 10956 HSS-Co core drill bit (Weldon)

≤ 750 N/mm²

Design
The core drill bit machines only a narrow groove; the remaining core is removed unmachined. Low drive power – up to 4 times faster drilling time, long service life – low wear. All core drill bits with 19 mm Weldon shank for direct fitting or for fitting in Morse taper fittings AMK-2/AMK-3 with internal cooling.

Applications
Suitable for magnetic core drills (see HHW Catalogue Volume 2 art. no. 90060) or for table and pillar drills.

Quality
HSS Co.

Note:
Core drill bits in cemented carbide design or other cutting depths deliverable on request.

10955
Cutting depth 25 mm.

10956
Cutting depth 50 mm.

10955

10956

	25 mm		50 mm	
Ø mm	10955	...	10956	...
12		101		101
13		102		102
14		103		103
15		104		104
16		105		105
17		106		106
18		107		107
19		108		108
20		109		109
21		110		110
22		111		111
23		112		112
24		113		113

	25 mm		50 mm	
Ø mm	10955	...	10956	...
25		114		114
26		115		115
27		116		116
28		117		117
29		118		118
30		119		119
31		120		120
32		121		121
33		122		122
34		123		123
35		124		124
36		125		125
37		126		126

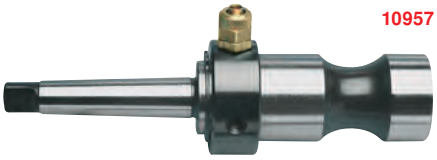
	25 mm		50 mm	
Ø mm	10955	...	10956	...
38		127		127
39		128		128
40		129		129
41		130		130
42		131		131
43		132		132
44		133		133
45		134		134
46		135		135
47		136		136
48		137		137
49		138		138
50		139		139

10957 - 10958 Accessories for core drill bits

10957
Drive arbors
Design
With automatic internal cooling and nipple for coolant hose. Supplied in plastic case.
Applications
For fitting the HSS-Co core drill bits (art. no. 10955-10956).

10958
Replacement ejector pins
Applications
For HSS-Co core drill bits **Ø 12 to 50 mm.**

10957



10958

Size	for magnetic core drill Art. no.	for cutting depth mm	for Ø mm	Drive arbor 10957	...	Ejector pin 10958	...
MT 2	90060 199	-	-		101		
MT 3	90060 200 + 203	-	-		102		
-	-	25	12-50				101
-	-	50	12-50				102

Core drill bits

10959 QuickIN core drill bit

Design
- With QuickIN holder
- The core drill bit machines only a narrow groove; the remaining core is removed unmachined
- Low drive output
- Up to 4 times faster drilling time
- Long service life
- Reduced wear

Applications
For cutting depth up to 35 mm.
For direct fitting in **core drills KBM 65 Q/65 QF/65 U / KBM 50/50 U/50 A** (see HHW Catalogue Volume 2 art. no. 90057), for **KBM 65/65 F** (predecessor type) using a QuickIN drive arbor (art. no. 10962) and for **table and pillar drills using** QuickIN drive arbors (art. no. 10964).

Note:
Further drilling diameters and cutting depths deliverable on request.

10959 101-121
Individual core drill bits
Quality
HSS.

10959 201-254
Individual core drill bits
Quality
Cemented carbide.

10959 200
Best of QuickIn core drill bits accessories set
Design
- Extremely long service life
- Excellent cutting performance
- Metric dimensions
- Cutting depth 35 mm
- Set design, consisting of 6 core drill bits Ø 12, 14, 16, 18, 20 and 22 mm (cutting depth 35 mm), as well as 2 centring pins (105 mm) in plastic case

Applications
Suitable for: KBM 50 Q, KBM 32 Q, KBM 50 auto, KBM 50 U, KBM 65 U, KBM 80 U, KBM 80 auto.

10959 200

10959 101-121

10959 201-254

Set contents	Core hole Ø mm	Centring pins mm	10959	...
8 pieces	12/14/16/18/20/22	2 x 105		200

		HSS		Carbide	
Drilling Ø mm	Total length mm	10959	...	10959	...
12	77		101		201
13	77		102		202
14	77		103		203
15	77		104		204
16	77		105		205
17	77		106		206
18	77		107		207
19	77		108		208
20	77		109		209
21	77		110		210
22	77		111		211
23	77		112		212
24	77		113		213
25	77		114		214
26	77		115		215
27	77		116		216
28	77		117		217
29	77		118		218
30	77		119		219
31	77		120		220
32	77		121		221
33	77				222
34	77				223
35	77				224
36	77				225
37	77				226
38	77				227

		HSS		Carbide	
Drilling Ø mm	Total length mm	10959	...	10959	...
39	77				228
40	77				229
41	77				230
42	77				231
43	77				232
44	77				233
45	77				234
46	77				235
47	77				236
48	77				237
49	77				238
50	77				239
51	77				240
52	77				241
53	77				242
54	77				243
55	77				244
56	77				245
57	77				246
58	77				247
59	77				248
60	77				249
61	77				250
62	77				251
63	77				252
64	77				253
65	77				254

10961 QuickIN PLUS core drill bit and centre drill

HM

10961 101-117
Design
- With QuickIN Plus mount
- Maximum service life thanks to carbide tips
- Excellent cutting performance on all common metals
- Drilling Ø steel up to 25 mm/1 inch
- Drilling diameter for aluminium up to 30 mm / 1.3/16 inch

Applications
For cutting depth up to 20 mm.
For direct fitting in core drill KBH 25 (see HHW Catalogue Volume 2 art. no. 90054 101).

Quality
Cemented carbide.

Note:
Also deliverable on request:
- *Further drilling Ø (19/16–1 3/16 inch)*
- *Cemented carbide core drill bits coated (14–30 mm, 9/16–1.3/16 inch)*
- *Cemented carbide hole saws (14–54 mm, 9/16–2.1/8 inch)*
- *Cemented carbide hole saws for pipes (21–54 mm, 7/8–2.1/8 inch)*

10961 101-117

10961 302
Centre drill bit

Note:
Further accessories deliverable on request:
- *Chucks and collet chucks for thread cutting*
- *Chip container*
- *Cutting spray*
- *Extension*

10961 302

Centre drill bit

For drilling Ø mm	10961 ...
14–54	302

Core drill bits

Drilling Ø mm	10961 ...
14	101
15	102
16	103
17	104
18	105
19	106
20	107
21	108
22	109

Core drill bits

Drilling Ø mm	10961 ...
23	110
24	111
25	112
26	113
27	114
28	115
29	116
30	117

10960 Core drill bit (with thread)

HM

Design
With thread M 18 x 6 P 1.5. The core drill bit machines only a narrow groove, the remaining core is removed unmachined, lower drive power – up to 4 times faster drilling time, long service life – lower wear.
Applications
For cutting depth up to 50 mm.
For direct fitting in **core drills KBM 65/65 F** (predecessor type), for **KBM 65 Q/65 QF** (see HHW Catalogue Volume 2 art. no. 90057) using QuickIN drive arbor (art. no. 10962) and adapter (art. no. 10965) and for **table and pillar drills using** QuickIN drive arbors (art. no. 10964) and adapter (art. no. 10965).

Quality
Cemented carbide.

Note:
Other cutting depths deliverable on request.

10960

Drilling Ø mm	Total length mm	10960 ...
12	82	601
13	82	602
14	82	603
15	82	604
16	82	605
17	82	606
18	82	607
19	82	608
20	82	609
21	82	610
22	82	611
23	82	612
24	82	613
25	82	614
26	78	615

Drilling Ø mm	Total length mm	10960 ...
27	78	616
28	78	617
29	78	618
30	78	619
31	78	620
32	78	621
33	78	622
34	78	623
35	78	624
36	78	625
37	78	626
38	78	627
39	78	628
40	78	629
41	78	630

Drilling Ø mm	Total length mm	10960 ...
42	78	631
43	78	632
44	78	633
45	78	634
46	78	635
47	78	636
48	78	637
49	78	638
50	78	639
52	78	641
54	78	643
56	78	645
58	78	647
60	78	649
65	78	654

Accessories for QuickIN core drill bits

10962 QuickIN drive arbor (core drill)

Design
- With Morse taper MT 3
- Integrated cooling lubricant supply

Applications
For **core drills KBM 65/65 F** (predecessor type) and **KBM 65 Q/65 QF** (see HHW Catalogue Volume 2 art. no. 90057).
For direct fitting of **QuickIN core drill bits** (art. no. 10959)
or using adapter (art. no. 10965)
of **core drill bits with thread** (art. no. 10959) or **with Weldon shank** (art. no. 10955).

10962

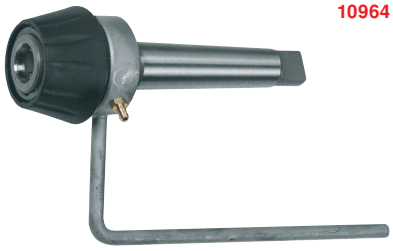
Shank	for core drill bit Drilling Ø mm	10962 ...
MT 3	12 - 65	101

10964 QuickIN drive arbors (table/pillar drill)

Design
- With Morse taper
- Hand pump for external cooling lubricant supply

Applications
For table and pillar drills.
For direct fitting of **QuickIN core drill bits** (art. no. 10959)
or using adapter (art. no. 10965)
of **core drill bits with thread** (art. no. 10960)
or with **Weldon shank** (art. no. 10955).

10964



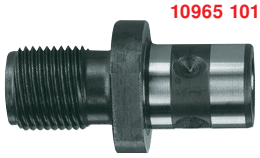
Shank	for core drill bit Drilling Ø mm	10964 ...
MT 2	12 - 65	101
MT 3	12 - 65	102

10965 QuickIN adapter

Applications
For **core drills KBM 65/65 F** (predecessor type),
KBM 65 Q/65 QF (see HHW Catalogue Volume 2 art. no. 90057) and
table and pillar drills.

10965 101
Design
Output M 18 x 6 P 1.5.
Applications
For fitting **core drill bits with thread** (art. no. 10960).

10965 101



10965 102
Design
Output Weldon.
Applications
For fitting **core drill bits with Weldon shank** (art. no. 10955).

10965 102

Output	10965 ...
M 18 x 6 P 1.5	101
Weldon	102

10966 Centring pins

Applications
For removing the unmachined remaining core.

10966 101
Applications
For **core drill bits with QuickIN fitting** (art. no. 10959).

10966 102
Applications
For **core drill bits with thread** (art. no. 10960).

10966

For core drill bit with fitting	Length mm	10966 ...
QuickIN	105	101
Thread	125	102

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info

Overview of solid carbide twist drills (I)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	11016	11020	11021	11022	11030	11033	11040	11041	11147	11148	11061
Standard/DIN	Factory standard	Factory standard	Factory standard	Factory standard	6539	6539	6539	6539	6537	6537	6539
Diameter range mm	0.10 - 3.00	1 - 12	1 - 12	1 - 12	1 - 16	1 - 16	3 - 16	3 - 16	1 - 20	1 - 20	3 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	-	TiN	TiAlN	K10/K20	TiAlN	K10/K20	TiN	TiAlN+	TiAlN+	TiAlN Ultra-M
Point angle	130°	118°	118°	118°	118°	118°	150°	150°	140°	140°	140°
Version	5 x D	-	-	-	Z2	Z2	Z3	Z3	3 x D	3 x D, IKZ	3 x D, IKZ
Type	UNI	UNI	UNI	UNI	N	N	N	N	UNI	UNI	VA
Catalogue page	11.3	11.3	11.3	11.3	11.5	11.5	11.6	11.6	11.7	11.9	11.11
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si	●	●	●	●	●	●	●	●	●	●	
Aluminium > 10% Si	●	●	●	●	●	●	●	●	●	●	
Copper	●	●	●	●	●	●	●	●	●	●	
Plastics		○	○	○	○	○			●	●	
Graphite	●								●	●	
Steel < 520 N	●	●	●	●	●	●		●	●	●	
Steel < 750 N	●	●	●	●	●	●		●	●	●	
Steel < 900 N	●	●	●	●	●	●		●	●	●	
Steel < 1100 N	●	●	●	●	●	●		●	●	●	
Steel < 1200 N	●	●	●	●	●	●		●	●	●	
Steel < 1400 N	●	●	●	●	●	●		●	●	●	
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG	●	●	●	●	●	●	●	●	●	●	
GGG	●	●	●	●	●	●	●	●	●	●	
VA < 900 N	●	●	●	●	●	●			●	●	●
VA > 900 N	●	●	●	●	●	●			●	●	●
Titanium			○	●		●					●
Titanium alloy			○	●		●					●
Nickel base	●			●		●					

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	NACHI	NACHI	NACHI	NACHI	NACHI
Article number	11062	11163	11164	11073	11074	11100	11101	11102	11103	11104	11105
Standard/DIN	6539	6537	6537	6539	6539	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard
Diameter range mm	3 - 20	1 - 20	1 - 20	3 - 20	3 - 20	8 - 20	0.2 - 20	3 - 12	3 - 20	1 - 16	3 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN Ultra-M	TiAlN+	TiAlN+	TiAlN Ultra-M	TiAlN Ultra-M	TiAlN	AQ	AQ	AQ	AQ	AQ
Point angle	140°	140°	140°	140°	140°	180°	180°	180°	180°	180°	180°
Version	3 x D, IKZ	5 x D	5 x D, IKZ	5 x D, IKZ	5 x D, IKZ	5 x D, IKZ	2 x D	2 x D	2 x D	3 x D, IKZ	4 x D
Type	VA	UNI	UNI	VA	VA	UNI	UNI	UNI	UNI	UNI	UNI
Catalogue page	11.11	11.12	11.14	11.15	11.15	11.17	11.18	11.19	11.20	11.21	11.22
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si		●	●			●	●	●	●	●	●
Aluminium > 10% Si		●	●			●	●	●	●	●	●
Copper		●	●			●	●	●	●	●	●
Plastics		●	●								
Graphite		●	●								
Steel < 520 N		●	●			●	●	●	●	●	●
Steel < 750 N		●	●			●	●	●	●	●	●
Steel < 900 N		●	●			●	●	●	●	●	●
Steel < 1100 N		●	●			●	●	●	●	●	●
Steel < 1200 N		●	●			●	●	●	●	●	●
Steel < 1400 N		●	●			●	●	●	●	●	●
Hardox											
< 50 HRC							●	●	●	●	●
< 60 HRC											
< 67 HRC											
GG		●	●			●	●	●	●	●	●
GGG		●	●			●	●	●	●	●	●
VA < 900 N	●	●	●	●	●	●	●	●	●	●	●
VA > 900 N	●	●	●	●	●	●	●	●	●	●	●
Titanium	●			●	●	●					
Titanium alloy	●			●	●	●					
Nickel base											

Info — Overview of solid carbide twist drills (II)

Brand	NACHI	ATORN	ATORN	ATORN	HHW	HHW	HHW	HHW	HHW	HHW	ATORN
Article number	11106	11090	11167	11169	11078	11079	11080	11081	11082	11083	11071
	NEW		NEW	NEW							NEW
Standard/DIN	Factory standard	Factory standard	6537	6537	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard
Diameter range mm	1 - 16	5.98 - 16	3 - 20	3 - 20	2.02 - 12.02	3 - 12	2 - 12	3 - 10	2 - 10	3 - 20	1 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	AQ	TiAlN	TiAlN+	TiAlN+	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	ZrN	TiAlNSiN
Point angle	180°	140°	140°	140°	140°	135°	135°	135°	135°	145°	140°
Version	5 x D, IKZ	5 x D, IKZ	8 x D, IKZ	12 x D, IKZ	5 x D, IKZ	16 x D, IKZ	20 x D, IKZ	25 x D, IKZ	30 x D, IKZ	5 x D, IKZ	3 x D
Type	UNI	UNI	UNI	UNI	-	UNI	UNI	UNI	UNI	W	H
Catalogue page	11.23	11.24	11.25	11.26	11.27	11.28	11.28	11.29	11.29	11.30	11.31
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si	●	●	●	●	●	●	●	●	●	●	
Aluminium > 10% Si	●	●	●	●	●	●	●	●	●	●	
Copper	●	●	●	●	●	●	●	●	●	●	
Plastics			●	●							
Graphite			●	●							
Steel < 520 N	●	●	●	●	●	●	●	●	●		
Steel < 750 N	●	●	●	●	●	●	●	●	●		
Steel < 900 N	●	●	●	●	●	●	●	●	●		
Steel < 1100 N	●	●	●	●	●	●	●	●	●		
Steel < 1200 N	●	●	●	●	●	●	●	●	●		
Steel < 1400 N	●	●	●	●	●	●	●	●	●		
Hardox											
< 50 HRC	●										●
< 60 HRC											●
< 67 HRC											●
GG	●	●	●	●	●	●	●	●	●		
GGG	●	●	●	●	●	●	●	●	●		
VA < 900 N	●	●	●	●	●	●	●	●	●		
VA > 900 N	●	●	●	●	●	●	●	●	●		
Titanium		●			●	●	●	●	●		
Titanium alloy		●			●	●	●	●	●		
Nickel base											

Info — The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use				PMK
HM grade				H 42
Coating				coated
Designation	W$^{\pm 0,1}$ mm	R$^{\pm 0,05}$ mm		18674 ...
GTN-2	2,2	0,16	10 pieces	113
GTN-3	3,1	0,20	10 pieces	114

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11016 Solid-carbide micro high-performance drill

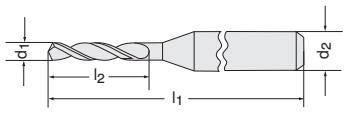
HPC | 130° | DIN 6535 HA | VHM TiAlN | 5xD | Uni

ATORN®

Design
- High-performance micro drill with shank Ø of 3 mm h6
- Cutting tolerance 0.004 mm
- Precision grinding
- Extremely hard, low-friction and temperature-resistant TiAlN coating

Applications
For universal use, for example in metal, cast iron and VA.

11016



Solid carbide/TiAlN

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11016	...
0.10	1.00	38	3		101
0.15	2.00	38	3		102
0.20	2.50	38	3		103
0.25	4.00	38	3		104
0.30	5.50	38	3		105
0.35	5.50	38	3		106
0.40	6.00	38	3		107
0.45	6.00	38	3		108
0.50	6.00	38	3		109
0.55	8.00	38	3		110
0.60	8.00	38	3		111
0.65	8.00	38	3		112
0.70	8.00	38	3		113
0.75	8.00	38	3		114
0.80	8.00	38	3		115
0.85	8.00	38	3		116
0.90	8.00	38	3		117
0.95	8.00	38	3		118
0.97	8.00	38	3		119
0.98	8.00	38	3		120
0.99	8.00	38	3		121
1.00	10.00	38	3		122
1.01	10.00	38	3		123
1.02	10.00	38	3		124
1.03	10.00	38	3		125
1.05	10.00	38	3		126
1.10	10.00	38	3		127
1.15	10.00	38	3		128

Solid carbide/TiAlN

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11016	...
1.20	10.00	38	3		129
1.25	10.00	38	3		130
1.30	10.00	38	3		131
1.35	10.00	38	3		132
1.40	10.00	38	3		133
1.45	10.00	38	3		134
1.47	10.00	38	3		135
1.48	10.00	38	3		136
1.49	10.00	38	3		137
1.50	12.00	38	3		138
1.51	12.00	38	3		139
1.52	12.00	38	3		140
1.53	12.00	38	3		141
1.55	12.00	38	3		142
1.60	12.00	38	3		143
1.65	12.00	38	3		144
1.70	12.00	38	3		145
1.75	12.00	38	3		146
1.80	12.00	38	3		147
1.85	12.00	38	3		148
1.90	12.00	38	3		149
1.95	12.00	38	3		150
1.97	12.00	38	3		151
1.98	12.00	38	3		152
1.99	12.00	38	3		153
2.00	12.00	38	3		154
2.01	12.00	38	3		155
2.02	12.00	38	3		156

Solid carbide/TiAlN

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11016	...
2.03	12.00	38	3		157
2.05	12.00	38	3		158
2.10	12.00	38	3		159
2.15	12.00	38	3		160
2.20	12.00	38	3		161
2.25	12.00	38	3		162
2.30	12.00	38	3		163
2.35	12.00	38	3		164
2.40	12.00	38	3		165
2.45	12.00	38	3		166
2.50	12.00	38	3		167
2.51	12.00	38	3		168
2.52	12.00	38	3		169
2.53	12.00	38	3		170
2.55	12.00	38	3		171
2.60	12.00	38	3		172
2.65	12.00	38	3		173
2.70	12.00	38	3		174
2.75	12.00	38	3		175
2.80	12.00	38	3		176
2.85	12.00	38	3		177
2.90	12.00	38	3		178
2.95	12.00	38	3		179
2.96	12.00	38	3		180
2.97	12.00	38	3		181
2.98	12.00	38	3		182
2.99	12.00	38	3		183
3.00	12.00	38	3		184

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
150–220	100–160	80–130	50–75	50–75	50–70	40–50	30–40	20–35	-	-	-	-	20–35	20–35	10–30	60–100	-

11020 - 11022 Solid-carbide twist drill

Norm | 118° | DIN 6535 HA | Uni

ATORN®

Design
- **2 cutting edges**
- With straight shank
- Right cutting
- **Tip angle 118°**
- Four-area grinding at the tip

11020
Applications
For drilling in steel **up to 1400 N/mm²** strength, cast iron, steel casting, copper, aluminium, thermosetting plastics, glass and carbon fibre reinforced plastics and hard paper.
Quality
Solid carbide, K10/K20.

11021
Quality
Solid carbide, K10/K20 TiN-coated.

11022
Applications
Also suitable for difficult-to-machine steels.
Quality
Solid carbide, K10/K20 TiAlN-coated.

VHM — 11020

VHM TiN — 11021

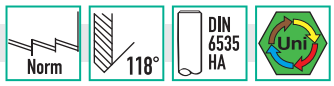
VHM TiAlN — 11022

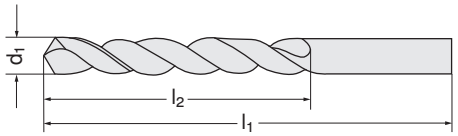
Continued ▶

Solid-carbide twist drill

11020 - 11022 Solid-carbide twist drill

Continued





			Solid carbide		Solid carbide/TiN		Solid carbide/TiAlN	
d_1 h8 mm	l_2 mm	l_1 mm	11020	...	11021	...	11022	...
1.0	12	34		090		090		090
1.1	14	36		091				
1.2	16	38		092				
1.3	16	38		093				
1.4	18	40		094				
1.5	18	40		095		095		095
1.6	20	43		096				096
1.7	20	43		097				
1.8	22	46		098				098
1.9	22	46		099				
2.0	24	49		100		100		100
2.1	24	49		101				
2.2	27	53		102				
2.3	27	53		103				
2.4	30	57		104				
2.5	30	57		105		105		105
2.6	30	57		106				
2.7	33	61		107				
2.8	33	61		108		108		108
2.9	33	61		109				
3.0	33	61		110		110		110
3.1	36	65		111				
3.2	36	65		112				
3.3	36	65		113		113		113
3.4	39	70		114				
3.5	39	70		115		115		115
3.6	39	70		116				
3.7	39	70		117				
3.8	43	75		118		118		118
3.9	43	75		119				
4.0	43	75		120		120		120
4.1	43	75		121				
4.2	43	75		122		122		122
4.3	47	80		123				
4.4	47	80		124				
4.5	47	80		125		125		125
4.6	47	80		126				
4.7	47	80		127				
4.8	52	86		128		128		128
4.9	52	86		129				
5.0	52	86		130		130		130
5.1	52	86		131				
5.2	52	86		132				
5.3	52	86		133				
5.4	57	93		134				
5.5	57	93		135		135		135
5.6	57	93		136				
5.7	57	93		137				
5.8	57	93		138		138		138
5.9	57	93		139				
6.0	57	93		140		140		140
6.1	63	101		141				
6.2	63	101		142				
6.3	63	101		143				
6.4	63	101		144				
6.5	63	101		145		145		145
6.6	63	101		146				
6.7	63	101		147				
6.8	69	109		148		148		148
6.9	69	109		149				
7.0	69	109		150		150		150
7.1	69	109		151				
7.2	69	109		152				
7.3	69	109		153				
7.4	69	109		154				
7.5	69	109		155		155		155
7.6	75	117		156				
7.7	75	117		157				
7.8	75	117		158				
7.9	75	117		159				
8.0	75	117		160		160		160
8.1	75	117		161				
8.2	75	117		162				
8.3	75	117		163				
8.4	75	117		164				
8.5	75	117		165		165		165
8.6	81	125		166				
8.7	81	125		167				
8.8	81	125		168				
8.9	81	125		169				
9.0	81	125		170		170		170
9.1	81	125		171				
9.2	81	125		172				
9.3	81	125		173				
9.4	81	125		174				
9.5	81	125		175		175		175
9.6	87	133		176				
9.7	87	133		177				
9.8	87	133		178				
9.9	87	133		179				
10.0	87	133		180		180		180
10.2	87	133		182		182		182
10.5	87	133		185		185		185
11.0	94	142		190				190
11.5	94	142		195				
12.0	101	151		200		200		200

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
11020																	
180–200	130–160	60–100	60–80	65–75	65–70	50–60	40–50	20–25	-	-	-	-	20–25	15–20	-	60–70	50–70
11021																	
200–230	150–170	130–200	90–100	80–90	70–80	60–70	50–60	40–50	-	-	-	-	35–40	30–35	20–25	70–100	50–70
11022																	
220–260	160–180	180–250	130–145	100–110	80–100	70–80	60–70	50–60	-	-	-	-	45–55	35–45	20–45	100–145	50–70

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11030 - 11033 Extra-short solid-carbide twist drill

DIN 6539 | Z 2 | N | 118° | DIN 6535 HA | ≤ 1400 N/mm²

ATORN®

Design
- **2 cutting edges**
- With straight shank
- Right cutting
- **Tip angle 118°**

Applications
For drilling steel **up to 1400 N/mm²** strength, cast iron, steel casting, copper, aluminium, thermosetting plastics, glass and carbon fibre reinforced plastics and hard paper.

11030
Quality
Solid carbide, K10/K20.

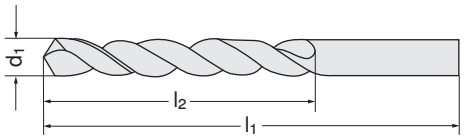
11033
Applications
Also suitable for difficult-to-machine steels.
Quality
Solid carbide/TiAlN-coated.

VHM K10/K20

11030

VHM TiAlN

11033



			Solid carbide	Solid carbide/TiAlN				Solid carbide	Solid carbide/TiAlN	
d_1 h6 mm	l_2 mm	l_1 mm	11030	...	11033	...	d_1 h6 mm	l_2 mm	l_1 mm	11030	...	11033	...
1.0	6	26		110		110	5.2	26	62		152		
1.1	7	28		111		111	5.3	26	62		153		
1.2	8	30		112		112	5.4	28	66		154		
1.3	8	30		113		113	5.5	28	66		155		155
1.4	9	32		114		114	5.6	28	66		156		
1.5	9	32		115		115	5.7	28	66		157		
1.6	10	34		116		116	5.8	28	66		158		
1.7	10	34		117		117	5.9	28	66		159		
1.8	11	36		118		118	6.0	28	66		160		160
1.9	11	36		119		119	6.1	31	70		161		161
2.0	12	38		120		120	6.2	31	70		162		
2.1	12	38		121		121	6.3	31	70		163		163
2.2	13	40		122		122	6.4	31	70		164		
2.3	13	40		123		123	6.5	31	70		165		165
2.4	14	43		124		124	6.6	31	70		166		
2.5	14	43		125		125	6.7	31	70		167		
2.6	14	43		126		126	6.8	34	74		168		168
2.7	16	46		127		127	6.9	34	74		169		
2.8	16	46		128		128	7.0	34	74		170		170
2.9	16	46		129		129	7.1	34	74		171		
3.0	16	46		130		130	7.2	34	74		172		
3.1	18	49		131		131	7.3	34	74		173		
3.2	18	49		132		132	7.4	34	74		174		
3.3	18	49		133		133	7.5	34	74		175		175
3.4	20	52		134		134	7.6	37	79		176		
3.5	20	52		135		135	7.7	37	79		177		
3.6	20	52		136		136	7.8	37	79		178		
3.7	20	52		137		137	7.9	37	79		179		
3.8	22	55		138		138	8.0	37	79		180		180
3.9	22	55		139		139	8.5	37	79		185		185
4.0	22	55		140		140	9.0	40	84		190		190
4.1	22	55		141		141	9.5	40	84		195		195
4.2	22	55		142		142	10.0	43	89		200		200
4.3	24	58		143		143	10.2	43	89		202		202
4.4	24	58		144			10.5	43	89				205
4.5	24	58		145		145	11.0	47	95		210		210
4.6	24	58		146		146	11.5	47	95		215		215
4.7	24	58		147			12.0	51	102		220		220
4.8	26	62		148		148	13.0	51	102		230		230
4.9	26	62		149		149	14.0	54	107		240		240
5.0	26	62		150		150	15.0	56	111		250		250
5.1	26	62		151		151	16.0	58	115		260		260

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
11030																	
180–200	130–160	60–100	60–80	65–75	65–70	50–60	40–50	20–25	-	-	-	-	20–25	15–20	-	60–70	50–70
11033																	
220–260	160–180	180–250	130–145	100–110	80–100	70–80	60–70	50–60	-	-	-	-	45–55	35–45	20–45	100–145	50–70

Solid-carbide drill reamers | Solid-carbide high-performance drills

11040 - 11041 Solid-carbide drill reamers

DIN 6539 | Z 3 | 150° | DIN 6535 HA

ATORN®

Design
3 cutting edges with straight shank. **Precision H7.**
Tip: up to the drill centre, profile type: three chip flutes with rounded rear edges, core thickness: strengthened, surface: plain.

Applications
For drilling grey cast iron, short-chipping brass, long-chipping aluminium alloys with high silicon content, thermosetting plastics. On modern machines, bores with high dimensional and positional accuracy are achieved.

11040
Quality
Solid carbide, K10/K20.

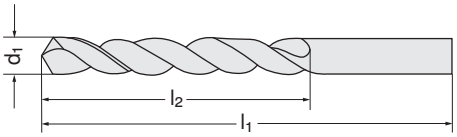
11041
Quality
Solid carbide/TiN-coated.
For increased service life.

VHM K10/K20

VHM TiN | ≤ 1200 N/mm²

11040

11041



d_1 h7 mm	l_2 mm	l_1 mm	Solid carbide 11040	...	Solid carbide/TiN 11041	...
3.0	22	46		130		130
3.2	24	49		132		132
3.3	24	49		133		133
3.5	27	52		135		135
3.8	30	55		138		138
4.0	30	55		140		140
4.2	30	55		142		142
4.5	32	58		145		145
4.8	35	62		147		148
5.0	35	62		150		150
5.2	35	62		152		
5.5	39	66		155		155
5.8	39	66		157		158
6.0	39	66		160		160
6.5	42	70		165		165
6.8	45	74		168		168
7.0	45	74		170		170

d_1 h7 mm	l_2 mm	l_1 mm	Solid carbide 11040	...	Solid carbide/TiN 11041	...
7.5	45	74		175		175
7.8	48	79		177		178
8.0	48	79		180		180
8.5	48	79		185		185
9.0	52	84		190		190
9.5	52	84		195		195
9.8	55	89		197		198
10.0	55	89		200		200
10.2	55	89		202		202
10.5	55	89		205		205
11.0	60	95		210		210
12.0	65	102		220		220
13.0	65	102		230		230
14.0	66	107		240		240
15.0	70	111		250		250
16.0	73	115		260		260

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
11040	130–150	100–120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70–100	-
11041	150–170	120–140	80–100	120–130	110–120	100–110	90–100	80–90	-	-	-	-	-	-	-	-	80–140	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11147 Solid-carbide high-performance drill TiAlNplus HPC

DIN 6537 | HPC | 140° | VHM TiAlN+ | 3xD | Uni

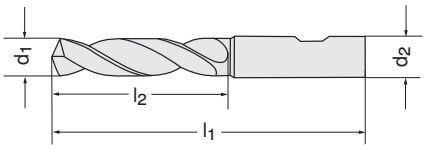
ATORN®

Design
- With offset straight shank in accordance with DIN 6537
- Optimised shank tolerance for fitting in the power chuck and hydraulic expansion chuck
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

NEW

Applications
For HPC drilling up to a strength of 1300 N/mm². Economic drilling in a variety of materials with high cutting values.

Quality
Solid carbide ultra-fine grain TiAlNplus.



DIN 6535 HA — 11147 110-253

DIN 6535 HB — 11147 330-453

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	DIN 6535 HA 11147 ...	DIN 6535 HB 11147 ...
1.0	7	45	4	110	
1.1	7	45	4	111	
1.2	7	45	4	112	
1.3	7	45	4	113	
1.4	7	45	4	114	
1.5	14	55	4	115	
1.6	14	55	4	116	
1.7	14	55	4	117	
1.8	14	55	4	118	
1.9	14	55	4	119	
2.0	20	55	4	120	
2.1	20	55	4	121	
2.2	20	55	4	122	
2.3	20	55	4	123	
2.4	20	55	4	124	
2.5	20	55	4	125	
2.6	20	55	4	126	
2.7	20	55	4	127	
2.8	20	55	4	128	
2.9	20	55	4	129	
3.0	20	62	6	130	330
3.1	20	62	6	131	331
3.2	20	62	6	132	332
3.25	20	62	6	133	333
3.3	20	62	6	134	334
3.4	20	62	6	135	335
3.5	20	62	6	136	336
3.6	20	62	6	137	337
3.7	20	62	6	138	338
3.8	24	66	6	139	339
3.9	24	66	6	140	340
4.0	24	66	6	141	341
4.1	24	66	6	142	342
4.2	24	66	6	143	343
4.3	24	66	6	144	344
4.4	24	66	6	145	345
4.5	24	66	6	146	346
4.6	24	66	6	147	347
4.65	24	66	6	148	348
4.7	24	66	6	149	349
4.8	28	66	6	150	350
4.9	28	66	6	151	351
5.0	28	66	6	152	352
5.1	28	66	6	153	353
5.2	28	66	6	154	354
5.3	28	66	6	155	355
5.4	28	66	6	156	356
5.5	28	66	6	157	357

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	DIN 6535 HA 11147 ...	DIN 6535 HB 11147 ...
5.55	28	66	6	158	358
5.6	28	66	6	159	359
5.65	28	66	6	160	360
5.7	28	66	6	161	361
5.8	28	66	6	162	362
5.9	28	66	6	163	363
6.0	28	66	6	164	364
6.1	34	79	8	165	365
6.2	34	79	8	166	366
6.3	34	79	8	167	367
6.4	34	79	8	168	368
6.5	34	79	8	169	369
6.6	34	79	8	170	370
6.7	34	79	8	171	371
6.8	34	79	8	172	372
6.9	34	79	8	173	373
7.0	34	79	8	174	374
7.1	41	79	8	175	375
7.2	41	79	8	176	376
7.3	41	79	8	177	377
7.4	41	79	8	178	378
7.5	41	79	8	179	379
7.55	41	79	8	180	380
7.6	41	79	8	181	381
7.65	41	79	8	182	382
7.7	41	79	8	183	383
7.8	41	79	8	184	384
7.9	41	79	8	185	385
8.0	41	79	8	186	386
8.1	47	89	10	187	387
8.2	47	89	10	188	388
8.3	47	89	10	189	389
8.4	47	89	10	190	390
8.5	47	89	10	191	391
8.6	47	89	10	192	392
8.7	47	89	10	193	393
8.8	47	89	10	194	394
8.9	47	89	10	195	395
9.0	47	89	10	196	396
9.1	47	89	10	197	397
9.2	47	89	10	198	398
9.3	47	89	10	199	399
9.4	47	89	10	200	400
9.5	47	89	10	201	401
9.6	47	89	10	202	402
9.7	47	89	10	203	403
9.8	47	89	10	204	404
9.9	47	89	10	205	405

Continued

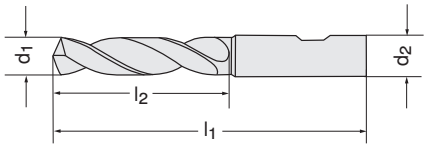
Solid-carbide high-performance drills | Solid-carbide high-performance coolant drills

11147 Solid-carbide high-performance drill TiAlNplus HPC

DIN 6537 | HPC | 140° | VHM TiAlN+ | 3xD | Uni

Continued ▶

NEW



				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11147	...	11147	...
10.0	47	89	10		206		406
10.1	55	102	12		207		407
10.2	55	102	12		208		408
10.3	55	102	12		209		409
10.4	55	102	12		210		410
10.5	55	102	12		211		411
10.6	55	102	12		212		412
10.7	55	102	12		213		413
10.8	55	102	12		214		414
10.9	55	102	12		215		415
11.0	55	102	12		216		416
11.1	55	102	12		217		417
11.2	55	102	12		218		418
11.3	55	102	12		219		419
11.4	55	102	12		220		420
11.5	55	102	12		221		421
11.6	55	102	12		222		422
11.7	55	102	12		223		423
11.8	55	102	12		224		424
11.9	55	102	12		225		425
12.0	55	102	12		226		426
12.2	60	107	14		227		427
12.5	60	107	14		228		428
12.8	60	107	14		229		429

				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11147	...	11147	...
13.0	60	107	14		230		430
13.1	60	107	14		231		431
13.5	60	107	14		232		432
13.8	60	107	14		233		433
14.0	60	107	14		234		434
14.2	65	115	16		235		435
14.4	65	115	16		236		436
14.5	65	115	16		237		437
14.8	65	115	16		238		438
15.0	65	115	16		239		439
15.1	65	115	16		240		440
15.2	65	115	16		241		441
15.5	65	115	16		242		442
15.8	65	115	16		243		443
16.0	65	115	16		244		444
16.5	73	123	18		245		445
17.0	73	123	18		246		446
17.5	73	123	18		247		447
18.0	73	123	18		248		448
18.5	79	131	20		249		449
18.9	79	131	20		250		450
19.0	79	131	20		251		451
19.5	79	131	20		252		452
20.0	79	131	20		253		453

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–500	160–200	120–170	90–120	90–120	80–100	60–80	50–60	40–60	-	-	-	-	30–50	-	-	60–100	30–80

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11148 Solid-carbide high-performance coolant drill TiAlNplus HPC

DIN 6537 | HPC | 140° | VHM TiAlN+ | 3xD | Uni

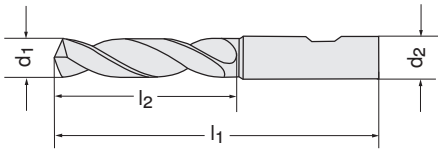
ATORN®

Design
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

NEW

Applications
For HPC drilling up to a strength of 1300 N/mm². Economic drilling in a variety of materials with high cutting values.

Quality
Solid carbide ultra-fine grain TiAlNplus.



DIN 6535 HA

11148 110-256

DIN 6535 HB

11148 330-456

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	DIN 6535 HA 11148 ...	DIN 6535 HB 11148 ...
1.0	7	45	4	110	
1.1	7	45	4	111	
1.2	7	45	4	112	
1.3	7	45	4	113	
1.4	7	45	4	114	
1.5	14	55	4	115	
1.6	14	55	4	116	
1.7	14	55	4	117	
1.8	14	55	4	118	
1.9	14	55	4	119	
2.0	20	55	4	120	
2.1	20	55	4	121	
2.2	20	55	4	122	
2.3	20	55	4	123	
2.4	20	55	4	124	
2.5	20	55	4	125	
2.6	20	55	4	126	
2.7	20	55	4	127	
2.8	20	55	4	128	
2.9	20	55	4	129	
3.0	20	62	6	130	330
3.1	20	62	6	131	331
3.2	20	62	6	132	332
3.25	20	62	6	133	333
3.3	20	62	6	134	334
3.4	20	62	6	135	335
3.5	20	62	6	136	336
3.6	20	62	6	137	337
3.7	20	62	6	138	338
3.8	24	66	6	139	339
3.9	24	66	6	140	340
4.0	24	66	6	141	341
4.1	24	66	6	142	342
4.2	24	66	6	143	343
4.3	24	66	6	144	344
4.4	24	66	6	145	345
4.5	24	66	6	146	346
4.6	24	66	6	147	347
4.65	24	66	6	148	348
4.7	24	66	6	149	349
4.8	28	66	6	150	350
4.9	28	66	6	151	351
5.0	28	66	6	152	352
5.1	28	66	6	153	353
5.2	28	66	6	154	354
5.3	28	66	6	155	355
5.4	28	66	6	156	356
5.5	28	66	6	157	357

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	DIN 6535 HA 11148 ...	DIN 6535 HB 11148 ...
5.55	28	66	6	158	358
5.6	28	66	6	159	359
5.65	28	66	6	160	360
5.7	28	66	6	161	361
5.8	28	66	6	162	362
5.9	28	66	6	163	363
6.0	28	66	6	164	364
6.1	34	79	8	165	365
6.2	34	79	8	166	366
6.3	34	79	8	167	367
6.4	34	79	8	168	368
6.5	34	79	8	169	369
6.6	34	79	8	170	370
6.7	34	79	8	171	371
6.8	34	79	8	172	372
6.9	34	79	8	173	373
7.0	34	79	8	174	374
7.1	41	79	8	175	375
7.2	41	79	8	176	376
7.3	41	79	8	177	377
7.4	41	79	8	178	378
7.5	41	79	8	179	379
7.55	41	79	8	180	380
7.6	41	79	8	181	381
7.65	41	79	8	182	382
7.7	41	79	8	183	383
7.8	41	79	8	184	384
7.9	41	79	8	185	385
8.0	41	79	8	186	386
8.1	47	89	10	187	387
8.2	47	89	10	188	388
8.3	47	89	10	189	389
8.4	47	89	10	190	390
8.5	47	89	10	191	391
8.6	47	89	10	192	392
8.7	47	89	10	193	393
8.8	47	89	10	194	394
8.9	47	89	10	195	395
9.0	47	89	10	196	396
9.1	47	89	10	197	397
9.2	47	89	10	198	398
9.3	47	89	10	199	399
9.4	47	89	10	200	400
9.5	47	89	10	201	401
9.6	47	89	10	202	402
9.7	47	89	10	203	403
9.8	47	89	10	204	404
9.9	47	89	10	205	405

Continued

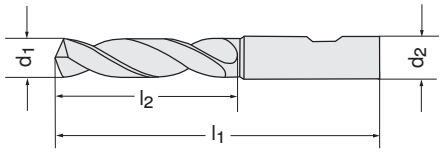
Solid-carbide high-performance coolant drills | Solid-carbide HPC drills

11148 Solid-carbide high-performance coolant drill TiAlNplus HPC

Continued

DIN 6537 | HPC | 140° | VHM TiAlN+ | 3xD | Uni

NEW



d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	DIN 6535 HA 11148	...	DIN 6535 HB 11148	...
10.0	47	89	10		206		406
10.1	55	102	12		207		407
10.2	55	102	12		208		408
10.3	55	102	12		209		409
10.4	55	102	12		210		410
10.5	55	102	12		211		411
10.6	55	102	12		212		412
10.7	55	102	12		213		413
10.8	55	102	12		214		414
10.9	55	102	12		215		415
11.0	55	102	12		216		416
11.1	55	102	12		217		417
11.2	55	102	12		218		418
11.3	55	102	12		219		419
11.4	55	102	12		220		420
11.5	55	102	12		221		421
11.6	55	102	12		222		422
11.7	55	102	12		223		423
11.8	55	102	12		224		424
11.9	55	102	12		225		425
12.0	55	102	12		226		426
12.2	60	107	14		227		427
12.3	60	107	14		228		428
12.5	60	107	14		229		429
12.7	60	107	14		230		430
12.8	60	107	14		231		431

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	DIN 6535 HA 11148	...	DIN 6535 HB 11148	...
12.9	60	107	14		232		432
13.0	60	107	14		233		433
13.5	60	107	14		234		434
13.8	60	107	14		235		435
14.0	60	107	14		236		436
14.2	65	115	16		237		437
14.4	65	115	16		238		438
14.5	65	115	16		239		439
14.8	65	115	16		240		440
15.0	65	115	16		241		441
15.1	65	115	16		242		442
15.2	65	115	16		243		443
15.5	65	115	16		244		444
15.8	65	115	16		245		445
16.0	65	115	16		246		446
16.5	73	123	18		247		447
17.0	73	123	18		248		448
17.5	73	123	18		249		449
18.0	73	123	18		250		450
18.5	79	131	20		251		451
18.9	79	131	20		252		452
19.0	79	131	20		253		453
19.3	79	131	20		254		454
19.5	79	131	20		255		455
20.0	79	131	20		256		456

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–300	180–220	100–150	100–140	100–130	100–120	70–110	80–100	35–85	-	-	-	-	40–60	35–50	-	40–100	30–100

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

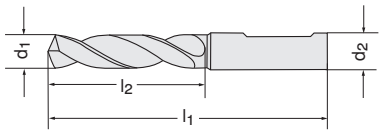
11061 - 11062 Solid-carbide HPC drill Ultra-M

HPC | 140° | VHM TiAlN Ultra-M | 3xD | Toleranz m 7 | ≤ 850 N/mm² | ≤ 850 N/mm²

ATORN®

Design
- Specially developed cemented carbide for processing stainless steels
- Wear-resistant coating
- Cutting geometry for stainless steels

Advantage:
- Very high feed rates can be realised
- Optimal heat dissipation



DIN 6535 HA

DIN 6535 HE

11061

11062

				DIN 6535 HA		DIN 6535 HE	
d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11061	...	11062	...
3.0	20	62	6		330		330
3.1	20	62	6		331		331
3.2	20	62	6		332		332
3.25	20	62	6		333		333
3.3	20	62	6		334		334
3.4	20	62	6		335		335
3.5	20	62	6		336		336
3.6	20	62	6		337		337
3.7	20	62	6		338		338
3.8	24	66	6		339		339
3.9	24	66	6		340		340
4.0	24	66	6		341		341
4.1	24	66	6		342		342
4.2	24	66	6		343		343
4.3	24	66	6		344		344
4.4	24	66	6		345		345
4.5	24	66	6		346		346
4.6	24	66	6		347		347
4.65	24	66	6		348		348
4.7	24	66	6		349		349
4.8	28	66	6		350		350
4.9	28	66	6		351		351
5.0	28	66	6		352		352
5.1	28	66	6		353		353
5.2	28	66	6		354		354
5.3	28	66	6		355		355
5.4	28	66	6		356		356
5.5	28	66	6		357		357
5.55	28	66	6		358		358
5.6	28	66	6		359		359
5.7	28	66	6		360		360
5.8	28	66	6		361		361
5.9	28	66	6		362		362
6.0	28	66	6		363		363
6.1	34	79	8		364		364
6.2	34	79	8		365		365
6.3	34	79	8		366		366
6.4	34	79	8		367		367
6.5	34	79	8		368		368
6.6	34	79	8		369		369
6.7	34	79	8		370		370
6.8	34	79	8		371		371
6.9	34	79	8		372		372
7.0	34	79	8		373		373
7.1	41	79	8		374		374
7.2	41	79	8		375		375
7.3	41	79	8		376		376
7.4	41	79	8		377		377
7.5	41	79	8		378		378
7.6	41	79	8		379		379
7.7	41	79	8		380		380
7.8	41	79	8		381		381
7.9	41	79	8		382		382

				DIN 6535 HA		DIN 6535 HE	
d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11061	...	11062	...
8.0	41	79	8		383		383
8.1	47	89	10		384		384
8.2	47	89	10		385		385
8.3	47	89	10		386		386
8.4	47	89	10		387		387
8.5	47	89	10		388		388
8.6	47	89	10		389		389
8.7	47	89	10		390		390
8.8	47	89	10		391		391
8.9	47	89	10		392		392
9.0	47	89	10		393		393
9.1	47	89	10		394		394
9.2	47	89	10		395		395
9.25	47	89	10		396		396
9.3	47	89	10		397		397
9.4	47	89	10		398		398
9.5	47	89	10		399		399
9.6	47	89	10		400		400
9.7	47	89	10		401		401
9.8	47	89	10		402		402
9.9	47	89	10		403		403
10.0	47	89	10		404		404
10.1	55	102	12		405		405
10.2	55	102	12		406		406
10.3	55	102	12		407		407
10.4	55	102	12		408		408
10.5	55	102	12		409		409
10.6	55	102	12		410		410
10.7	55	102	12		411		411
10.8	55	102	12		412		412
10.9	55	102	12		413		413
11.0	55	102	12		414		414
11.1	55	102	12		415		415
11.2	55	102	12		416		416
11.3	55	102	12		417		417
11.4	55	102	12		418		418
11.5	55	102	12		419		419
11.6	55	102	12		420		420
11.7	55	102	12		421		421
11.8	55	102	12		422		422
11.9	55	102	12		423		423
12.0	55	102	12		424		424
12.5	60	107	14		425		425
12.7	60	107	14		426		426
13.0	60	107	14		427		427
13.5	60	107	14		428		428
14.0	60	107	14		429		429
14.5	65	115	16		430		430
15.0	65	115	16		431		431
15.5	65	115	16		432		432
16.0	65	115	16		433		433
16.5	73	123	18		434		434
16.9	73	123	18		435		435

Continued ▶

Solid-carbide HPC drills | Solid-carbide high-performance drills

11061 - 11062 Solid-carbide HPC drill Ultra-M

HPC | 140° | VHM TiAlN Ultra-M | 3xD | Toleranz m 7 | ≤ 850 N/mm² | ≤ 850 N/mm²

Continued

d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	DIN 6535 HA 11061 ...	DIN 6535 HE 11062 ...
17.0	73	123	18	436	436
17.5	73	123	18	437	437
18.0	73	123	18	438	438
18.5	79	131	20	439	439
18.9	79	131	20	440	440
19.0	79	131	20	441	441
19.5	79	131	20	442	442
20.0	79	131	20	443	443

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	60–80	50–60	30–35	-	-

11163 Solid-carbide high-performance drill TiAlNplus HPC

DIN 6537 | HPC | 140° | VHM TiAlN+ | 5xD | Uni

ATORN®

Design
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

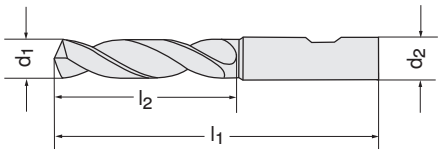
NEW

Applications
For HPC drilling up to a strength of 1300 N/mm². Economic drilling in a variety of materials with high cutting values.

Quality
Solid carbide ultra-fine grain TiAlNplus.

DIN 6535 HA — 11163 110-250

DIN 6535 HB — 11163 330-453



d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	DIN 6535 HA 11163 ...	DIN 6535 HB 11163 ...
1.0	8	55	4	110	
1.1	12	55	4	111	
1.2	12	55	4	112	
1.3	12	55	4	113	
1.4	12	55	4	114	
1.5	12	55	4	115	
1.6	16	55	4	116	
1.7	16	55	4	117	
1.8	16	55	4	118	
1.9	16	55	4	119	
2.0	21	57	4	120	
2.05	21	57	4	121	
2.1	21	57	4	122	
2.2	21	57	4	123	
2.3	21	57	4	124	
2.4	21	57	4	125	
2.5	21	57	4	126	
3.0	28	66	6	127	330
3.1	28	66	6	128	331
3.2	28	66	6	129	332
3.25	28	66	6	130	333
3.3	28	66	6	131	334
3.4	28	66	6	132	335
3.5	28	66	6	133	336
3.6	28	66	6	134	337
3.7	28	66	6	135	338
3.8	36	74	6	136	339
3.9	36	74	6	137	340
4.0	36	74	6	138	341
4.1	36	74	6	139	342
4.2	36	74	6	140	343
4.3	36	74	6	141	344
4.4	36	74	6	142	345
4.5	36	74	6	143	346
4.6	36	74	6	144	347
4.65	36	74	6	145	348
4.7	36	74	6	146	349
4.8	44	82	6	147	350
4.9	44	82	6	148	351
5.0	44	82	6	149	352
5.1	44	82	6	150	353
5.2	44	82	6	151	354
5.3	44	82	6	152	355
5.4	44	82	6	153	356
5.5	44	82	6	154	357
5.55	44	82	6	155	358
5.6	44	82	6	156	359
5.65	44	82	6	157	360
5.7	44	82	6	158	361
5.8	44	82	6	159	362
5.9	44	82	6	160	363
6.0	44	82	6	161	364
6.1	53	91	8	162	365
6.2	53	91	8	163	366
6.3	53	91	8	164	367
6.4	53	91	8	165	368
6.5	53	91	8	166	369
6.6	53	91	8	167	370
6.7	53	91	8	168	371
6.8	53	91	8	169	372
6.9	53	91	8	170	373
7.0	53	91	8	171	374
7.1	53	91	8	172	375
7.2	53	91	8	173	376
7.3	53	91	8	174	377
7.4	53	91	8	175	378

Continued

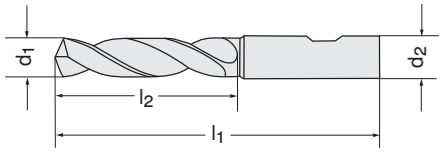
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11163 Solid-carbide high-performance drill TiAlNplus HPC

DIN 6537 | HPC | 140° | VHM TiAlN+ | 5xD | Uni

Continued

NEW



				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11163	...	11163	...
7.5	53	91	8		176		379
7.55	53	91	8		177		380
7.6	53	91	8		178		381
7.65	53	91	8		179		382
7.7	53	91	8		180		383
7.8	53	91	8		181		384
7.9	53	91	8		182		385
8.0	53	91	8		183		386
8.1	61	103	10		184		387
8.2	61	103	10		185		388
8.3	61	103	10		186		389
8.4	61	103	10		187		390
8.5	61	103	10		188		391
8.6	61	103	10		189		392
8.7	61	103	10		190		393
8.8	61	103	10		191		394
8.9	61	103	10		192		395
9.0	61	103	10		193		396
9.1	61	103	10		194		397
9.2	61	103	10		195		398
9.3	61	103	10		196		399
9.4	61	103	10		197		400
9.5	61	103	10		198		401
9.6	61	103	10		199		402
9.7	61	103	10		200		403
9.8	61	103	10		201		404
9.9	61	103	10		202		405
10.0	61	103	10		203		406
10.1	71	118	12		204		407
10.2	71	118	12		205		408
10.3	71	118	12		206		409
10.4	71	118	12		207		410
10.5	71	118	12		208		411
10.6	71	118	12		209		412
10.7	71	118	12		210		413
10.8	71	118	12		211		414
10.9	71	118	12		212		415
11.0	71	118	12		213		416

				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11163	...	11163	...
11.1	71	118	12		214		417
11.2	71	118	12		215		418
11.3	71	118	12		216		419
11.4	71	118	12		217		420
11.5	71	118	12		218		421
11.6	71	118	12		219		422
11.7	71	118	12		220		423
11.8	71	118	12		221		424
11.9	71	118	12		222		425
12.0	71	118	12		223		426
12.1	77	124	14		224		427
12.2	77	124	14		225		428
12.5	77	124	14		226		429
12.8	77	124	14		227		430
13.0	77	124	14		228		431
13.2	77	124	14		229		432
13.5	77	124	14		230		433
13.8	77	124	14		231		434
14.0	77	124	14		232		435
14.2	83	133	16		233		436
14.4	83	133	16		234		437
14.5	83	133	16		235		438
14.8	83	133	16		236		439
15.0	83	133	16		237		440
15.2	83	133	16		238		441
15.5	83	133	16		239		442
15.8	83	133	16		240		443
16.0	83	133	16		241		444
16.5	93	143	18		242		445
17.0	93	143	18		243		446
17.5	93	143	18		244		447
18.0	93	143	18		245		448
18.5	101	153	20		246		449
18.9	101	153	20		247		450
19.0	101	153	20		248		451
19.5	101	153	20		249		452
20.0	101	153	20		250		453

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–500	160–200	120–170	90–120	90–120	80–100	60–80	50–60	40–60	-	-	-	-	30–50	-	-	60–100	30–80

( ) = Items with prices in brackets partly available from stock.

Solid-carbide high-performance coolant drills | Solid-carbide HPC drills

11164 Solid-carbide high-performance coolant drill TiAlNplus HPC

DIN 6537 | HPC | 140° | VHM TiAlN+ | 5xD | Uni

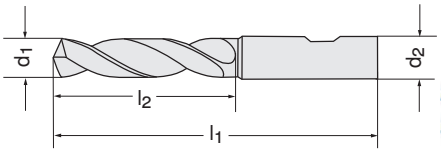
ATORN®

Design
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

NEW

Applications
For HPC drilling up to a strength of 1300 N/mm². Economic drilling in a variety of materials with high cutting values.

Quality
Solid carbide ultra-fine grain TiAlNplus.



DIN 6535 HA

11164 110-270

DIN 6535 HB

11164 330-470

				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11164	...	11164	...
1.0	8	55	4		110		
1.1	12	55	4		111		
1.2	12	55	4		112		
1.3	12	55	4		113		
1.4	12	55	4		114		
1.5	12	55	4		115		
1.6	16	55	4		116		
1.7	16	55	4		117		
1.8	16	55	4		118		
1.9	16	55	4		119		
2.0	21	57	4		120		
2.1	21	57	4		121		
2.2	21	57	4		122		
2.3	21	57	4		123		
2.4	21	57	4		124		
2.5	21	57	4		125		
2.6	21	57	4		126		
2.7	21	57	4		127		
2.8	21	57	4		128		
2.9	21	57	4		129		
3.0	28	66	6		130		330
3.1	28	66	6		131		331
3.2	28	66	6		132		332
3.25	28	66	6		133		333
3.3	28	66	6		134		334
3.4	28	66	6		135		335
3.5	28	66	6		136		336
3.6	28	66	6		137		337
3.7	28	66	6		138		338
3.8	36	74	6		139		339
3.85	36	74	6		140		340
3.9	36	74	6		141		341
4.0	36	74	6		142		342
4.1	36	74	6		143		343
4.2	36	74	6		144		344
4.3	36	74	6		145		345
4.4	36	74	6		146		346
4.5	36	74	6		147		347
4.6	36	74	6		148		348
4.65	36	74	6		149		349
4.7	36	74	6		150		350
4.8	44	82	6		151		351
4.9	44	82	6		152		352
5.0	44	82	6		153		353
5.1	44	82	6		154		354
5.2	44	82	6		155		355
5.3	44	82	6		156		356
5.4	44	82	6		157		357
5.5	44	82	6		158		358

				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11164	...	11164	...
5.55	44	82	6		159		359
5.6	44	82	6		160		360
5.65	44	82	6		161		361
5.7	44	82	6		162		362
5.8	44	82	6		163		363
5.9	44	82	6		164		364
6.0	44	82	6		165		365
6.1	53	91	8		166		366
6.2	53	91	8		167		367
6.3	53	91	8		168		368
6.4	53	91	8		169		369
6.5	53	91	8		170		370
6.6	53	91	8		171		371
6.7	53	91	8		172		372
6.8	53	91	8		173		373
6.9	53	91	8		174		374
7.0	53	91	8		175		375
7.1	53	91	8		176		376
7.2	53	91	8		177		377
7.3	53	91	8		178		378
7.4	53	91	8		179		379
7.5	53	91	8		180		380
7.55	53	91	8		181		381
7.6	53	91	8		182		382
7.65	53	91	8		183		383
7.7	53	91	8		184		384
7.8	53	91	8		185		385
7.9	53	91	8		186		386
8.0	53	91	8		187		387
8.1	61	103	10		188		388
8.2	61	103	10		189		389
8.3	61	103	10		190		390
8.4	61	103	10		191		391
8.5	61	103	10		192		392
8.6	61	103	10		193		393
8.7	61	103	10		194		394
8.8	61	103	10		195		395
8.9	61	103	10		196		396
9.0	61	103	10		197		397
9.1	61	103	10		198		398
9.2	61	103	10		199		399
9.3	61	103	10		200		400
9.4	61	103	10		201		401
9.5	61	103	10		202		402
9.55	61	103	10		203		403
9.6	61	103	10		204		404
9.7	61	103	10		205		405
9.8	61	103	10		206		406
9.9	61	103	10		207		407

Continued

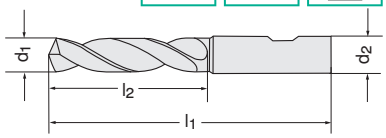
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11164 Solid-carbide high-performance coolant drill TiAlNplus HPC

DIN 6537 | HPC | 140° | VHM TiAlN+ | 5xD | Uni

Continued

NEW



				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11164	...	11164	...
10.0	61	103	10		208		408
10.1	71	118	12		209		409
10.2	71	118	12		210		410
10.3	71	118	12		211		411
10.4	71	118	12		212		412
10.5	71	118	12		213		413
10.6	71	118	12		214		414
10.7	71	118	12		215		415
10.8	71	118	12		216		416
10.9	71	118	12		217		417
11.0	71	118	12		218		418
11.1	71	118	12		219		419
11.2	71	118	12		220		420
11.3	71	118	12		221		421
11.4	71	118	12		222		422
11.5	71	118	12		223		423
11.6	71	118	12		224		424
11.7	71	118	12		225		425
11.8	71	118	12		226		426
11.9	71	118	12		227		427
12.0	71	118	12		228		428
12.1	77	124	14		229		429
12.2	77	124	14		230		430
12.4	77	124	14		231		431
12.5	77	124	14		232		432
12.6	77	124	14		233		433
12.8	77	124	14		234		434
13.0	77	124	14		235		435
13.1	77	124	14		236		436
13.2	77	124	14		237		437
13.3	77	124	14		238		438
13.5	77	124	14		239		439

				DIN 6535 HA		DIN 6535 HB	
d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11164	...	11164	...
13.8	77	124	14		240		440
14.0	77	124	14		241		441
14.2	83	133	16		242		442
14.3	83	133	16		243		443
14.4	83	133	16		244		444
14.5	83	133	16		245		445
14.8	83	133	16		246		446
15.0	83	133	16		247		447
15.1	83	133	16		248		448
15.2	83	133	16		249		449
15.3	83	133	16		250		450
15.3	83	133	16		251		451
15.5	83	133	16		252		452
15.8	83	133	16		253		453
16.0	83	133	16		254		454
16.2	93	143	18		255		455
16.3	93	143	18		256		456
16.5	93	143	18		257		457
16.8	93	143	18		258		458
17.0	93	143	18		259		459
17.3	93	143	18		260		460
17.5	93	143	18		261		461
18.0	93	143	18		262		462
18.5	101	153	20		263		463
18.9	101	153	20		264		464
19.0	101	153	20		265		465
19.2	101	153	20		266		466
19.3	101	153	20		267		467
19.5	101	153	20		268		468
19.7	101	153	20		269		469
20.0	101	153	20		270		470

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N		St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–300	180–220	100–150	100–140	100–130	100–120	70–110	80–100	35–85	-	-	-	-	40–60	35–50	-	40–100	30–100

11073 - 11074 Solid-carbide HPC drill Ultra-M

HPC | 140° | VHM TiAlN Ultra-M | 5xD | Toleranz m 7 | ≤ 850 N/mm² | ≤ 850 N/mm²

ATORN®

Design
- Specially developed cemented carbide for processing stainless steels
- Wear-resistant coating
- Cutting geometry for stainless steels

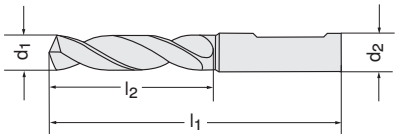
Advantage:
- Very high feed rates can be realised
- Optimal heat dissipation

DIN 6535 HA

11073

DIN 6535 HE

11074



				DIN 6535 HA		DIN 6535 HE	
d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11073	...	11074	...
3.0	28	66	6		330		330
3.1	28	66	6		331		331
3.2	28	66	6		332		332
3.25	28	66	6		333		333

				DIN 6535 HA		DIN 6535 HE	
d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11073	...	11074	...
3.3	28	66	6		334		334
3.4	28	66	6		335		335
3.5	28	66	6		336		336
3.6	28	66	6		337		337

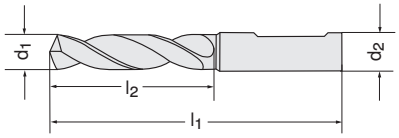
Continued

Solid-carbide HPC drills | Solid-carbide drills

11073 - 11074 Solid-carbide HPC drill Ultra-M

HPC | 140° | VHM TiAlN Ultra-M | 5xD | Toleranz m 7 | ≤ 850 N/mm² | ≤ 850 N/mm²

Continued



				DIN 6535 HA		DIN 6535 HE	
d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11073	...	11074	...
3.7	28	66	6		338		338
3.8	36	74	6		339		339
3.9	36	74	6		340		340
4.0	36	74	6		341		341
4.1	36	74	6		342		342
4.2	36	74	6		343		343
4.3	36	74	6		344		344
4.4	36	74	6		345		345
4.5	36	74	6		346		346
4.6	36	74	6		347		347
4.65	36	74	6		348		348
4.7	36	74	6		349		349
4.8	44	82	6		350		350
4.9	44	82	6		351		351
5.0	44	82	6		352		352
5.1	44	82	6		353		353
5.2	44	82	6		354		354
5.3	44	82	6		355		355
5.4	44	82	6		356		356
5.5	44	82	6		357		357
5.55	44	82	6		358		358
5.6	44	82	6		359		359
5.7	44	82	6		360		360
5.8	44	82	6		361		361
5.9	44	82	6		362		362
6.0	44	82	6		363		363
6.1	53	91	8		364		364
6.2	53	91	8		365		365
6.3	53	91	8		366		366
6.4	53	91	8		367		367
6.5	53	91	8		368		368
6.6	53	91	8		369		369
6.7	53	91	8		370		370
6.8	53	91	8		371		371
6.9	53	91	8		372		372
7.0	53	91	8		373		373
7.1	53	91	8		374		374
7.2	53	91	8		375		375
7.3	53	91	8		376		376
7.4	53	91	8		377		377
7.5	53	91	8		378		378
7.6	53	91	8		379		379
7.7	53	91	8		380		380
7.8	53	91	8		381		381
7.9	53	91	8		382		382
8.0	53	91	8		383		383
8.1	61	103	10		384		384
8.2	61	103	10		385		385
8.3	61	103	10		386		386
8.4	61	103	10		387		387
8.5	61	103	10		388		388
8.6	61	103	10		389		389
8.7	61	103	10		390		390
8.8	61	103	10		391		391

				DIN 6535 HA		DIN 6535 HE	
d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11073	...	11074	...
8.9	61	103	10		392		392
9.0	61	103	10		393		393
9.1	61	103	10		394		394
9.2	61	103	10		395		395
9.3	61	103	10		396		396
9.4	61	103	10		397		397
9.5	61	103	10		398		398
9.6	61	103	10		399		399
9.7	61	103	10		400		400
9.8	61	103	10		401		401
9.9	61	103	10		402		402
10.0	61	103	10		403		403
10.1	71	118	12		404		404
10.2	71	118	12		405		405
10.3	71	118	12		406		406
10.4	71	118	12		407		407
10.5	71	118	12		408		408
10.6	71	118	12		409		409
10.7	71	118	12		410		410
10.8	71	118	12		411		411
10.9	71	118	12		412		412
11.0	71	118	12		413		413
11.1	71	118	12		414		414
11.2	71	118	12		415		415
11.3	71	118	12		416		416
11.4	71	118	12		417		417
11.5	71	118	12		418		418
11.6	71	118	12		419		419
11.7	71	118	12		420		420
11.8	71	118	12		421		421
11.9	71	118	12		422		422
12.0	71	118	12		423		423
12.2	77	124	14		424		424
12.5	77	124	14		425		425
12.7	77	124	14		426		426
13.0	77	124	14		427		427
13.5	77	124	14		428		428
14.0	77	124	14		429		429
14.2	83	133	16		430		430
14.5	83	133	16		431		431
15.0	83	133	16		432		432
15.5	83	133	16		433		433
16.0	83	133	16		434		434
16.5	93	143	18		435		435
16.9	93	143	18		436		436
17.0	93	143	18		437		437
17.5	93	143	18		438		438
18.0	93	143	18		439		439
18.5	101	153	20		440		440
18.9	101	153	20		441		441
19.0	101	153	20		442		442
19.5	101	153	20		443		443
20.0	101	153	20		444		444

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	60–80	50–60	30–35	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11100 Solid-carbide drill 180°

Norm | 180° | DIN 6535 HA | VHM TiAlN | 5xD | Toleranz m7 | Uni

ATORN®

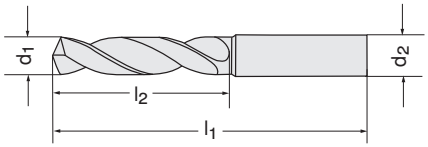
Design
- Special grinding for producing **drill holes with 180° base of bore hole**
- Low radial forces even when spot drilling surfaces inclined up to 15°
- Four drill heels for high alignment accuracy

Advantage:
- 180° tip angle allows **drilling and counterboring in a single action**

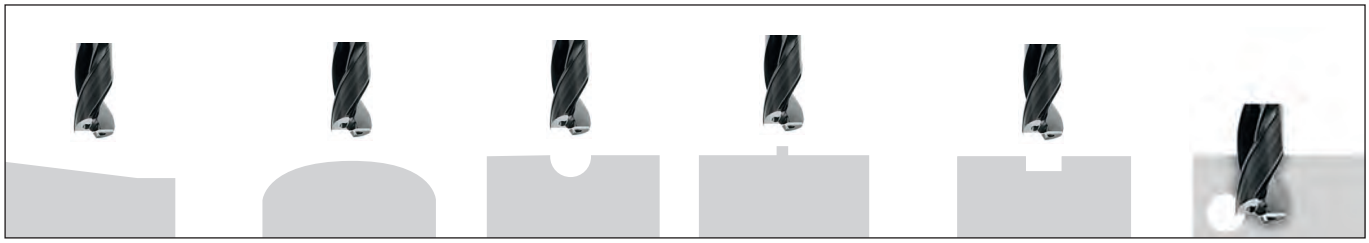
Note:
For process-reliable use of the drill, one of the following is absolutely necessary:
- *Creating **a pilot hole 1xD with pilot drill** art. no. 11078 or*
- *Reducing **the feed value f mm/U to drilling depth 0.5xD***

(In the case of a 0° angle of the workpiece surface: correction factor f mm/U x 0.4, up to a maximum of 15° angle of the workpiece surface: correction factor f mm/U x 0.25, thereafter the normal feed value can be used.

11100



Example applications



DIN 6535 HA

d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11100	...
3.0	28	66	6	107	NEW
3.1	28	66	6	108	NEW
3.2	28	66	6	109	NEW
3.3	28	66	6	110	NEW
3.4	28	66	6	111	NEW
3.5	28	66	6	112	NEW
3.6	28	66	6	113	NEW
3.7	28	66	6	114	NEW
3.8	36	74	6	115	NEW
3.9	36	74	6	116	NEW
4.0	36	74	6	117	NEW
4.1	36	74	6	118	NEW
4.2	36	74	6	119	NEW
4.3	36	74	6	120	NEW
4.4	36	74	6	121	NEW
4.5	36	74	6	122	NEW
4.6	36	74	6	123	NEW
4.65	36	74	6	124	NEW
4.7	36	74	6	125	NEW
4.8	44	82	6	126	NEW
4.9	44	82	6	127	NEW
5.0	44	82	6	128	NEW
5.1	44	82	6	129	NEW
5.2	44	82	6	130	NEW
5.3	44	82	6	131	NEW
5.4	44	82	6	132	NEW
5.5	44	82	6	133	NEW
5.55	44	82	6	134	NEW
5.6	44	82	6	135	NEW
5.7	44	82	6	136	NEW
5.8	44	82	6	137	NEW
5.9	44	82	6	138	NEW
6.0	44	82	6	139	NEW
6.1	53	91	8	140	NEW
6.2	53	91	8	141	NEW
6.3	53	91	8	142	NEW
6.4	53	91	8	143	NEW
6.5	53	91	8	144	NEW
6.6	53	91	8	145	NEW

DIN 6535 HA

d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11100	...
6.7	53	91	8	146	NEW
6.8	53	91	8	147	NEW
6.9	53	91	8	148	NEW
7.0	53	91	8	149	NEW
7.1	53	91	8	150	NEW
7.2	53	91	8	151	NEW
7.3	53	91	8	152	NEW
7.4	53	91	8	153	NEW
7.5	53	91	8	154	NEW
7.6	53	91	8	155	NEW
7.7	53	91	8	156	NEW
7.8	53	91	8	157	NEW
7.9	53	91	8	158	NEW
8.0	61	103	10	101	
8.1	61	103	10	159	NEW
8.2	61	103	10	160	NEW
8.3	61	103	10	161	NEW
8.4	61	103	10	162	NEW
8.5	61	103	10	163	NEW
8.6	61	103	10	164	NEW
8.7	61	103	10	165	NEW
8.8	61	103	10	166	NEW
8.9	61	103	10	167	NEW
9.0	61	103	10	217	NEW
9.1	61	103	10	168	NEW
9.2	61	103	10	169	NEW
9.3	61	103	10	170	NEW
9.4	61	103	10	171	NEW
9.5	61	103	10	172	NEW
9.6	61	103	10	173	NEW
9.7	61	103	10	174	NEW
9.8	61	103	10	175	NEW
9.9	61	103	10	176	NEW
10.0	61	103	10	102	
10.1	69	116	12	177	NEW
10.2	69	116	12	178	NEW
10.3	69	116	12	179	NEW
10.4	69	116	12	180	NEW
10.5	69	116	12	181	NEW

DIN 6535 HA

d_1 m7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11100	...
10.6	69	116	12	182	NEW
10.7	69	116	12	183	NEW
10.8	69	116	12	184	NEW
10.9	69	116	12	185	NEW
11.0	69	116	12	103	
11.1	69	116	12	186	NEW
11.2	69	116	12	187	NEW
11.3	69	116	12	188	NEW
11.4	69	116	12	189	NEW
11.5	69	116	12	190	NEW
11.6	69	116	12	191	NEW
11.7	69	116	12	192	NEW
11.8	69	116	12	193	NEW
11.9	69	116	12	194	NEW
12.0	69	116	12	195	NEW
12.5	75	122	14	196	NEW
12.8	75	122	14	197	NEW
13.0	75	122	14	198	NEW
13.5	75	122	14	199	NEW
13.8	75	122	14	200	NEW
14.0	75	122	14	201	NEW
14.5	81	131	16	202	NEW
14.8	81	131	16	203	NEW
15.0	81	131	16	104	
15.5	81	131	16	204	NEW
15.8	81	131	16	205	NEW
16.0	81	131	16	206	NEW
16.5	91	141	18	207	NEW
16.8	91	141	18	208	NEW
17.0	91	141	18	209	NEW
17.5	91	141	18	210	NEW
17.8	91	141	18	211	NEW
18.0	91	141	18	105	
18.5	99	151	20	212	NEW
18.8	99	151	20	213	NEW
19.0	99	151	20	214	NEW
19.5	99	151	20	215	NEW
19.8	99	151	20	216	NEW
20.0	99	151	20	106	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140–180	120–140	100–120	100–115	90–100	75–90	60–75	40–60	35–40	-	-	-	-	30–40	25–30	25–35	80–90	-

Solid-carbide flat drills

11101 Solid-carbide flat drill AQUA DRILL EX Flat

180° | DIN 6535 HA | 2xD | VHM | AQ | ≈ 20° | Uni

11101

NACHI

Design
- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges

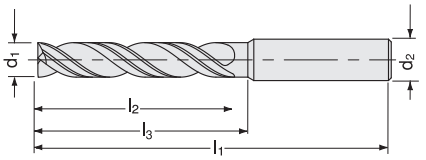
Applications
For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool.
Suitable for cross-drilled holes. Drilling with reduced burr.

Quality
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating).

NEW

Note:
When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11101	...
0.20	0.66	0.98	47	3		002
0.25	0.82	1.17	47	3		003
0.30	0.99	1.36	47	3		004
0.35	1.16	1.46	47	3		005
0.40	1.32	1.65	47	3		006
0.45	1.48	1.84	47	3		007
0.50	1.65	2.03	47	3		008
0.55	1.81	2.13	47	3		009
0.60	1.98	2.32	47	3		010
0.65	2.14	2.51	47	3		011
0.70	2.31	2.71	47	3		012
0.75	2.47	2.8	47	3		013
0.80	2.64	2.99	47	3		014
0.85	2.8	3.19	47	3		015
0.90	2.97	3.28	47	3		016
0.95	3.13	3.47	47	3		017
1.0	3.3	3.6	47	3		018
1.1	3.5	3.9	47	3		019
1.2	3.9	4.2	47	3		020
1.3	4.2	4.5	47	3		021
1.4	4.6	4.9	47	3		022
1.5	4.9	5.2	47	3		023
1.6	5.2	5.5	47	3		024
1.7	5.5	5.8	47	3		025
1.8	5.8	6.1	47	3		026
1.9	6.2	6.5	47	3		027
2.0	9	9.8	50	4		028
2.1	11	11.4	50	4		029
2.2	11	11.4	50	4		030
2.3	11	11.5	50	4		031
2.4	12	12.6	50	4		032
2.5	12	12.7	50	4		033
2.6	12	12.8	50	4		034
2.7	14	14.9	50	4		035
2.8	14	15.0	50	4		036
2.9	14	15.0	50	4		037
3.0	14	14.4	50	6		038
3.1	15	15.5	50	6		039
3.2	15	15.6	50	6		040
3.3	15	15.7	50	6		041

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11101	...
3.4	16	16.2	50	6		042
3.5	16	16.3	50	6		043
3.6	16	16.4	50	6		044
3.7	18	18.0	50	6		045
3.8	18	18.1	50	6		046
3.9	18	18.2	50	6		047
4.0	18	18.3	50	6		048
4.1	19	20.4	60	6		049
4.2	19	20.4	60	6		050
4.3	19	20.5	60	6		051
4.4	21	22.6	60	6		052
4.5	21	22.7	60	6		053
4.6	21	22.8	60	6		054
4.7	22	22.9	60	6		055
4.8	22	23.0	60	6		056
4.9	22	23.0	60	6		057
5.0	23	23.1	60	6		058
5.1	24	26.2	60	6		059
5.2	24	26.3	60	6		060
5.3	24	26.4	60	6		061
5.4	25	27.5	60	6		062
5.5	25	27.6	60	6		063
5.6	25	27.7	60	6		064
5.7	27	29.7	60	6		065
5.8	27	29.8	60	6		066
5.9	27	29.9	60	6		067
6.0	27	30	60	6		068
6.1	28	31	70	6		069
6.2	28	31	70	6		070
6.3	28	31	70	6		071
6.4	30	33	70	6		072
6.5	30	33	70	6		073
6.6	30	33	70	6		074
6.7	31	33	70	6		075
6.8	31	33	70	6		076
6.9	31	33	70	6		077
7.0	32	33	70	6		078
7.1	33	36	70	6		079
7.2	33	36	70	6		080
7.3	33	36	70	6		081

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11101	...
7.4	34	36	70	6		082
7.5	34	36	70	6		083
7.6	34	36	70	6		084
7.7	36	39	70	6		085
7.8	36	39	70	6		086
7.9	36	39	70	6		087
8.0	36	39	70	8		088
8.1	37	40	80	8		089
8.2	37	40	80	8		090
8.3	37	40	80	8		091
8.4	39	42	80	8		092
8.5	39	42	80	8		093
8.6	39	42	80	8		094
8.7	40	42	80	8		095
8.8	40	42	80	8		096
8.9	40	42	80	8		097
9.0	41	42	80	8		098
9.1	42	45	80	8		099
9.2	42	45	80	8		100
9.3	42	45	80	8		101
9.4	43	45	80	8		102
9.5	43	45	80	8		103
9.6	43	45	80	8		104
9.7	45	48	80	8		105
9.8	45	48	80	8		106
9.9	45	48	80	8		107
10.0	45	48	80	10		108
10.1	46	49	90	10		109
10.2	46	49	90	10		110
10.3	46	49	90	10		111
10.4	48	51	90	10		112
10.5	48	51	90	10		113
10.6	48	51	90	10		114
10.7	49	51	90	10		115
10.8	49	51	90	10		116
10.9	49	51	90	10		117
11.0	50	51	90	10		118
11.1	51	54	90	10		119
11.2	51	54	90	10		120
11.3	51	54	90	10		121

Continued

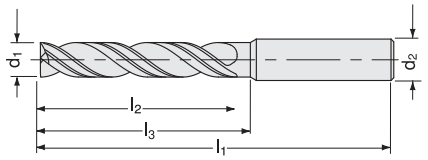
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11101 Solid-carbide flat drill AQUA DRILL EX Flat

180° | DIN 6535 HA | 2xD | VHM | AQ | ≈ 20° | Uni

Continued

NEW



DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11101	...
11.4	52	54	90	10		122
11.5	52	54	90	10		123
11.6	52	54	90	10		124
11.7	54	57	90	10		125
11.8	54	57	90	10		126
11.9	54	57	90	10		127
12.0	54	57	90	12		128
12.1	55	58	100	12		129
12.2	55	58	100	12		130
12.3	55	58	100	12		131
12.4	57	60	100	12		132
12.5	57	60	100	12		133
12.6	57	60	100	12		134
12.7	58	60	100	12		135
12.8	58	60	100	12		136
12.9	58	60	100	12		137
13.0	59	60	100	12		138
13.1	60	63	100	12		139
13.2	60	63	100	12		140

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11101	...
13.3	60	63	100	12		141
13.4	61	63	100	12		142
13.5	61	63	100	12		143
13.6	61	63	100	12		144
13.7	63	66	100	12		145
13.8	63	66	100	12		146
13.9	63	66	100	12		147
14.0	63	66	100	12		148
14.1	64	67	105	12		149
14.2	64	67	105	12		150
14.3	64	67	105	12		151
14.4	66	69	105	12		152
14.5	66	69	105	12		153
14.6	66	69	105	12		154
14.7	67	69	105	12		155
14.8	67	69	105	12		156
14.9	67	69	105	12		157
15.0	68	69	105	12		158
15.1	69	72	115	12		159

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11101	...
15.2	69	72	115	12		160
15.3	69	72	115	12		161
15.4	70	72	115	12		162
15.5	70	72	115	12		163
15.6	70	72	115	12		164
15.7	72	75	115	12		165
15.8	72	75	115	12		166
15.9	72	75	115	12		167
16.0	72	75	115	16		168
16.5	75	77	115	16		169
17.0	77	79	125	16		170
17.5	79	81	125	16		171
18.0	81	84	125	16		172
18.5	84	87	135	16		173
19.0	86	87	135	16		174
19.5	88	91	145	16		175
20.0	90	93	145	20		176

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190–200	150–160	120–130	90–100	90–100	70–90	40–65	30–50	35–40	20–25				40–45	30–35	-	70–90	-

11102 Solid-carbide flat drill AQUA DRILL EX Flat with corner radius

R | 180° | DIN 6535 HA | VHM | AQ | ≈ 20° | Uni | 2xD

NACHI

Design
- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges
- Double drill heel
- With corner radius

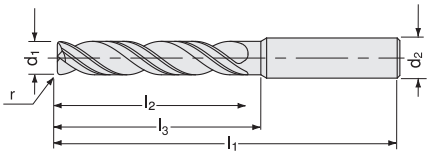
Applications
For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr. For blind holes with corner radius.

Quality
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating)

Note:
When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.

11102



NEW

DIN 6535 HA

d_1 h7 mm	r mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	11102	...
3.0	0.3	14	14.4	50	6		003
3.3	0.3	15	15.7	50	6		004
3.5	0.3	16	16.3	50	6		005
4.0	0.3	18	18.3	50	6		006
4.2	0.3	19	20.4	60	6		007
4.5	0.3	21	22.7	60	6		008
5.0	0.3	23	23.1	60	6		009
5.3	0.3	24	26.4	60	6		010
5.5	0.3	25	27.6	60	6		011
6.0	0.4	27	30.0	60	6		012
6.5	0.4	30	33.0	70	6		013
6.8	0.4	31	33.0	70	6		014
7.0	0.4	32	33.0	70	6		015

DIN 6535 HA

d_1 h7 mm	r mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	11102	...
7.5	0.4	34	36	70	6		016
8.0	0.4	36	39	70	8		017
8.5	0.4	39	42	80	8		018
8.8	0.4	40	42	80	8		019
9.0	0.4	41	42	80	8		020
9.5	0.4	43	45	80	8		021
10.0	0.5	45	48	80	10		022
10.3	0.5	46	49	90	10		023
10.5	0.5	48	51	90	10		024
10.8	0.5	49	51	90	10		025
11.0	0.5	50	51	90	10		026
11.5	0.5	52	54	90	10		027
12.0	0.5	54	57	90	12		028

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190–200	150–160	120–130	90–100	90–100	70–90	40–65	35–50	35–40	20–25				40–45	30–35	-	70–90	-

( ) = Items with prices in brackets partly available from stock.

Solid-carbide flat drills

11103 Solid-carbide flat drill AQUA DRILL EX Flat LS

180° | DIN 6535 HA | 2xD | VHM | AQ | ≈ 20° | Uni

NACHI

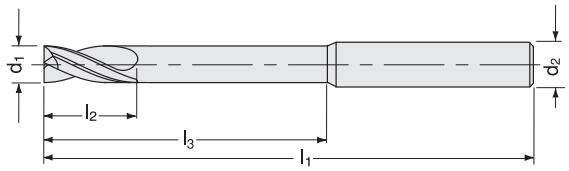
Design
- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges
- Long shank for deeply recessed drill holes
- Double drill heel

Applications
For high-precision drilling with flat base up to 48 HRC. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr. For deeply recessed holes.

Quality
Solid-carbide with Aqua EX coating. Excellent temperature and wear resistance. (TiAlN multi-layer coating).

11103

NEW



Note:
Centring hole is recommended. When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11103	...
3.0	14	30	100	6		010
3.1	15	31	100	6		011
3.2	15	32	100	6		012
3.3	15	33	100	6		013
3.4	16	34	100	6		014
3.5	16	35	100	6		015
3.6	16	36	100	6		016
3.7	18	37	100	6		017
3.8	18	38	100	6		018
3.9	18	39	100	6		019
4.0	18	40	100	6		020
4.1	19	41	100	6		021
4.2	19	42	100	6		022
4.3	19	43	100	6		023
4.4	21	44	100	6		024
4.5	21	45	100	6		025
4.6	21	46	100	6		026
4.7	22	47	100	6		027
4.8	22	48	100	6		028
4.9	22	49	100	6		029
5.0	23	50	110	6		030
5.1	24	51	110	6		031
5.2	24	52	110	6		032
5.3	24	53	110	6		033
5.4	25	54	110	6		034
5.5	25	55	110	6		035
5.6	25	56	110	6		036
5.7	27	57	110	6		037
5.8	27	58	110	6		038
5.9	27	59	110	6		039
6.0	27	60	120	6		040
6.1	28	30	120	6		041
6.2	28	30	120	6		042
6.3	28	30	120	6		043
6.4	30	32	120	6		044
6.5	30	32	120	6		045

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11103	...
6.6	30	32	120	6		046
6.7	31	33	120	6		047
6.8	31	33	120	6		048
6.9	31	33	120	6		049
7.0	32	34	120	6		050
7.1	33	35	120	6		051
7.2	33	35	120	6		052
7.3	33	35	120	6		053
7.4	34	36	120	6		054
7.5	34	36	120	6		055
7.6	34	36	120	6		056
7.7	36	38	120	6		057
7.8	36	38	120	6		058
7.9	36	38	120	6		059
8.0	36	80	130	8		060
8.1	37	39	130	8		061
8.2	37	39	130	8		062
8.3	37	39	130	8		063
8.4	39	41	130	8		064
8.5	39	41	130	8		065
8.6	39	41	130	8		066
8.7	40	42	130	8		067
8.8	40	42	130	8		068
8.9	40	42	130	8		069
9.0	41	43	130	8		070
9.1	42	44	130	8		071
9.2	42	44	130	8		072
9.3	42	44	130	8		073
9.4	43	45	130	8		074
9.5	43	45	130	8		075
9.6	43	45	130	8		076
9.7	45	47	130	8		077
9.8	45	47	130	8		078
9.9	45	47	130	8		079
10.0	45	100	150	10		080
10.1	46	48	150	10		081

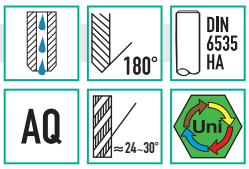
DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11103	...
10.2	46	48	150	10		082
10.3	46	48	150	10		083
10.4	48	50	150	10		084
10.5	48	50	150	10		085
10.6	48	50	150	10		086
10.7	49	51	150	10		087
10.8	49	51	150	10		088
10.9	49	51	150	10		089
11.0	50	52	150	10		090
11.1	51	53	150	10		091
11.2	51	53	150	10		092
11.3	51	53	150	10		093
11.4	52	54	150	10		094
11.5	52	54	150	10		095
11.6	52	54	150	10		096
11.7	54	56	150	10		097
11.8	54	56	150	10		098
11.9	54	56	150	10		099
12.0	54	120	170	12		100
12.5	57	59	170	12		101
13.0	59	61	180	12		102
13.5	61	63	180	12		103
14.0	63	65	190	12		104
14.5	66	68	190	12		105
15.0	67	69	200	12		106
15.5	70	72	200	12		107
16.0	72	160	220	16		108
16.5	75	77	220	16		109
17.0	77	79	220	16		110
17.5	79	81	220	16		111
18.0	81	83	240	16		112
18.5	84	86	240	16		113
19.0	86	88	250	16		114
19.5	88	90	250	16		115
20.0	90	200	250	20		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190–200	150–160	120–130	90–100	90–100	70–90	40–65	35–50	35–40	20–25	-	-	-	40–45	30–35	-	70–90	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11104 Solid-carbide flat drill AQUA DRILL EX Flat with internal cooling



11104

NACHI

Design
- Right cutting
- Twist angle 24°~30°
- Flat drill 180°
- 2 cutting edges
- Coolant bores
- Double drill heel

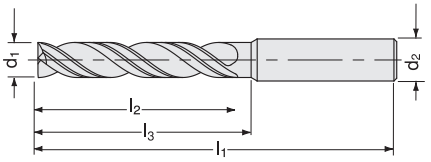
Applications
For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool.
Suitable for cross-drilled holes. Drilling with reduced burr.

Quality
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating)

NEW

Note:
When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11104	...
1.0	4.3	4.6	55	3		010
1.1	4.7	5.0	58	3		011
1.2	5.2	5.5	58	3		012
1.3	5.6	5.9	58	3		013
1.4	6.0	6.3	58	3		014
1.5	6.5	6.8	58	3		015
1.6	6.9	7.2	58	3		016
1.7	7.3	7.6	58	3		017
1.8	7.7	8.0	58	3		018
1.9	8.2	8.5	58	3		019
2.0	8.6	8.9	58	3		020
2.1	9.0	9.3	62	3		021
2.2	9.5	9.8	62	3		022
2.3	9.9	10.2	62	3		023
2.4	10.3	10.6	62	3		024
2.5	10.8	11.1	62	3		025
2.6	11.2	11.5	68	3		026
2.7	11.6	11.9	68	3		027
2.8	12.0	12.3	68	3		028
2.9	12.5	12.9	68	3		029
3.0	14	15	68	3		050
3.1	15	17	72	4		051
3.2	15	17	72	4		052
3.3	15	17	72	4		053
3.4	16	17	72	4		054
3.5	16	18	72	4		055
3.6	16	19	72	4		056
3.7	18	19	72	4		057
3.8	18	19	72	4		058
3.9	18	19	72	4		059
4.0	18	19	72	4		060
4.1	19	22	80	5		061
4.2	19	22	80	5		062
4.3	19	22	80	5		063
4.4	21	22	80	5		064
4.5	21	23	80	5		065
4.6	21	24	80	5		066
4.7	22	24	80	5		067
4.8	22	24	80	5		068
4.9	22	24	80	5		069

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11104	...
5.0	23	24	80	5		070
5.1	24	26	82	6		071
5.2	24	26	82	6		072
5.3	24	26	82	6		073
5.4	25	26	82	6		074
5.5	25	27	82	6		075
5.6	25	28	82	6		076
5.7	27	28	82	6		077
5.8	27	28	82	6		078
5.9	27	28	82	6		079
6.0	27	28	82	6		080
6.1	28	31	88	7		081
6.2	28	31	88	7		082
6.3	28	31	88	7		083
6.4	30	31	88	7		084
6.5	30	32	88	8		085
6.6	30	33	88	7		086
6.7	31	33	88	7		087
6.8	31	33	88	8		088
6.9	31	33	88	7		089
7.0	32	33	88	7		090
7.1	33	35	94	8		091
7.2	33	35	94	8		092
7.3	33	35	94	8		093
7.4	34	35	94	8		094
7.5	34	36	94	8		095
7.6	34	37	94	8		096
7.7	36	37	94	8		097
7.8	36	37	94	8		098
7.9	36	37	94	8		099
8.0	36	37	94	8		100
8.1	37	40	100	9		101
8.2	37	40	100	9		102
8.3	37	40	100	9		103
8.4	39	40	100	9		104
8.5	39	41	100	10		105
8.6	39	42	100	9		106
8.7	40	42	100	9		107
8.8	40	42	100	9		108
8.9	40	42	100	9		109

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11104	...
9.0	41	42	100	10		110
9.1	42	44	106	10		111
9.2	42	44	106	10		112
9.3	42	44	106	10		113
9.4	43	44	106	10		114
9.5	43	45	106	10		115
9.6	43	46	106	10		116
9.7	45	46	106	10		117
9.8	45	46	106	10		118
9.9	45	46	106	10		119
10.0	45	46	106	10		120
10.1	46	49	116	11		121
10.2	46	49	116	11		122
10.3	46	49	116	11		123
10.4	48	49	116	11		124
10.5	48	50	116	11		125
10.6	48	51	116	11		126
10.7	49	51	116	11		127
10.8	49	51	116	11		128
10.9	49	51	116	11		129
11.0	49	51	116	11		130
11.1	50	53	122	12		131
11.2	51	53	122	12		132
11.3	51	53	122	12		133
11.4	52	53	122	12		134
11.5	52	54	122	12		135
11.6	52	55	122	12		136
11.7	54	55	122	12		137
11.8	54	55	122	12		138
11.9	54	55	122	12		139
12.0	54	55	122	12		140
12.5	57	59	128	13		141
13.0	59	60	128	13		142
13.5	61	63	134	14		143
14.0	63	64	134	14		144
14.5	66	68	140	15		145
15.0	68	69	140	15		146
15.5	70	72	146	16		147
16.0	72	73	146	16		148

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190–200	150–160	120–130	90–100	90–100	70–90	40–65	35–50	35–40	20–25	-	-	-	40–45	30–35	-	70–90	-

Solid-carbide flat drills

11105 Solid-carbide flat drill AQUA DRILL EX Flat Regular

180° | DIN 6535 HA | 4xD | VHM | AQ | ≈ 20° | Uni

NACHI

Design
- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges
- Double drill heel

Applications
For high-precision drilling with flat base up to 48 HRC. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr.

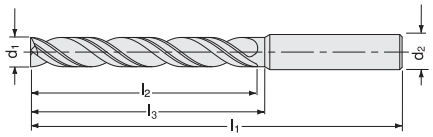
Quality
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating).

NEW

11105

Note:
Centring hole or pilot hole is required. When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11105	...
3.0	19	20	60	6		010
3.1	21	23	60	6		011
3.2	21	23	60	6		012
3.3	21	24	60	6		013
3.4	23	24	60	6		014
3.5	23	24	60	6		015
3.6	23	26	60	6		016
3.7	25	25	60	6		017
3.8	25	25	60	6		018
3.9	25	25	60	6		019
4.0	25	25	60	6		020
4.1	27	29	70	6		021
4.2	27	29	70	6		022
4.3	27	30	70	6		023
4.4	29	32	70	6		024
4.5	29	32	70	6		025
4.6	29	32	70	6		026
4.7	31	33	70	6		027
4.8	31	33	70	6		028
4.9	31	32	70	6		029
5.0	32	32	70	6		030
5.1	34	36	70	6		031
5.2	34	36	70	6		032
5.3	34	36	70	6		033
5.4	36	37	70	6		034
5.5	36	37	70	6		035
5.6	36	39	70	6		036
5.7	38	39	70	6		037
5.8	38	39	70	6		038
5.9	38	39	70	6		039
6.0	38	39	70	6		040
6.1	40	41	85	6		041
6.2	40	41	85	6		042
6.3	40	41	85	6		043
6.4	42	43	85	6		044
6.5	42	43	85	6		045
6.6	42	43	85	6		046
6.7	44	45	85	6		047
6.8	44	45	85	6		048
6.9	44	45	85	6		049
7.0	46	47	90	6		050
7.1	46	47	90	6		051
7.2	46	47	90	6		052
7.3	46	47	90	6		053
7.4	48	49	90	6		054
7.5	48	49	90	6		055
7.6	48	49	90	6		056

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11105	...
7.7	51	52	90	6		057
7.8	51	52	90	6		058
7.9	51	52	90	6		059
8.0	51	53	100	8		060
8.1	52	53	100	8		061
8.2	52	53	100	8		062
8.3	52	53	100	8		063
8.4	54	55	100	8		064
8.5	54	55	100	8		065
8.6	54	55	100	8		066
8.7	56	57	100	8		067
8.8	56	57	100	8		068
8.9	56	57	100	8		069
9.0	58	59	100	8		070
9.1	59	60	100	8		071
9.2	59	60	100	8		072
9.3	59	60	100	8		073
9.4	61	62	100	8		074
9.5	61	62	100	8		075
9.6	61	62	100	8		076
9.7	63	64	100	8		077
9.8	63	64	100	8		078
9.9	63	64	100	8		079
10.0	63	65	110	10		080
10.1	65	66	110	10		081
10.2	65	66	110	10		082
10.3	65	66	110	10		083
10.4	67	68	110	10		084
10.5	67	68	110	10		085
10.6	67	68	110	10		086
10.7	69	70	110	10		087
10.8	69	70	110	10		088
10.9	69	70	110	10		089
11.0	70	71	115	10		090
11.1	71	72	115	10		091
11.2	71	72	115	10		092
11.3	71	72	115	10		093
11.4	73	74	115	10		094
11.5	73	74	115	10		095
11.6	73	74	115	10		096
11.7	76	77	115	10		097
11.8	76	77	115	10		098
11.9	76	77	115	10		099
12.0	76	78	125	12		100
12.1	78	79	125	12		101
12.2	78	79	125	12		102
12.3	78	79	125	12		103

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11105	...
12.4	80	81	125	12		104
12.5	80	81	125	12		105
12.6	80	81	125	12		106
12.7	81	82	125	12		107
12.8	81	82	125	12		108
12.9	81	82	125	12		109
13.0	82	83	130	12		110
13.1	84	85	130	12		111
13.2	84	85	130	12		112
13.3	84	85	130	12		113
13.4	86	87	130	12		114
13.5	86	87	130	12		115
13.6	86	87	130	12		116
13.7	88	89	130	12		117
13.8	88	89	130	12		118
13.9	88	89	130	12		119
14.0	88	89	135	12		120
14.1	90	91	135	12		121
14.2	90	91	135	12		122
14.3	90	91	135	12		123
14.4	92	93	135	12		124
14.5	92	93	135	12		125
14.6	92	93	135	12		126
14.7	94	95	135	12		127
14.8	94	95	135	12		128
14.9	94	95	135	12		129
15.0	95	96	145	12		130
15.1	97	98	145	12		131
15.2	97	98	145	12		132
15.3	97	98	145	12		133
15.4	98	99	145	12		134
15.5	98	99	145	12		135
15.6	98	99	145	12		136
15.7	101	102	145	12		137
15.8	101	102	145	12		138
15.9	101	102	145	12		139
16.0	101	104	160	16		140
16.5	105	106	160	16		141
17.0	108	109	165	16		142
17.5	111	112	165	16		143
18.0	113	114	175	16		144
18.5	118	119	175	16		145
19.0	120	121	185	16		146
19.5	124	125	185	16		147
20.0	126	129	195	20		148

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190–200	150–160	120–130	90–100	90–100	70–90	40–65	35–50	35–40	20–25	-	-	-	40–45	30–35	-	70–90	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11106 Solid-carbide flat drill AQUA DRILL EX Flat with internal cooling

NACHI

Design
- Right cutting
- Twist angle 24°~30°
- Flat drill 180°
- 2 cutting edges
- Coolant bores
- Double drill heel

Quality
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating).

NEW

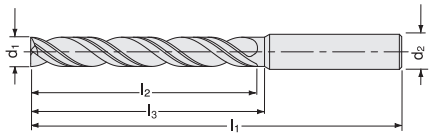
5xD | VHM | AQ | ≈24-30° | Uni | 180° | DIN 6535 HA

11106

Applications
For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr.

Note:
Centring hole or pilot hole is required. When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11106	...
1.0	6.3	6.6	57	3		010
1.1	6.9	7.2	60	3		011
1.2	7.6	7.9	60	3		012
1.3	8.2	8.5	60	3		013
1.4	8.8	9.1	60	3		014
1.5	9.5	9.8	60	3		015
1.6	10.1	10.4	60	3		016
1.7	10.7	11.0	60	3		017
1.8	11.3	11.6	60	3		018
1.9	12.0	12.3	60	3		019
2.0	12.6	12.9	60	3		020
2.1	13.2	13.5	64	3		021
2.2	13.9	14.2	64	3		022
2.3	14.5	14.8	64	3		023
2.4	15.1	15.4	64	3		024
2.5	15.8	16.1	64	3		025
2.6	16.4	16.7	74	3		026
2.7	17.0	17.3	74	3		027
2.8	17.6	17.9	74	3		028
2.9	18.3	18.6	74	3		029
3.0	20	21	74	3		030
3.1	22	25	80	4		031
3.2	22	25	80	4		032
3.3	22	25	80	4		033
3.4	24	25	80	4		034
3.5	24	26	80	4		035
3.6	24	27	80	4		036
3.7	24	27	80	4		037
3.8	26	27	80	4		038
3.9	26	27	80	4		039
4.0	26	27	80	4		040
4.1	28	30	90	5		041
4.2	28	30	90	5		042
4.3	28	30	90	5		043
4.4	29	30	90	5		044
4.5	29	31	90	5		045
4.6	29	34	90	5		046
4.7	32	34	90	5		047
4.8	32	34	90	5		048
4.9	32	34	90	5		049

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11106	...
5.0	33	34	90	5		050
5.1	35	38	94	6		051
5.2	35	38	94	6		052
5.3	35	38	94	6		053
5.4	37	38	94	6		054
5.5	37	39	94	6		055
5.6	37	40	94	6		056
5.7	39	40	94	6		057
5.8	39	40	94	6		058
5.9	39	40	94	6		059
6.0	39	40	94	6		060
6.1	41	44	101	7		061
6.2	41	44	101	7		062
6.3	41	44	101	7		063
6.4	43	44	101	7		064
6.5	43	45	101	7		065
6.6	43	46	101	7		066
6.7	45	46	101	7		067
6.8	45	46	101	7		068
6.9	45	46	101	7		069
7.0	46	46	101	7		070
7.1	48	51	110	8		071
7.2	48	51	110	8		072
7.3	48	51	110	8		073
7.4	50	51	110	8		074
7.5	50	52	110	8		075
7.6	50	53	110	8		076
7.7	52	53	110	8		077
7.8	52	53	110	8		078
7.9	52	53	110	8		079
8.0	52	53	110	8		080
8.1	54	57	117	9		081
8.2	54	57	117	9		082
8.3	54	57	117	9		083
8.4	56	57	117	9		084
8.5	56	58	117	9		085
8.6	56	59	117	9		086
8.7	58	59	117	9		087
8.8	58	59	117	9		088
8.9	58	59	117	9		089

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	11106	...
9.0	59	59	117	9		090
9.1	61	64	126	10		091
9.2	61	64	126	10		092
9.3	61	64	126	10		093
9.4	63	64	126	10		094
9.5	63	65	126	10		095
9.6	63	66	126	10		096
9.7	65	66	126	10		097
9.8	65	66	126	10		098
9.9	65	66	126	10		099
10.0	65	66	126	10		100
10.1	67	70	138	11		101
10.2	67	70	138	11		102
10.3	67	70	138	11		103
10.4	69	70	138	11		104
10.5	69	71	138	11		105
10.6	69	71	138	11		106
10.7	72	73	138	11		107
10.8	72	73	138	11		108
10.9	72	73	138	11		109
11.0	73	73	138	11		110
11.1	74	77	146	12		111
11.2	74	77	146	12		112
11.3	74	77	146	12		113
11.4	76	77	146	12		114
11.5	76	78	146	12		115
11.6	76	79	146	12		116
11.7	78	79	146	12		117
11.8	78	79	146	12		118
11.9	78	79	146	12		119
12.0	78	79	146	12		120
12.5	82	84	153	13		121
13.0	86	86	153	13		122
13.5	89	91	162	14		123
14.0	91	92	162	14		124
14.5	95	97	169	15		125
15.0	98	98	169	15		126
15.5	102	104	178	16		127
16.0	104	105	178	16		128

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190–200	150–160	120–130	90–100	90–100	70–90	40–65	35–50	35–40	20–25	-	-	-	40–45	30–35	-	70–90	-

11090 Solid-carbide drill reamers

Norm | Z 4 | 140° | DIN 6535 HA | VHM TiAlN | 5xD | H7 | Uni

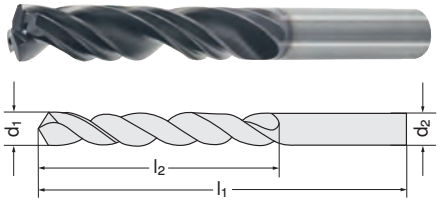
ATORN®

Design
- **Drilling and reaming in a single action**
- Maximum concentricity
- With four reaming chamfers for optimum dimensional accuracy
- Surface quality as for reaming

Applications
For making holes in the **tolerance range H7.**

Note:
Coolant pressure at least 30 bar.

11090



DIN 6535 HA

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11090	...
5.98	44	82	6		**101**
5.99	44	82	6		**102**
6.00	44	82	6		**103**
6.01	44	82	6		**104**
6.02	44	82	6		**105**
7.98	53	91	8		**106**
7.99	53	91	8		**107**
8.00	53	91	8		**108**

DIN 6535 HA

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11090	...
8.01	53	91	8		**109**
8.02	53	91	8		**110**
9.98	61	103	10		**111**
9.99	61	103	10		**112**
10.00	61	103	10		**113**
10.01	61	103	10		**114**
10.02	61	103	10		**115**
11.98	71	118	12		**116**

DIN 6535 HA

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11090	...
11.99	71	118	12		**117**
12.00	71	118	12		**118**
12.01	71	118	12		**119**
12.02	71	118	12		**120**
14.00	77	124	14		**121**
16.00	83	133	16		**122**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	100–115	90–100	75–90	60–75	40–60	35–40	-	-	-	-	-	-	-	80–90	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11167 Solid-carbide high-performance coolant drill TiAlNplus HPC

DIN 6537 | HPC | 140° | DIN 6535 HA | VHM TiAlN+ | 8xD | Uni

ATORN®

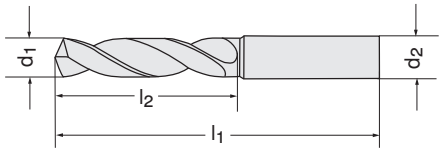
Design
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

Applications
For HPC drilling up to a strength of 1300 N/mm². Economic drilling in a variety of materials with high cutting values.

NEW

Quality
Solid carbide ultra-fine grain TiAlNpl

11167



Solid carbide/TiAlNplus

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11167	...
3.0	34	72	6		110
3.1	34	72	6		111
3.2	34	72	6		112
3.3	34	72	6		113
3.4	34	72	6		114
3.5	34	72	6		115
3.6	34	72	6		116
3.7	34	72	6		117
3.8	43	81	6		118
3.9	43	81	6		119
4.0	43	81	6		120
4.1	43	81	6		121
4.2	43	81	6		122
4.3	43	81	6		123
4.4	43	81	6		124
4.5	43	81	6		125
4.6	43	81	6		126
4.7	43	81	6		127
4.8	57	95	6		128
4.9	57	95	6		129
5.0	57	95	6		130
5.1	57	95	6		131
5.2	57	95	6		132
5.3	57	95	6		133
5.4	57	95	6		134
5.5	57	95	6		135
5.6	57	95	6		136
5.7	57	95	6		137
5.8	57	95	6		138
5.9	57	95	6		139
6.0	57	95	6		140
6.1	76	114	8		141
6.2	76	114	8		142
6.3	76	114	8		143
6.4	76	114	8		144
6.5	76	114	8		145
6.6	76	114	8		146
6.7	76	114	8		147
6.8	76	114	8		148
6.9	76	114	8		149
7.0	76	114	8		150
7.1	76	114	8		151
7.2	76	114	8		152
7.3	76	114	8		153
7.4	76	114	8		154
7.5	76	114	8		155
7.6	76	114	8		156
7.7	76	114	8		157

Solid carbide/TiAlNplus

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11167	...
7.8	76	114	8		158
7.9	76	114	8		159
8.0	76	114	8		160
8.1	95	142	10		161
8.2	95	142	10		162
8.3	95	142	10		163
8.4	95	142	10		164
8.5	95	142	10		165
8.6	95	142	10		166
8.7	95	142	10		167
8.8	95	142	10		168
8.9	95	142	10		169
9.0	95	142	10		170
9.1	95	142	10		171
9.2	95	142	10		172
9.3	95	142	10		173
9.4	95	142	10		174
9.5	95	142	10		175
9.6	95	142	10		176
9.7	95	142	10		177
9.8	95	142	10		178
9.9	95	142	10		179
10.0	95	142	10		180
10.2	114	162	12		181
10.5	114	162	12		182
10.8	114	162	12		183
11.0	114	162	12		184
11.5	114	162	12		185
11.8	114	162	12		186
12.0	114	162	12		187
12.2	131	178	14		188
12.5	131	178	14		189
13.0	131	178	14		190
13.5	131	178	14		191
14.0	131	178	14		192
14.5	152	203	16		193
15.0	152	203	16		194
15.5	152	203	16		195
16.0	152	203	16		196
16.5	171	222	18		197
17.0	171	222	18		198
17.5	171	222	18		199
18.0	171	222	18		200
18.5	190	243	20		201
19.0	190	243	20		202
19.5	190	243	20		203
20.0	190	243	20		204

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–300	180–220	100–180	100–140	100–140	90–100	70–80	50–70	30–40	-	-	-	-	40–50	20–50	-	30–110	30–100

Solid-carbide high-performance coolant drills | Solid-carbide pilot drills

11169 Solid-carbide high-performance coolant drill TiAlNplus HPC

HPC | 140° | DIN 6535 HA | VHM TiAlN+ | 12xD | Uni

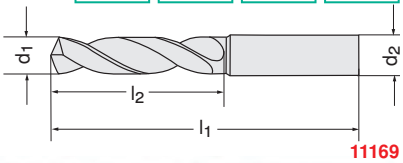
ATORN®

Design
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

Applications
For HPC drilling up to a strength of 1300 N/mm². Economic drilling in a variety of materials with high cutting values.

Quality
Solid carbide ultra-fine grain TiAlNplus.

NEW



11169

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11169	...
3.0	54	92	6		110
3.1	54	92	6		111
3.2	54	92	6		112
3.3	54	92	6		113
3.4	54	92	6		114
3.5	54	92	6		115
3.6	54	92	6		116
3.7	54	92	6		117
3.8	64	102	6		118
3.9	64	102	6		119
4.0	64	102	6		120
4.1	64	102	6		121
4.2	64	102	6		122
4.3	64	102	6		123
4.4	64	102	6		124
4.5	64	102	6		125
4.6	64	102	6		126
4.7	64	102	6		127
4.8	78	116	6		128
4.9	78	116	6		129
5.0	78	116	6		130
5.1	78	116	6		131
5.2	78	116	6		132
5.3	78	116	6		133
5.4	78	116	6		134
5.5	78	116	6		135
5.6	78	116	6		136
5.7	78	116	6		137
5.8	78	116	6		138
5.9	78	116	6		139
6.0	78	116	6		140
6.1	108	146	8		141
6.2	108	146	8		142
6.3	108	146	8		143
6.4	108	146	8		144
6.5	108	146	8		145
6.6	108	146	8		146
6.7	108	146	8		147
6.8	108	146	8		148
6.9	108	146	8		149
7.0	108	146	8		150
7.1	108	146	8		151
7.2	108	146	8		152
7.3	108	146	8		153
7.4	108	146	8		154
7.5	108	146	8		155
7.6	108	146	8		156
7.7	108	146	8		157
7.8	108	146	8		158
7.9	108	146	8		159

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_1 mm	d_2 mm	11169	...
8.0	108	146	8		160
8.1	120	162	10		161
8.2	120	162	10		162
8.3	120	162	10		163
8.4	120	162	10		164
8.5	120	162	10		165
8.6	120	162	10		166
8.7	120	162	10		167
8.8	120	162	10		168
8.9	120	162	10		169
9.0	120	162	10		170
9.1	120	162	10		171
9.2	120	162	10		172
9.3	120	162	10		173
9.4	120	162	10		174
9.5	120	162	10		175
9.6	120	162	10		176
9.7	120	162	10		177
9.8	120	162	10		178
9.9	120	162	10		179
10.0	120	162	10		180
10.2	156	204	12		181
10.5	156	204	12		182
10.8	156	204	12		183
11.0	156	204	12		184
11.5	156	204	12		185
11.8	156	204	12		186
12.0	156	204	12		187
12.5	182	230	14		188
12.7	182	230	14		189
12.8	182	230	14		190
13.0	182	230	14		191
13.5	182	230	14		192
13.8	182	230	14		193
14.0	182	230	14		194
14.5	208	260	16		195
14.8	208	260	16		196
15.0	208	260	16		197
15.5	208	260	16		198
15.8	208	260	16		199
16.0	208	260	16		200
16.5	234	285	18		201
17.0	234	285	18		202
17.5	234	285	18		203
18.0	234	285	18		204
18.5	258	310	20		205
19.0	258	310	20		206
19.5	258	310	20		207
20.0	258	310	20		208

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–300	180–220	100–180	90–110	90–110	70–80	70–80	50–70	30–40	-	-	-	-	40–50	20–40	-	30–110	30–100

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

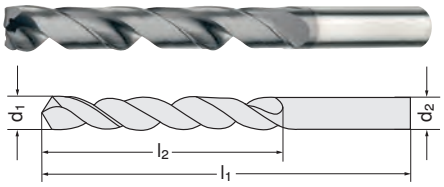
11078 Solid-carbide pilot drills

Z 2 | 140° | DIN 6535 HA | VHM TiAlN | 5xD | Toleranz m 7

Design
- **Reinforced core with special point thinning**
- Cutting chisel edge with **high centring accuracy**
- High alignment accuracy and roundness of the hole due to **four drill heels**
- Tip angle 140° for optimum creation of a pilot hole

Applications
The pilot hole is recommended for deeply recessed holes from 12 x D and 16 x D.
From bore depths of 20xD a pilot hole is absolutely necessary.
Creating a pilot hole always increases the process reliability.

11078



DIN 6535 HA

d_1 m7 mm	l_2 mm	l_1 mm	d_2 mm	11078	...
2.02	16	57	3		101
2.22	21	57	3		102
2.32	21	57	3		103
2.42	21	57	3		104
2.52	21	57	3		105
2.72	21	57	3		106
2.82	21	57	3		107
3.02	28	66	6		108
3.22	28	66	6		109
3.32	28	66	6		110
3.52	28	66	6		111
3.82	36	74	6		112

DIN 6535 HA

d_1 m7 mm	l_2 mm	l_1 mm	d_2 mm	11078	...
4.02	36	74	6		113
4.22	36	74	6		114
4.52	36	74	6		115
4.82	44	82	6		116
5.02	44	82	6		117
5.52	44	82	6		118
5.82	44	82	6		119
6.02	44	82	6		120
6.52	53	91	8		121
6.82	53	91	8		122
7.02	53	91	8		123
7.52	53	91	8		124

DIN 6535 HA

d_1 m7 mm	l_2 mm	l_1 mm	d_2 mm	11078	...
7.82	53	91	8		125
8.02	53	91	8		126
8.52	61	103	10		127
8.82	61	103	10		128
9.02	61	103	10		129
9.82	61	103	10		130
10.02	61	103	10		131
10.22	71	118	12		132
10.82	71	118	12		133
11.82	71	118	12		134
12.02	71	118	12		135

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140–180	120–140	75–85	80–95	75–85	70–75	65–70	55–60	50–55	-	-	-	-	25–30	20–25	25–35	85–105	-

Solid-carbide deep hole drill

11079 - 11080 Solid-carbide deep hole drill

HPC | 135° | DIN 6535 HA | VHM TiAlN | 16xD | 20xD | Uni

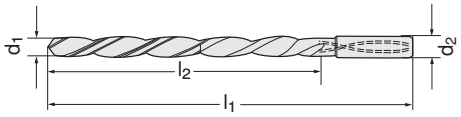
Design
- Spiral-fluted
- With four drill heels and internal coolant supply
- Polished chipping spaces and head coating for problem-free chip removal
- Maximum cooling duct cross-section for optimum cooling
- High alignment accuracy and roundness of the hole

Quality
Solid carbide/TiAlN-coated.

Note:
Minimum coolant pressure 40 bar. *Before deep-hole drilling, create a pilot hole (min. 1xD) (pilot drill see art. no. 11078). Insert into the pilot hole with approximately 300 rpm at f=500 mm/min. Adjust the coolant pressure and the appropriate rotation speed.*

Continuous drilling to the full drilling depth without chip removal cycle. In the case of through-bores with angled exit, reduce feed speed Vf to 40% approx. 1 mm before the point of breakthrough. After reaching the drilling depth, switch off rotation speed and coolant – retract in a rapid movement. All deep hole drills must be guided when drilling. Deep hole drills should never be moved freely in the machine area at full rotation speed.

11079

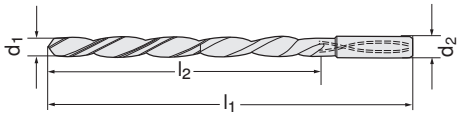


				16xD	
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11079	...
3.0	60	100	6		**201**
3.2	60	100	6		**202**
3.3	60	100	6		**203**
3.5	60	100	6		**204**
3.8	78	115	6		**205**
4.0	78	115	6		**206**
4.2	78	115	6		**207**
4.5	78	115	6		**208**
4.8	92	130	6		**209**
5.0	92	130	6		**210**
5.5	100	145	6		**211**
5.8	100	145	6		**212**
6.0	100	145	6		**213**
6.5	130	170	8		**214**
6.8	130	170	8		**215**
7.0	130	170	8		**216**

				16xD	
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11079	...
7.5	130	170	8		**217**
7.8	130	170	8		**218**
8.0	130	170	8		**219**
8.5	163	208	10		**220**
8.8	163	208	10		**221**
9.0	163	208	10		**222**
9.5	163	208	10		**223**
9.8	163	208	10		**224**
10.0	163	208	10		**225**
10.2	195	245	12		**226**
10.5	195	245	12		**227**
10.8	195	245	12		**228**
11.0	195	245	12		**229**
11.5	195	245	12		**230**
11.8	195	245	12		**231**
12.0	195	245	12		**232**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140–180	120–140	75–85	80–95	75–85	70–75	65–70	55–60	50–55	-	-	-	-	25–30	20–25	25–35	85–105	-

11080



				20xD	
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11080	...
2.0	50	92	4		**201**
2.2	50	92	4		**202**
2.3	50	92	4		**203**
2.4	70	112	4		**204**
2.5	70	112	4		**205**
2.7	70	112	4		**206**
2.8	70	112	4		**207**
3.0	80	120	6		**209**
3.2	80	120	6		**210**
3.3	80	120	6		**211**
3.5	80	120	6		**212**
3.8	90	130	6		**213**
4.0	90	130	6		**214**
4.2	110	160	6		**215**
4.5	110	160	6		**216**
4.8	110	160	6		**218**
5.0	110	160	6		**219**
5.5	140	185	6		**220**
5.8	140	185	6		**221**
6.0	140	185	6		**222**

				20xD	
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11080	...
6.5	155	210	8		**223**
6.8	160	210	8		**224**
7.0	160	210	8		**225**
7.5	180	230	8		**226**
7.8	180	230	8		**227**
8.0	180	230	8		**228**
8.5	195	260	10		**229**
8.8	230	290	10		**230**
9.0	230	290	10		**231**
9.5	230	290	10		**232**
9.8	230	290	10		**233**
10.0	230	290	10		**234**
10.2	270	315	12		**235**
10.5	270	315	12		**236**
10.8	270	315	12		**237**
11.0	270	315	12		**238**
11.5	270	315	12		**239**
11.8	270	315	12		**240**
12.0	270	315	12		**241**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140–180	120–140	75–85	80–90	70–80	65–70	60–65	55–60	50–55	-	-	-	-	25–30	20–25	25–35	80–100	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11081 - 11082 Solid-carbide deep hole drill

HPC | 135° | DIN 6535 HA | VHM TiAlN | 25xD | 30xD | Uni

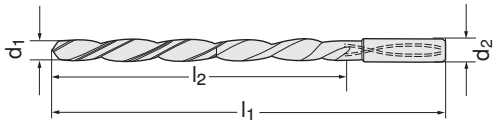
Design
- Spiral-fluted
- With four drill heels and internal coolant supply
- Polished chipping spaces and head coating for problem-free chip removal
- Maximum cooling duct cross-section for optimum cooling
- High alignment accuracy and roundness of the hole

Quality
Solid carbide/TiAlN-coated.

Note:
Minimum coolant pressure 40 bar. *Before deep-hole drilling, create a pilot hole (min. 1xD) (pilot drill see cat. no. 11078). Insert into the pilot hole with approximately 300 rpm at f=500 mm/min. Adjust the coolant pressure and the appropriate rotation speed.*

Continuous drilling to the full drilling depth without chip removal cycle. In the case of through-bores with angled exit, reduce feed speed Vf to 40% approx. 1 mm before the point of breakthrough. After reaching the drilling depth, switch off rotation speed and coolant – retract in a rapid movement. All deep hole drills must be guided when drilling. Deep hole drills should never be moved freely in the machine area at full rotation speed.

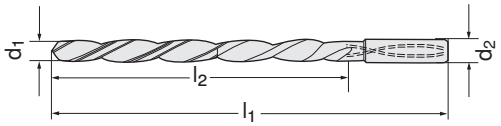
11081



				25xD				25xD
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11081	...	d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11081	...
3.0	98	115	6		201	**6.5**	200	240	8		214
3.2	98	115	6		202	**6.8**	200	240	8		215
3.3	110	150	6		203	**7.0**	200	240	8		216
3.5	110	150	6		204	**7.5**	220	260	8		217
3.8	120	160	6		205	**7.8**	220	260	8		218
4.0	120	160	6		206	**8.0**	220	260	8		219
4.2	120	160	6		207	**8.5**	240	285	10		220
4.5	135	180	6		208	**8.8**	270	310	10		221
4.8	135	180	6		209	**9.0**	270	310	10		222
5.0	135	180	6		210	**9.5**	270	310	10		223
5.5	168	205	6		211	**9.8**	270	310	10		224
5.8	168	205	6		212	**10.0**	270	310	10		225
6.0	168	205	6		213						

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140–180	120–140	70-80	75-85	70-75	65–70	60–65	55–60	45-50	-	-	-	-	25–30	20–25	25–35	75-95	-

11082



				30xD				30xD
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11082	...	d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	11082	...
2.0	70	115	4		201	**5.0**	165	215	6		219
2.2	70	115	4		202	**5.5**	180	230	6		220
2.3	70	115	4		203	**5.8**	180	230	6		221
2.4	90	138	4		204	**6.0**	180	230	6		222
2.5	90	138	4		205	**6.5**	215	280	8		223
2.7	90	138	4		206	**6.8**	230	280	8		224
2.8	90	138	4		207	**7.0**	230	280	8		225
3.0	105	150	6		209	**7.5**	230	280	8		226
3.2	105	150	6		210	**7.8**	265	315	8		227
3.3	135	185	6		211	**8.0**	265	315	8		228
3.5	135	185	6		212	**8.5**	295	350	10		229
3.8	135	185	6		213	**8.8**	330	380	10		230
4.0	135	185	6		214	**9.0**	330	380	10		231
4.2	135	185	6		215	**9.5**	330	380	10		232
4.5	165	215	6		216	**9.8**	330	380	10		233
4.8	165	215	6		218	**10.0**	330	380	10		234

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140–180	120–140	70–80	70–80	65–70	60–65	55–60	50–55	40–50	-	-	-	-	25–30	20–25	25–35	70–90	-

Solid-carbide high-performance coolant drills | Solid-carbide twist drills

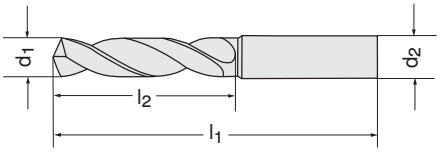
11083 Solid-carbide high-performance coolant drill

HPC | 145° | DIN 6535 HA | VHM ZrN | 5xD | max. | ALU

Design
- Solid-carbide drill with optimised and polished chipping spaces for safe chip removal
- Special coating for processing aluminium

Applications
For high-performance drilling in aluminium materials.

11083



d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	5xD 11083	...
3.0	28	66	6		030
3.3	28	66	6		033
3.5	28	66	6		035
3.7	28	66	6		037
3.8	36	74	6		038
4.0	36	74	6		040
4.2	36	74	6		042
4.5	36	74	6		045
4.6	36	74	6		046
4.8	44	82	6		048
5.0	44	82	6		050
5.5	44	82	6		055
5.8	44	82	6		058
6.0	44	82	6		060
6.5	53	91	8		065
6.8	53	91	8		068
7.0	53	91	8		070
7.4	53	91	8		074
7.5	53	91	8		075
7.8	53	91	8		078
8.0	53	91	8		080

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	5xD 11083	...
8.5	61	103	10		085
8.8	61	103	10		088
9.0	61	103	10		090
9.3	61	103	10		093
9.5	61	103	10		095
9.8	61	103	10		098
10.0	61	103	10		100
10.2	71	118	12		102
10.5	71	118	12		105
11.0	71	118	12		110
11.2	71	118	12		112
11.5	71	118	12		115
11.8	71	118	12		118
12.0	71	118	12		120
12.5	77	124	14		125
13.0	77	124	14		130
14.0	77	124	14		140
15.0	83	133	16		150
16.0	83	133	16		160
18.0	93	143	18		180
20.0	101	153	20		200

Alu unalloyed	Alu-wrought alloy hard.	Alu-wrought alloy hard.	Al< 6%Si	Al<12%Si	Al>12%Si	Cu unalloyed	Cu-wr. alloy not hard.	Cu-wr. alloy hard.	CuNi-alloy	CuNi-alloy long chip.	Ms long chip.	Ms short chip.	Bronze long chip.	Bronze short chip.
360	360	400	400	360	350	160	160	160	160	160	200	200	200	-

Info The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use P M K
HM grade H 42
Coating coated
Designation 18674 ...

Designation	$W^{\pm 0,1}$ mm	$R^{\pm 0,05}$ mm		
GTN-2	2,2	0,16	10 pieces	113
GTN-3	3,1	0,20	10 pieces	114

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11071 Solid-carbide twist drill 65 HRC

HPC | 140° | DIN 6535 HA | VHM TiAlSiN | 3xD | 65 HRC

ATORN®

Design
- Reinforced core with special point thinning and cutting chisel edge
- No internal coolant feed, for higher strength

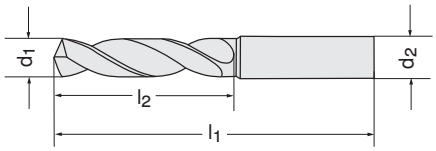
Advantage:
- High centring accuracy
- Special coating for drilling hardened steels up to 65 HRC
- Extremely hard, low-friction and temperature-resistant TiAlSiN coating for longer service life

Applications
For HPC bore machining up to 65 HRC.

Quality
Solid carbide ultra-fine grain/TiAlSiN-coated.

NEW

11071



DIN 6535 HA

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11071	...
1.0	7	45	4		310
1.3	7	45	4		313
1.5	14	55	4		315
1.6	14	55	4		316
1.7	14	55	4		317
1.8	14	55	4		318
1.9	14	55	4		319
2.0	20	55	4		320
2.1	20	55	4		321
2.2	20	55	4		322
2.3	20	55	4		323
2.5	20	55	4		325
2.6	20	55	4		326
2.7	20	55	4		327
2.8	20	55	4		328
2.9	20	55	4		329
3.0	20	62	6		330
3.1	20	62	6		331
3.2	20	62	6		332
3.3	20	62	6		333
3.4	20	62	6		334
3.5	20	62	6		335
3.7	20	62	6		337
3.8	24	66	6		338
3.9	24	66	6		339
4.0	24	66	6		340
4.1	24	66	6		341
4.2	24	66	6		342
4.3	24	66	6		343
4.4	24	66	6		344
4.5	24	66	6		345
4.7	24	66	6		347
4.8	28	66	6		348
4.9	28	66	6		349
5.0	28	66	6		350
5.1	28	66	6		351
5.2	28	66	6		352

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11071	...
5.3	28	66	6		353
5.4	28	66	6		354
5.5	28	66	6		355
5.6	28	66	6		356
5.7	28	66	6		357
5.8	28	66	6		358
5.9	28	66	6		359
6.0	28	66	6		360
6.1	34	79	8		361
6.2	34	79	8		362
6.5	34	79	8		365
6.6	34	79	8		366
6.7	34	79	8		367
6.8	34	79	8		368
6.9	34	79	8		369
7.0	34	79	8		370
7.1	41	79	8		371
7.2	41	79	8		372
7.3	41	79	8		373
7.5	41	79	8		375
7.6	41	79	8		376
7.7	41	79	8		377
7.8	41	79	8		378
7.9	41	79	8		379
8.0	41	79	8		380
8.1	47	89	10		381
8.3	47	89	10		383
8.5	47	89	10		385
8.6	47	89	10		386
8.7	47	89	10		387
8.8	47	89	10		388
8.9	47	89	10		389
9.0	47	89	10		390
9.2	47	89	10		392
9.5	47	89	10		395
9.6	47	89	10		396
9.7	47	89	10		397

DIN 6535 HA

d_1 h7 mm	l_2 mm	l_1 mm	d_2 h6 mm	11071	...
9.8	47	89	10		398
9.9	47	89	10		399
10.0	47	89	10		400
10.2	55	102	12		402
10.4	55	102	12		404
10.5	55	102	12		405
10.8	55	102	12		408
11.0	55	102	12		410
11.5	55	102	12		415
11.6	55	102	12		416
11.7	55	102	12		417
11.8	55	102	12		418
11.9	55	102	12		419
12.0	55	102	12		420
12.2	60	107	14		422
12.5	60	107	14		425
12.8	60	107	14		428
13.0	60	107	14		430
13.5	60	107	14		435
14.0	60	107	14		440
14.2	65	115	16		442
14.3	65	115	16		443
14.5	65	115	16		445
14.8	65	115	16		448
15.0	65	115	16		450
15.5	65	115	16		455
15.8	65	115	16		458
16.0	65	115	16		460
17.0	73	123	18		470
17.5	73	123	18		475
18.0	73	123	18		480
18.5	79	131	20		485
19.0	79	131	20		490
19.5	79	131	20		495
20.0	79	131	20		500

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	35–40	30–35	25–28	20–25	13–16	-	-	-	-	-

11069 Solid-carbide tap removal tools

VHM TiN | DIN 6535 HA

HW

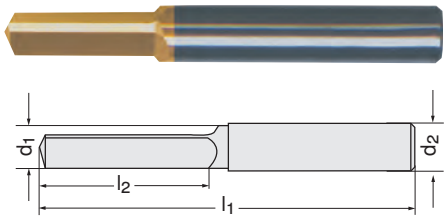
Design
- With straight shank
- Self-centring

Applications
For drilling out broken-off HSS and HSS-E screw taps.

Quality
Solid-carbide micro-fine grain/TiN-coated.

Note:
Stable clamping is required.
Hole dry and free from cutting oil.

11069



Solid carbide/TiN

d_1 h9 mm	l_2 mm	l_1 mm	d_2 h6 mm	11069	...
3.3	15	50	6		**101**
4.2	15	50	6		**103**
5.0	15	50	6		**105**

Solid carbide/TiN

d_1 h9 mm	l_2 mm	l_1 mm	d_2 h6 mm	11069	...
6.8	20	60	8		**107**
8.5	25	70	10		**109**
10.2	30	75	12		**111**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	25–35	-	-	-	-	-

11070 Cemented-carbide twist drills

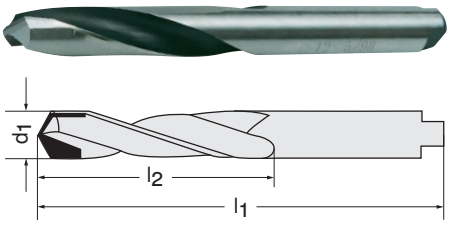
DIN 8037 | 118° | HM K20 | ≤ 1400 N/mm²

Design
- With straight shank
- Polished flute
- With cemented-carbide cutting plates

Applications
For drilling in steel **750–1400 N/mm²**, steel casting **over 700 N/mm²**, grey cast iron, chilled cast iron, malleable iron and red bronze - gunmetal, brass, bronze, etc.

Quality
Cutting edges carbide-tipped — K20.

11070



d_1 h8 mm	l_2 mm	l_1 mm	11070	...
3.0	20	50		**130**
3.5	25	56		**135**
4.0	25	56		**140**
4.5	28	63		**145**
5.0	28	63		**150**
5.5	32	71		**155**
6.0	32	71		**160**
6.5	32	71		**165**

d_1 h8 mm	l_2 mm	l_1 mm	11070	...
7.0	40	80		**170**
7.5	40	80		**175**
8.0	40	80		**180**
8.5	50	90		**185**
9.0	50	90		**190**
9.5	50	90		**195**
10.0	56	100		**200**
10.5	56	100		**205**

d_1 h8 mm	l_2 mm	l_1 mm	11070	...
11.0	56	100		**210**
12.0	63	112		**220**
13.0	63	112		**230**
14.0	71	125		**240**
15.0	71	125		**250**
16.0	80	140		**260**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–150	50–100	40–90	30–45	20–40	40–65	40–60	30–50	20–30	-	-	-	-	15–30	8–15	18–35	30–80	20–100

11120 Cemented-carbide twist drills

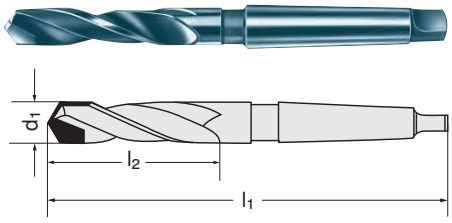
DIN 8041 | 118° | HM K20 | ≤ 1400 N/mm²

Design
- With Morse taper shank
- With cemented-carbide cutting plates in accordance with DIN 8010

Applications
For drilling in steel **750–1400 N/mm²**, steel casting **over 700 N/mm²**, grey cast iron, chilled cast iron, malleable iron and red bronze - gunmetal, brass, bronze, etc.

Quality
Cutting edges carbide-tipped — K10/20.

11120



d_1 mm	l_2 mm	l_1 mm	Shank MK	11120	...
10	50	140	1		**101**
12	56	146	1		**105**
13	56	146	1		**106**

d_1 mm	l_2 mm	l_1 mm	Shank MK	11120	...
14	63	168	2		**107**
15	63	168	2		**108**
16	70	175	2		**109**

d_1 mm	l_2 mm	l_1 mm	Shank MK	11120	...
17	70	175	2		**110**
18	80	185	2		**111**
20	90	215	3		**113**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–150	50–100	40–90	30–45	20–40	40–65	40–60	30–50	20–30	-	-	-	-	15–30	8–15	18–35	30–80	20–100

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11160 - 11162 Indexable insert drill MaxiDrill Classic

3xD

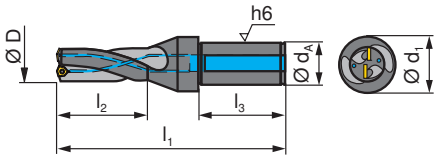
CUTTING SOLUTIONS BY CERATIZIT

Design
- Right cutting
- With a cylindrical tool chuck
- With internal cooling

Scope of delivery:
- Basic body with clamping screws
- Without indexable inserts

Applications
Rotating or stationary in all stable machine tools.

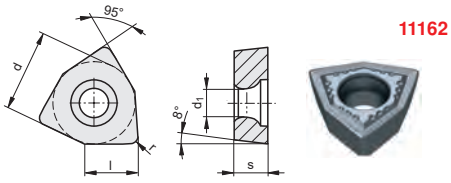
11160



Ø D mm	Designation	Ø d_A mm	Ø d_1 mm	l_1 mm	l_2 mm	l_3 mm	Indexable inserts	11160 ...
18	3D.180.R.03	25	32	140	56	86	WC.. / XO.. 03..	105
19	3D.190.R.03	25	32	143	59	89	WC.. / XO.. 03..	106
20	3D.200.R.03	25	32	146	62	92	WC.. / XO.. 03..	107
21	3D.210.R.03	25	32	149	65	95	WC.. / XO.. 03..	108
22	3D.220.R.03	25	32	152	68	98	WC.. / XO.. 03..	109
23	3D.230.R.03	25	32	155	71	101	WC.. / XO.. 03..	110
24	3D.240.R.05	25	32	158	74	104	WC.. / XO.. 05..	111
25	3D.250.R.05	25	32	161	77	107	WC.. / XO.. 05..	112
26	3D.260.R.05	25	32	164	80	110	WC.. / XO.. 05..	113
27	3D.270.R.05	25	32	167	83	113	WC.. / XO.. 05..	114
28	3D.280.R.05	25	32	170	86	116	WC.. / XO.. 05..	115
29	3D.290.R.05	25	32	173	89	119	WC.. / XO.. 05..	116
30	3D.300.R.06	32	49	180	92	122	WC.. / XO.. 06..	117
31	3D.310.R.06	32	49	183	95	125	WC.. / XO.. 06..	118
32	3D.320.R.06	32	49	186	98	128	WC.. / XO.. 06..	119
33	3D.330.R.06	32	49	189	101	131	WC.. / XO.. 06..	120
34	3D.340.R.06	32	49	192	104	134	WC.. / XO.. 06..	121
35	3D.350.R.06	32	49	195	107	137	WC.. / XO.. 06..	122
36	3D.360.R.06	32	49	198	110	140	WC.. / XO.. 06..	123
37	3D.370.R.06	32	49	201	113	143	WC.. / XO.. 06..	124
38	3D.380.R.07	32	49	204	116	146	WC.. / XO.. 07..	125
39	3D.390.R.07	32	49	207	119	149	WC.. / XO.. 07..	126
40	3D.400.R.07	32	49	210	122	152	WC.. / XO.. 07..	127
41	3D.410.R.07	32	49	213	125	155	WC.. / XO.. 07..	128
42	3D.420.R.07	32	49	216	128	158	WC.. / XO.. 07..	129
43	3D.430.R.07	32	49	219	131	161	WC.. / XO.. 07..	130
44	3D.440.R.07	32	49	222	134	164	WC.. / XO.. 07..	131
45	3D.450.R.07	40	59	240	137	172	WC.. / XO.. 07..	132
46	3D.460.R.07	40	59	243	140	175	WC.. / XO.. 07..	133
47	3D.470.R.07	40	59	246	143	178	WC.. / XO.. 07..	134
48	3D.480.R.07	40	59	249	146	181	WC.. / XO.. 07..	135
49	3D.490.R.07	40	59	252	149	184	WC.. / XO.. 07..	136
50	3D.500.R.07	40	59	255	152	187	WC.. / XO.. 07..	137

Applications P M S
Cemented carbide type CTPP430
Coating coated

11162



Designation	d mm	l mm	s mm	r mm	d_1 mm		11162 ...
XOMT 020204SN	5.50	3.39	2.30	0.40	2.25	10 pcs.	201
XOMT 030204SN	6.00	3.97	2.50	0.40	2.50	10 pcs.	202
XOMT 050304SN	8.00	5.29	3.00	0.40	2.80	10 pcs.	203
XOMT 060304SN	10.00	6.62	3.00	0.40	4.00	10 pcs.	204
XOMT 070304SN	12.00	3.97	3.80	0.40	4.40	10 pcs.	205

Spare parts

for indexable inserts Size	Clamping screw	Key	Clamping screw 17999 ...	Key 51932 ...
WC.. / XO.. 02	M 2.0 x 4.8	T 6	101	202
WC.. / XO.. 03	M 2.2 x 5.0	T 7	102	203
WC.. / XO.. 05	M 2.5 x 6.0	T 8	103	204
WC.. / XO.. 06/07	M 3.5 x 11.0	T 15	104	207

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
150–500	150–300	150–300	180–300	160–280	140–250	130–220	100–200	100–200	-	-	-	-	100–160	80–150	40–100	80–200	-

Indexable insert drills

11165 - 11168 Indexable insert drill MaxiDrill 900

CUTTING SOLUTIONS BY CERATIZIT

11165 - 11166

Design
- Strong structure
- Circumferential and centre cutting edge same indexable insert
- Long service life thanks to hard and tough coating
- Optimum chip removal

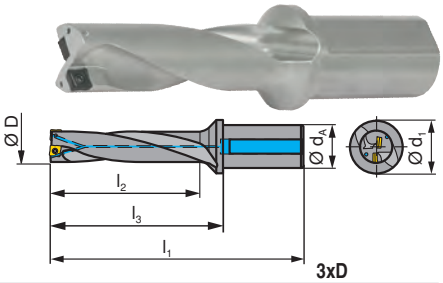
Scope of delivery:
- Basic body with clamping screws
- **Without** indexable inserts

11165
Applications
For drilling depths up to **3xD.**

11166
Applications
For drilling depths up to **5xD.**

11168
Indexable inserts
Design
- 4 effective cutting edges per indexable insert
- Indexable inserts wideband type

Note:
Please note the achievable drilling tolerances in the cutting data! **11165**



Ø D mm	Designation	Ø d_A mm	Ø d_1 mm	l_1 mm	l_2 mm	l_3 mm	Indexable inserts 11165	...
12	MD-900.3D.120.R.03-C	20	28	102	26	52	SONT 03..	099
13	MD-900.3D.130.R.03-C	20	28	105	39	54	SONT 03..	100
14	MD-900.3D.140.R.04-C	20	30	109	42	59	SONT 04..	101
15	MD-900.3D.150.R.04-C	20	30	112	45	62	SONT 04..	102
16	MD-900.3D.160.R.05-C	20	30	115	48	65	SONT 05..	103
17	MD-900.3D.170.R.05-C	20	30	118	51	68	SONT 05..	104
18	MD-900.3D.180.R.06-C	25	32	128	54	72	SONT 06..	105
19	MD-900.3D.190.R.06-C	25	32	131	57	75	SONT 06..	106
20	MD-900.3D.200.R.06-C	25	32	134	60	78	SONT 06..	107
21	MD-900.3D.210.R.07-C	25	32	138	63	82	SONT 07..	108
22	MD-900.3D.220.R.07-C	25	32	141	66	85	SONT 07..	109
23	MD-900.3D.230.R.07-C	25	32	144	69	88	SONT 07..	110
24	MD-900.3D.240.R.08-C	32	40	155	72	95	SONT 08..	111
25	MD-900.3D.250.R.08-C	32	40	158	75	98	SONT 08..	112
26	MD-900.3D.260.R.08-C	32	40	161	78	101	SONT 08..	113
27	MD-900.3D.270.R.08-C	32	40	164	81	104	SONT 08..	114
28	MD-900.3D.280.R.09-C	32	40	167	84	107	SONT 09..	115
29	MD-900.3D.290.R.09-C	32	40	170	87	110	SONT 09..	116
30	MD-900.3D.300.R.09-C	32	40	173	90	113	SONT 09..	117
31	MD-900.3D.310.R.09-C	32	40	176	93	116	SONT 09..	118
32	MD-900.3D.320.R.09-C	32	40	179	96	119	SONT 09..	119
33	MD-900.3D.330.R.10-C	40	50	193	99	125	SONT 10..	120
34	MD-900.3D.340.R.10-C	40	50	196	102	128	SONT 10..	121
35	MD-900.3D.350.R.10-C	40	50	199	105	131	SONT 10..	122
36	MD-900.3D.360.R.10-C	40	50	202	108	134	SONT 10..	123
37	MD-900.3D.370.R.12-C	40	56	211	111	141	SONT 12..	124
38	MD-900.3D.380.R.12-C	40	56	214	114	144	SONT 12..	125
39	MD-900.3D.390.R.12-C	40	56	217	117	147	SONT 12..	126
40	MD-900.3D.400.R.12-C	40	56	220	120	150	SONT 12..	127
41	MD-900.3D.410.R.12-C	40	56	223	123	153	SONT 12..	128
42	MD-900.3D.420.R.13-C	40	60	229	126	159	SONT 13..	129
43	MD-900.3D.430.R.13-C	40	60	232	129	162	SONT 13..	130
44	MD-900.3D.440.R.13-C	40	60	235	132	165	SONT 13..	131
45	MD-900.3D.450.R.13-C	40	60	238	135	168	SONT 13..	132
46	MD-900.3D.460.R.13-C	40	60	241	138	171	SONT 13..	133
47	MD-900.3D.470.R.15-C	40	60	245	141	175	SONT 15..	134
48	MD-900.3D.480.R.15-C	40	60	248	144	178	SONT 15..	135
49	MD-900.3D.490.R.15-C	40	60	251	147	181	SONT 15..	136
50	MD-900.3D.500.R.15-C	40	60	254	150	184	SONT 15..	137
51	MD-900.3D.510.R.15-C	40	60	257	153	187	SONT 15..	138
52	MD-900.3D.520.R.15-C	40	60	260	156	190	SONT 15..	139
53	MD-900.3D.530.R.15-C	40	60	263	159	193	SONT 15..	140
54	MD-900.3D.540.R.15-C	40	60	266	162	196	SONT 15..	141
55	MD-900.3D.550.R.17-C	40	60	270	165	200	SONT 17..	142
56	MD-900.3D.560.R.17-C	40	60	273	168	203	SONT 17..	143
57	MD-900.3D.570.R.17-C	40	60	276	171	206	SONT 17..	144
58	MD-900.3D.580.R.17-C	40	60	279	174	209	SONT 17..	145
59	MD-900.3D.590.R.17-C	40	60	282	177	212	SONT 17..	146
60	MD-900.3D.600.R.17-C	40	62	285	180	215	SONT 17..	147
61	MD-900.3D.610.R.17-C	40	62	288	183	218	SONT 17..	148
62	MD-900.3D.620.R.17-C	40	64	291	186	221	SONT 17..	149

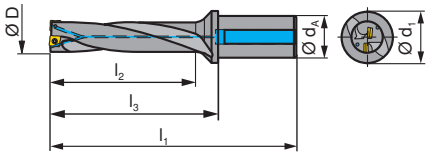
Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11165 - 11168 Indexable insert drill MaxiDrill 900

5xD

Continued

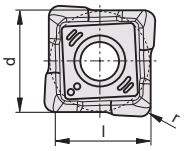


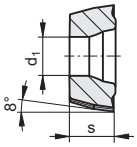
11166

5xD

Ø D mm	Designation	Ø d_A mm	Ø d_1 mm	l_1 mm	l_2 mm	l_3 mm	Indexable inserts	11166	...
12	MD-900.5D.120.R.03-C	20	28	126	60	76	SONT 03..		099
13	MD-900.5D.130.R.03-C	20	28	131	65	81	SONT 03..		100
14	MD-900.5D.140.R.04-C	20	30	137	70	87	SONT 04..		101
15	MD-900.5D.150.R.04-C	20	30	142	75	92	SONT 04..		102
16	MD-900.5D.160.R.05-C	20	30	147	80	97	SONT 05..		103
17	MD-900.5D.170.R.05-C	20	30	152	85	102	SONT 05..		104
18	MD-900.5D.180.R.06-C	25	32	164	90	108	SONT 06..		105
19	MD-900.5D.190.R.06-C	25	32	169	95	113	SONT 06..		106
20	MD-900.5D.200.R.06-C	25	32	174	100	118	SONT 06..		107
21	MD-900.5D.210.R.07-C	25	32	179	105	124	SONT 07..		108
22	MD-900.5D.220.R.07-C	25	32	184	110	128	SONT 07..		109
23	MD-900.5D.230.R.07-C	25	32	189	115	133	SONT 07..		110
24	MD-900.5D.240.R.08-C	32	40	203	120	143	SONT 08..		111
25	MD-900.5D.250.R.08-C	32	40	208	125	148	SONT 08..		112
26	MD-900.5D.260.R.08-C	32	40	212	130	152	SONT 08..		113
27	MD-900.5D.270.R.08-C	32	40	217	135	157	SONT 08..		114
28	MD-900.5D.280.R.09-C	32	40	221	140	161	SONT 09..		115
29	MD-900.5D.290.R.09-C	32	40	226	145	166	SONT 09..		116
30	MD-900.5D.300.R.09-C	32	40	230	150	170	SONT 09..		117
31	MD-900.5D.310.R.09-C	32	40	235	155	175	SONT 09..		118
32	MD-900.5D.320.R.09-C	32	40	239	160	179	SONT 09..		119
33	MD-900.5D.330.R.10-C	40	50	259	165	191	SONT 10..		120
34	MD-900.5D.340.R.10-C	40	50	264	170	196	SONT 10..		121
35	MD-900.5D.350.R.10-C	40	50	269	175	201	SONT 10..		122
36	MD-900.5D.360.R.10-C	40	50	274	180	206	SONT 10..		123
37	MD-900.5D.370.R.12-C	40	56	285	185	215	SONT 12..		124
38	MD-900.5D.380.R.12-C	40	56	290	190	220	SONT 12..		125
39	MD-900.5D.390.R.12-C	40	56	295	195	225	SONT 12..		126
40	MD-900.5D.400.R.12-C	40	56	300	200	230	SONT 12..		127
41	MD-900.5D.410.R.12-C	40	56	305	205	235	SONT 12..		128

Indexable inserts and spare parts





11168

N P M K S

Use
Cemented carbide type
Coating
CTPP430
coated

Designation	d mm	l mm	s mm	r mm	d_1 mm		11168	...
SONT 031804ER-M30	5.4	3.9	1.8	0.4	2.1	10 pcs.		100
SONT 042105ER-M30	4.6	4.2	2.1	0.5	2.25	10 pcs.		101
SONT 052306ER-M30	5.3	4.8	2.3	0.6	2.25	10 pcs.		102
SONT 062506ER-M30	5.9	5.5	2.5	0.6	2.5	10 pcs.		103
SONT 072907ER-M30	6.5	6.1	2.9	0.7	2.5	10 pcs.		104
SONT 083308ER-M30	7.7	7.3	3.3	0.8	2.9	10 pcs.		105

N P M K S

Use
Cemented carbide type
Coating
CTPP430
coated

Designation	d mm	l mm	s mm	r mm	d_1 mm		11168	...
SONT 093808ER-M30	8.9	8.5	3.8	0.8	3.5	10 pcs.		106
SONT 104408ER-M30	10.1	9.6	4.4	0.8	4.1	10 pcs.		107
SONT 124810ER-M30	11.6	11.0	4.8	1.0	4.1	10 pcs.		108
SONT 135012ER-M30	13.0	12.2	5.0	1.2	5.3	10 pcs.		109
SONT 155312ER-M30	15.2	14.4	5.3	1.2	5.3	10 pcs.		110
SONT 175612ER-M30	17.5	16.7	5.6	1.2	5.3	10 pcs.		111

Spare parts

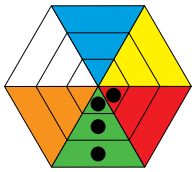
for indexable inserts Size	Clamping screw	Key	Clamping screw 17999	...	Key 51932	...
SONT 03..	M 1.8 x 3.0	IP 6		111		402
SONT 04/05..	M 2.0 x 4.0	IP 6		105		402
SONT 06/07..	M 2.2 x 5.0	IP 7		106		403
SONT 08..	M 2.5 x 6.0	IP 8		107		404
SONT 09..	M 3.0 x 7.0	IP 9		108		405
SONT 10/12..	M 3.5 x 8.6	IP 15		109		407
SONT 13/15/17..	M 4.5 x 10.5	IP 20		110		408

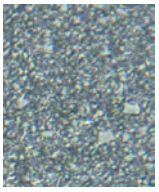
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
150–500	150–300	150–300	180–300	160–280	140–250	130–220	100–200	100–200	-	-	-	-	100–160	80–150	40–100	80–200	-

( ) = Items with prices in brackets partly available from stock.

Info — EcoCut / drilling multi-function tools

H216T
HW-K15

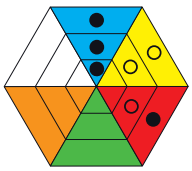


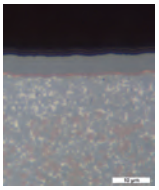


Ductility
0 2 4 6 8 10

Level of wear resistance
0 2 4 6 8 10

CTCP435/GM40
HC-P35
HC-M30
HC-K40

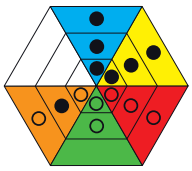


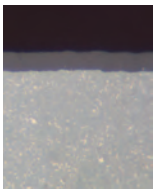


Ductility
0 2 4 6 8 10

Level of wear resistance
0 2 4 6 8 10

CTPP430/SR226
HC-P30
HC-M25
HC-S25



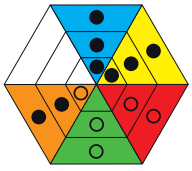


Ductility
0 2 4 6 8 10

Level of wear resistance
0 2 4 6 8 10

CTPP435
HC-P35
HC-M30
HC-S30

EcoCut Mini



Ductility
0 2 4 6 8 10

Level of wear resistance
0 2 4 6 8 10

CUTTING SOLUTIONS BY CERATIZIT
PREMIUM PARTNER

Properties/Application:

- Ideally suited to aluminium
- High wear resistance
- High heat resistance
- Low adhesion

11170 - 11172 Drilling and lathe tool EcoCut Mini

CUTTING SOLUTIONS BY CERATIZIT

Design
- Single-edged tool for drilling and turning
- New cemented-carbide type with improved toughness and heat resistance

Quality
Universal ultra-fine grain CTPP435.

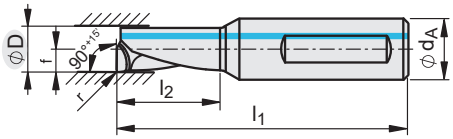
Note:
Use only with holder art. no. 11172.

11170
Applications
For drilling depths up to **2.25xD.**

11171
Applications
For drilling depths up to **4xD.**

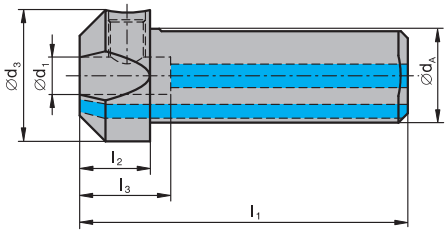
11172
Holder for fitting the EcoCut Mini

11170 - 11171



2.25xD							right		left	
Ø D mm	Designation	Ø d_A mm	l_1 mm	l_2 mm	f mm	r mm	11170	...	11170	...
4	ECM 04R/L-2.25D	6	35	9.00	2.0	0.2		101		201
5	ECM 05R/L-2.25D	6	37	11.25	2.5	0.2		102		202
6	ECM 06R/L-2.25D	8	38	13.50	3.0	0.2		103		203
7	ECM 07R/L-2.25D	8	42	15.75	3.5	0.2		104		204
8	ECM 08R/L-2.25D	8	45	18.00	4.0	0.2		105		205

11172



4xD							right		left	
Ø D mm	Designation	Ø d_A mm	l_1 mm	l_2 mm	f mm	r mm	11171	...	11171	...
4	ECM 04R/L-4.00D	6	41	16	2.0	0.2		101		201
5	ECM 05R/L-4.00D	6	45	20	2.5	0.2		102		202
6	ECM 06R/L-4.00D	8	49	24	3.0	0.2		103		203
7	ECM 07R/L-4.00D	8	53	28	3.5	0.2		104		204
8	ECM 08R/L-4.00D	8	57	32	4.0	0.2		105		205

Holder							
Ø d_1 mm	Designation	Ø d_A mm	Ø d_3 mm	l_1 mm	l_2 mm	11172	...
6	EC-ADX20-06	20	25	65	14		101
8	EC-ADX20-08	20	25	65	14		102

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–1300	80–600	80–300	60–230	60–200	60–180	50–160	40–150	40–140	-	-	-	-	40–200	40–100	30–120	80–200	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11173 - 11175 Drilling and lathe tool EcoCut Classic

Z1

CUTTING SOLUTIONS BY CERATIZIT

Design
- Drilling and turning in one
- Multifunction tool with indexable insert
- Made of high-quality tool steel with hard and tough coating
- Chip booster coolant hole

Applications
- For drilling into the main body with an even base of the hole
- For facing
- For external and internal turning

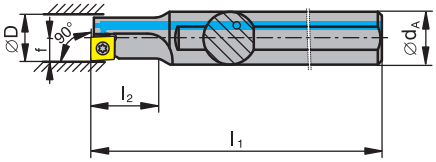
Note:
For drilling depths up to 3xD deliverable on request.

11173
Design
- Straight chip area

Applications
For drilling depths up to **1.5xD.**

1,5xD

11173



1.5xD

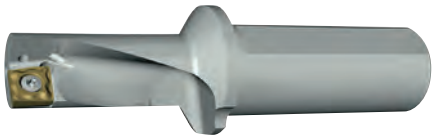
Ø D mm	Designation	Ø d_A mm	l_1 mm	l_2 mm	f mm	Indexable inserts	right 11173	...	left 11173	...
8	ECC 08R/L-1.5D 04	12	80	12	4	XC.. 0401..		101		201
10	ECC 10R/L-1.5D 05	12	90	15	5	XC.. 0502..		102		202
12	ECC 12R/L-1.5D 06	16	100	18	6	XC.. 0602..		103		203
14	ECC 14R/L-1.5D 07	16	110	21	7	XC.. 0703..		104		204
16	ECC 16R/L-1.5D 08	20	125	24	8	XC.. 0803..		105		205
18	ECC 18R/L-1.5D 09	25	135	27	9	XC.. 09T3..		106		206
20	ECC 20R/L-1.5D 10	25	150	30	10	XC.. 10T3..		107		207
25	ECC 25R/L-1.5D 13	32	180	37.5	12.5	XC.. 1304..		108		208
32	ECC 32R/L-1.5D 17	40	200	48	16	XC.. 1705..		109		209

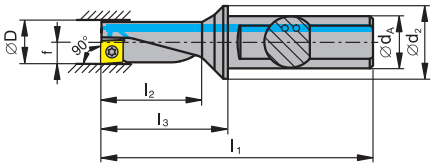
11174
Design
- Twisted chip area
- Optimised, axial collar

Applications
For drilling depths up to **2.25xD.**

2,25xD

11174





2.25xD

Ø D mm	Designation	Ø d_A mm	Ø d_2 mm	l_1 mm	l_2 mm	l_3 mm	f mm	Indexable inserts	right 11174	...	left 11174	...
8	ECC 08R/L-2.25D 04	10	15	60.0	18.0	22.0	4	XC.. 0401..		101		201
10	ECC 10R/L-2.25D 05	12	18	69.5	22.5	27.5	5	XC.. 0502..		102		202
12	ECC 12R/L-2.25D 06	16	22	78.0	27.0	33.0	6	XC.. 0602..		103		203
14	ECC 14R/L-2.25D 07	16	23	83.5	31.5	38.5	7	XC.. 0703..		104		204
16	ECC 16R/L-2.25D 08	20	28	94.0	36.0	44.0	8	XC.. 0803..		105		205
18	ECC 18R/L-2.25D 09	25	36	109.5	40.5	53.5	9	XC.. 09T3..		106		206
20	ECC 20R/L-2.25D 10	25	35	111.0	45.0	55.0	10	XC.. 10T3..		107		207
25	ECC 25R/L-2.25D 13	32	44	129.0	56.5	69.0	12.5	XC.. 1304..		108		208
32	ECC 32R/L-2.25D 17	40	54	158.0	72.0	88.0	16	XC.. 1705..		109		209

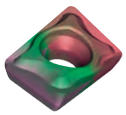
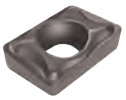
Continued

11173 - 11175 Drilling and lathe tool EcoCut Classic

Z1 | 1,5xD | 2,25xD

Continued

Indexable inserts and spare parts

Use			N	P M K	N P M K S
Cemented carbide type			H216T	CTCP435	CTPP430
Coating			Uncoated	Colourful coat	PVD/TiAlN
Coating thickness			-	7.5 µm	7.0 µm
Description			XCET ..	XCNT ..	XCNT ..
	r mm		11175 ...	11175 ...	11175 ...
040102ER	0.2	10 pcs.		201	301
040102FR-27P	0.2	10 pcs.	101		
040104ER	0.4	10 pcs.		202	302
040104FR-27P	0.4	10 pcs.	102		
050202EN	0.2	10 pcs.		203	303
050202FN-27P	0.2	10 pcs.	103		
050204EN	0.4	10 pcs.		204	304
050204FN-27P	0.4	10 pcs.	104		
060202EN	0.2	10 pcs.		205	305
060202FN-27P	0.2	10 pcs.	105		
060204EN	0.4	10 pcs.		206	306
060204FN-27P	0.4	10 pcs.	106		
070304EN	0.4	10 pcs.		207	307
070304FN-27P	0.4	10 pcs.	107		
080304EN	0.4	10 pcs.		208	308
080304FN-27P	0.4	10 pcs.	108		
09T304EN	0.4	10 pcs.		209	309
09T304FN-27P	0.4	10 pcs.	109		
10T304EN	0.4	10 pcs.		210	310
10T304FN-27P	0.4	10 pcs.	110		
10T308EN	0.8	10 pcs.		211	311
10T308FN-27P	0.8	10 pcs.	111		
130404EN	0.4	10 pcs.		212	312
130404FN-27P	0.4	10 pcs.	112		
130408EN	0.8	10 pcs.		213	313
130408FN-27P	0.8	10 pcs.	113		
170508EN	0.8	10 pcs.		214	314
170508FN-27P	0.8	10 pcs.	114		

Spare parts for indexable inserts Size	Clamping screw	Key	Clamping screw 10	...	Key	...
			17999		51932	
XC.. 0401..	M 1.8 x 3.0	IP 6	3.95	111	4.65	402
XC.. 0502..	M 2.0 x 4.3	IP 6	3.45	105	4.65	402
XC.. 0602..	M 2.2 x 5.0	IP 7	3.35	106	4.65	403
XC.. 0703..	M 2.5 x 6.0	IP 8	4.30	107	4.65	404
XC.. 0803../09T3..	M 3.0 x 7.0	IP 9	3.25	108	4.85	405
XC.. 10T3	M 3.5 x 8.6	IP 15	3.25	109	5.20	407
XC.. 1304../1705..	M 4.5 x 10.5	IP 20	3.25	110	5.90	408

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100–1500	100–800	100–400	60–230	60–200	60–180	50–160	40–150	40–140	-	-	-	-	40–200	40–100	30–120	80–250	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

11400 Cemented-carbide multi-purpose drill bit Multi Construction CYL-9

BOSCH

Multi-Construction

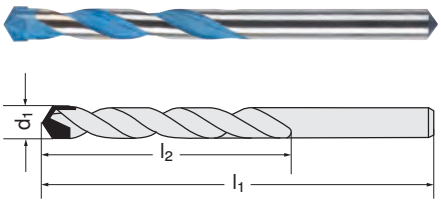
Design
Special multi-purpose cutting edge angle. Centring geometry for precise spot drilling on hard surfaces.

Applications
For rotating applications in drills and hammer drills. Drills in masonry, tiles (up to scratch hardness 8), wood, chipboard, metal, plastics, concrete. Ideal for splinter-free, precise drilling in tiles.

Quality
Diamond-ground cemented-carbide cutting edges.

Note:
In order to ensure the fastest possible drilling progress in all materials, the cutting edges must always be sharp. Resharpen multi-purpose drill bits on silicon or diamond sanding discs.

11400



d_1 mm	l_2 mm	l_1 mm	11400	...
4.0	40	75		102
5.0	50	85		103
6.0	60	100		105

d_1 mm	l_2 mm	l_1 mm	11400	...
L 6.0	**90**	**150**		106
8.0	80	120		108
L 8.0	**200**	**250**		109

d_1 mm	l_2 mm	l_1 mm	11400	...
10.0	80	120		111
12.0	90	150		113

11420 Cemented-carbide stone drill (impact drill bit) set

BOSCH

Design
Impact and rotary drill based on ISO 5468 with straight shank. Extremely robust and powerful impact drill bit with Power Grip system for significantly improved fit of the drill in the drill chuck. Hammer drill head construction ensures very high drilling capacity and service life. In box.

Applications
In hammer drills. For granite, concrete, masonry, sand-lime brick, natural and synthetic stone.

Quality
Diamond-ground cemented-carbide cutting edge, completely embedded.

11420

	Ø mm	11420	...
7 pieces	4/5/2x6/8/10/12		102

11425 Cemented-carbide concrete and stone drill CYL-5

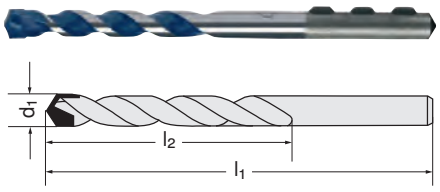
BOSCH

Design
Impact and rotary drill based on ISO 5468 with straight shank. Extremely robust and powerful impact drill bit with Power Grip system for significantly improved fit of the drill in the drill chuck. Hammer drill head construction ensures very high drilling capacity and service life.

Applications
In hammer drills. For granite, concrete, masonry, sand-lime brick, natural and synthetic stone.

Quality
Diamond-ground cemented-carbide cutting edge completely embedded.

11425



d_1 mm	l_2 mm	l_1 mm	11425	...
3.0	50	90		101
4.0	50	90		102
5.0	50	100		104
5.5	50	100		106
6.0	50	100		107

d_1 mm	l_2 mm	l_1 mm	11425	...
L 6.0	**100**	**150**		108
6.5	50	100		109
7.0	50	100		110
8.0	50	100		111
9.0	50	100		114

d_1 mm	l_2 mm	l_1 mm	11425	...
10.0	100	150		115
12.0	90	150		118
14.0	90	150		121
16.0	140	200		123
20.0	140	200		125

11432 Cemented-carbide hammer drill bit set SDS-plus

BOSCH

Design
Patented 4-spiral design to efficiently remove the drill cuttings. Durable toothed cemented carbide with active centring point for fast cutting in concrete. Exact drill holes of the highest dimensional accuracy thanks to the wear indicator. With SDS-plus mount.

Applications
In hammer drills with SDS-plus mount.
For drilling masonry, concrete, natural and synthetic stone.

Quality
Durable, toothed cemented carbide.

SDS plus

11432

	Set contents mm	Design	11432	...
7 pieces	5x110/6x110/6x160/8x160/8x160/10x160/12x160	in metal box		101

11436 Cemented-carbide hammer drill bit SDS-plus

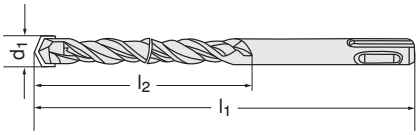
BOSCH

Design
Patented 4-spiral design (from d_1 18 mm 2-spiral design) to efficiently remove the drill cuttings. Durable toothed cemented carbide with active centring point for fast cutting in concrete. Exact drill holes of the highest dimensional accuracy thanks to the wear indicator. **With SDS-plus mount.**

Applications
In hammer drills with SDS-plus mount.
For drilling masonry, concrete, natural and synthetic stone.
Quality
Durable, toothed cemented carbide.

11436 102-157 + 201-203

11436 158-170



d_1 mm	l_2 mm	l_1 mm	11436 ...
4	50	115	102
5	50	115	103
L 5	100	165	104
6	50	115	108
L 6	100	165	109
L 6	150	215	110
L 6	200	265	111
7	100	165	118
8	50	115	119
L 8	100	165	120
L 8	150	215	121
L 8	200	265	122
L 8	400	465	123
10	50	115	128
L 10	100	165	129
L 10	150	215	130
L 10	200	265	131
L 10	250	315	132

d_1 mm	l_2 mm	l_1 mm	11436 ...
L 10	400	465	134
L 10	550	605	135
12	100	165	139
L 12	150	215	140
L 12	200	265	141
L 12	400	465	143
L 12	550	605	144
L 12	950	1005	145
14	100	165	147
L 14	150	215	148
L 14	200	265	149
L 14	250	315	150
L 14	400	465	151
L 14	550	605	152
L 14	950	1005	153
15	100	165	201
L 15	200	265	202
L 15	400	465	203

d_1 mm	l_2 mm	l_1 mm	11436 ...
L 16	150	215	155
L 16	200	265	156
L 16	400	465	157
18	150	215	158
L 18	250	315	159
L 18	550	600	160
L 18	950	1000	161
20	150	200	162
L 20	400	450	163
L 20	550	600	164
L 20	950	1000	165
22	400	450	166
L 22	950	1000	167
25	400	450	168
26	200	250	169
L 26	400	450	170

11437 SDS-plus RX4 hammer drill bit with 4 cutting edges

Design
- Four symmetrical 90° cutting edges ensure circular holes for optimum dowel assembly, no blocking of the drill when drilling in reinforced concrete
- One-piece cemented-carbide plate recessed deep in the drill head, with centring point, for easy, precise spot drilling and outstanding service life
- Large spiral design ensures optimum removal of drilling cuttings
- 4-spiral spiral geometry for minimum vibration and low, uniform wear

Applications
In hammer drills with SDS-plus mount.
For drilling masonry, concrete, natural and synthetic stone.
Quality
Cemented carbide.

11437 201

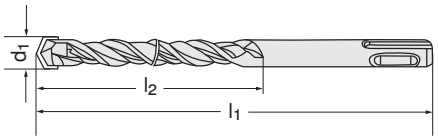
11437 200

	Set contents Ø mm	Design	11437 ...
5 pieces	5x110/6x110/6x160/8x160/10x160	in box	200
7 pieces	5x110/6x110/8x110/6x160/8x160/10x160/12x160	in box	201

d_1 mm	l_2 mm	l_1 mm	11437 ...
5	50	110	100
6	50	110	105
6	100	160	106
6	150	210	107
6	200	260	108
8	50	110	116
8	100	160	117
8	150	210	118
8	200	260	119

d_1 mm	l_2 mm	l_1 mm	11437 ...
10	50	110	124
10	100	160	125
10	150	210	126
10	200	260	127
12	100	160	132
12	150	210	133
12	200	260	134
14	100	160	138
14	150	210	139
14	200	260	140

11437 100-140



= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

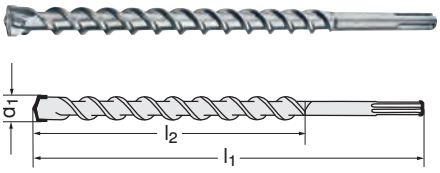
11440 Cemented-carbide hammer drill bit SDS-max

BOSCH

Design
Extremely robust and aggressive solid-carbide S-cutting edge and inclined minor cutting edges. Thanks to the active centring point, the drill bit penetrates quickly into concrete and reinforced concrete. The vibration-optimised spiral design delivers optimum power transmission and maximum speed. No getting caught, no risk of breakage with reinforced chamfers. Precise drill holes of the highest dimensional accuracy due to the wear indicator.
In Powerbox.

Applications
In all hammer drills with SDS-max mount. For drilling in concrete, reinforced concrete, masonry, sand-lime brick.

11440



d_1 mm	l_2 mm	l_1 mm	11440	...
12	200	340		105
L 12	400	540		106
14	200	340		107
L 14	400	540		108
16	200	340		109
L 16	400	540		110
18	200	340		111
L 18	400	540		112

d_1 mm	l_2 mm	l_1 mm	11440	...
20	200	320		113
L 20	400	520		114
22	200	320		115
L 22	400	520		116
24	400	520		118
25	200	320		119
L 25	400	520		120
28	200	320		122

d_1 mm	l_2 mm	l_1 mm	11440	...
L 28	400	520		123
30	200	320		124
L 30	400	520		125
32	200	320		126
L 32	400	520		127
L 35	400	520		131
40	400	520		133

11441 Drill holders

BOSCH

Applications
For mounting **SDS-plus** drills in machines with **SDS-max** mount.

11441

Length mm	11441	...
220		101

11612 - 11621 Hammer-resistant impact core drill bits (socket outlet drill bits)

BOSCH

11612
Impact core drill bits
Design
- 6 teeth, max. drilling depth 55 mm
- Female thread M 16 for screwing in drive arbors art. no. 11618 and 11619
- Delivery **without** drive arbor and centre drill

Applications
In hammer drills with hexagon, in hammer drills with SDS-plus/SDS-top drive arbor.
For concrete and masonry.

Quality
Cemented-carbide teeth in hammer drill bit quality.

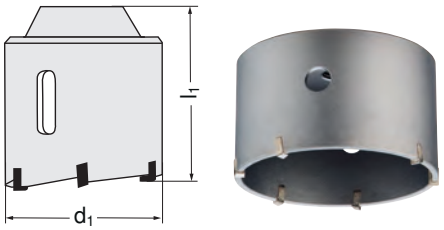
Note:
Min. required machine performance 800 W.

11618
Drive arbor
Design
Length 78 mm, **hexagon shank**, SW12, receiving thread M 16.
Applications
For mounting an impact core drill bit art. no. 11612 and the centre drill art. no. 11621.

11619
Drive arbor
Design
SDS-plus shank, length 105 mm, receiving thread M 16.
Applications
For mounting an impact core drill bit art. no. 11612 and the centre drill art. no. 11621.

11621
Centre drill
Design
With clamping surface, 8 x 120 mm for drive arbors art. no. 11618 and 11619.

11612



11618

11619

11621

d_1 mm	l_1 mm	Impact core drill bits 11612	...	Hexagonal shank 11618	...	SDS-plus shank 11619	...	Centre drill 11621	...
68	72		212						
82	72		213						
-	-				101		101		101

12105 - 12107 Conical countersink (countersink)

HSS Uni

Design
- **Multi-flute**
- Right cutting
- Straight shank (shape A)

Applications
For deburring, edge breaking and countersinking holes in normal machinable materials, such as: Steel, cast iron, non-ferrous metals and light alloys.

Quality
HSS.

12105
Design
DIN 335, **countersink angle 90°.**

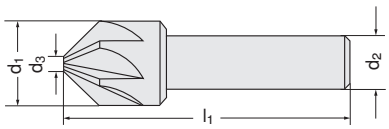
12107
Design
DIN 347, **countersink angle 120°.**

90°

12105

120°

12107



d_1 mm	d_2 h9 mm	l_1 mm	d_3 mm	90° 12105	...
8	8	48	1.5		102
10	8	48	1.8		103
12.5	8	48	2.0		104
16	10	56	3.2		105
20	10	60	5.0		106
25	12	70	7.0		107
31.5	16	75	9.0		108
				120°	
d_1 mm	d_2 h9 mm	l_1 mm	d_3 mm	12107	...
16	10	53	3.2		101

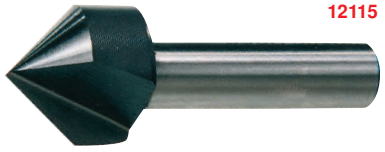
12115 Conical countersink and countersink deburring tools

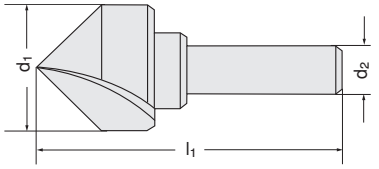
90° HSS-E Uni

Design
Countersink angle 90°, single edged, clockwise-cutting, straight shank (shape A).

Quality
HSS-E.

12115





Countersink range mm	d_1 mm	d_2 mm	l_1 mm	HSS-E 12115	...
1 - 8	8	6	50		102
1 - 10	10	8	50		103
2 - 12	12	8	56		104
2 - 16	16	10	60		105
2 - 20	20	10	63		106
2 - 25	25	12	67		107
3 - 30	30	12	70		108
4 - 40	40	15	92		109
5 - 50	50	15	100		110

12205 - 12207 Countersinking and deburring tools

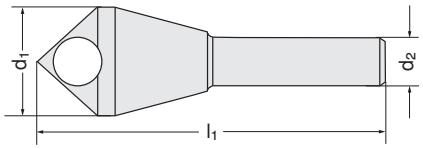
90° Uni

Design
Countersink angle 90°, clockwise-cutting, straight shank.

Applications
For burr-free and chatter-free countersinking and deburring of holes in almost all materials.

12205
Quality
HSS.

12207
Quality
HSS/TiN coated.



HSS

12205 101

HSS

12205 102-106

HSS TiN

12207

Countersink range mm	d_1 mm	d_2 mm	l_1 mm	HSS 12205	...	HSS/TiN 12207	...
1 - 4	6.35	6.35	45		101		
2–5	10	6	46		102		102
5–10	14	8	65		103		103
10–15	20	10	65		104		104
15–20	28	12	85		105		105
20 - 25	30	15	95		106		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
12205																	
25–40	10–30	25–80	26–30	25–28	18–25	6–10	5–8	2–5	-	-	-	-	4–10	4–10	4–10	9–15	10–60
12207																	
30–80	30–50	30–100	32–36	30–34	22–30	7–12	6–10	3–6	-	-	-	-	5–12	5–12	5–12	10–25	10–60

Conical countersink and countersink deburring tools

12240 - 12241 Conical countersink and countersink deburring tools

DIN 334 | 60° | Uni

ATORN®

Design
- **Countersink angle 60°**
- **3 cutting edges**
- Right cutting
- Straight shank (shape C)

Applications
For burr-free and chatter-free countersinking and deburring of steel, cast iron, non-ferrous metals and light metals.

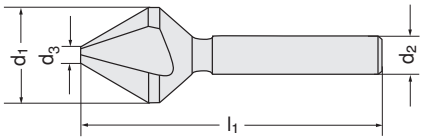
Note:
Best results at low cutting speeds and higher feed rates.

12240
Quality
HSS.

12241
Quality
HSS/TiN coated.

HSS — 12240

HSS TiN — 12241



d_1 mm	d_2 h9 mm	l_1 mm	d_3 mm	HSS 12240	...	HSS/TiN 12241	...
6.3	5	45	1.6		101		101
8.0	6	50	2.0		102		102
10.0	6	53	2.5		103		103
12.5	8	56	3.2		104		104
16.0	10	63	4.0		105		105
20.0	10	67	5.0		106		106
25.0	10	71	6.3		107		107
31.5	12	76	10.0		108		108

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
25–40	10–30	25–80	26–30	25–28	18–25	6–10	-	-	-	-	-	-	-	-	-	9–15	10–60

12242 Conical countersink and countersink deburring tools

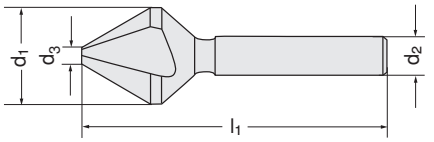
DIN 334 | 75° | HSS | Uni

ATORN®

Design
- **Countersink angle 75°**
- **3 cutting edges**
- Right cutting
- Straight shank (shape C)

Applications
For burr-free and chatter-free countersinking and deburring of steel, cast iron, non-ferrous metals and light metals.
Quality
HSS.

12242



d_1 mm	d_2 h9 mm	l_1 mm	d_3 mm	HSS 12242	...
6.3	5	45	1.5		101
8.3	6	50	2.0		102
10.4	6	51	2.5		103
12.4	8	55	3.0		104
16.5	10	61	3.5		105
20.5	10	65	4.0		106
25.0	10	69	5.0		107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
25–40	10–30	25–80	26–30	25–28	18–25	6–10	-	-	-	-	-	-	-	-	-	9–15	10–60

Info Conical countersink and countersink deburring tools DIN 335 C and D

Design
Countersink angle 90°, 3 cutting edges, clockwise-cutting.
Applications
For burr-free and chatter-free countersinking and deburring of steel, cast iron, non-ferrous metals and light metals.
For conical countersinks in accordance with DIN 74 and 75 sheet 1, quality grade fine.
A For countersunk head screws DIN 963 and DIN 965, raised countersunk head screws DIN 964 and DIN 966, thread-cutting screws DIN 7513 and DIN 7516
B For countersunk head screws DIN 7991

Note:
Best results at low cutting speeds and higher feed rates.

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

12204 - 12259 Conical countersink and countersink deburring tool sets

ATORN®

12249 + 12254

Design
Clockwise-cutting with straight shank.

Applications
For countersinking and deburring.

Contents	Quality	Set includes	12204	...
4 pieces	HSS	1 piece each of diam. 2–5/5–10/ 10–15/15–20 mm In plastic case		201

Contents	Quality	Set includes	12249	...
6 pieces	HSS	1 piece each of diam. 6.3/8.3/10.4/ 12.4/16.5/20.5 mm In ABS plastic box		101

Contents	Quality	Set includes	12250	...
6 pieces	HSS	1 piece each of diam. 6.3/8.3/10.4/ 12.4/16.5/20.5 mm In plastic case		201

Contents	Quality	Set includes	12251	...
6 pieces	HSS TiN	1 piece each of diam. 6.3/8.3/10.4/ 12.4/16.5/20.5 mm In plastic case		101

Contents	Quality	Set includes	12252	...
6 pieces	HSS extra Long shank	1 piece each of diam. 6.3/8.3/10.4/ 12.4/16.5/20.5 mm In metal case		101

Contents	Quality	Set includes	12254	...
6 pieces	HSS **1/4 inch** **Hexagonal shank** DIN 3126	1 piece each of diam. 6.3/8.3/10.4/ 12.4/16.5/20.5 mm In plastic case		101

Contents	Quality	Set includes	12255	...
6 pieces	HSS-E	1 piece each of diam. 6.3/8.3/10.4/ 12.4/16.5/20.5 mm In metal case		101

Contents	Quality	Set includes	12259	...
17 pieces	HSS	1 piece each of diam. 4.3/5.0/6.0/6.3/ 7.0/8.0/8.3/10.0/10.4/11.5/12.4/ 15.0/16.5/19.0/20.5/23/25 mm In metal case		101

12204

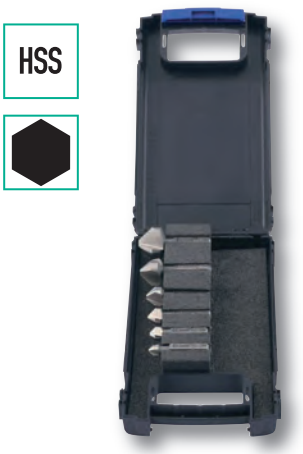
12249

12250

12251

12252

12254



12255

12259

Conical countersink and countersink deburring tools | Precision countersinks

12264 Conical countersink and countersink deburring tools

90° HSS Uni

Design
- Countersink angle 90°
- 3 cutting edges
- Right cutting
- Straight shank

Applications
For burr-free and chatter-free deburring and countersinking in a single action.
Quality
HSS.

12264

d_1 mm	d_2 mm	For screws	12264	...
6.3	5	M 3		**104**
8.3	6	M 4		**108**
10.4	6	M 5		**111**
12.4	8	M 6		**113**
16.5	10	M 8		**115**
20.5	10	M 10		**117**

12265 - 12270 Conical countersink and countersink deburring tools

DIN 335 90° Uni

ATORN®

Design
Countersink angle 90°, 3 cutting edges, straight shank (shape C).
Applications
For conical countersink cuts DIN 74 and DIN 75, sheet 1, quality grade fine.

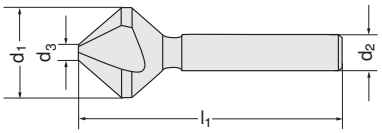
12265
Quality
HSS.

12266
Quality
HSS-E.

12267
Quality
HSS/TiN coated.

12269
Applications
For VA steels.
Quality
HSS powder steel, ASP 30.

12270
Design
6.3–8.3 mm solid carbide carbide-tipped.
Quality
Carbide grade K 20.



HSS HSS-E

12265 - 12266

HSS TiN

12267

HSS ASP30 VA

12269

HM K20

12270

			12265-12269	12270	HSS		HSS-E		HSS/TiN		HSS/ASP30		Carbide/K 20	
d_1 mm	d_2 mm	l_1 mm	d_3 mm	d_3 mm	12265	...	12266	...	12267	...	12269	...	12270	...
4.3	4	40	1.3	-		**101**								
5.0	4	40	1.5	-		**102**				**102**				
6.0	5	45	1.5	-		**103**				**103**				
6.3	5	45	1.5	2.2		**104**		**104**		**104**		**104**		**104**
7.0	6	50	1.8	-		**105**								
7.3	6	50	1.8	-		**106**				**106**				
8.0	6	50	2.0	-		**107**				**107**				
8.3	6	50	2.0	2.8		**108**		**108**		**108**		**108**		**108**
9.4	6	50	2.2	-		**109**								
10.0	6	50	2.5	-		**110**				**110**				
10.4	6	50	2.5	3.5		**111**		**111**		**111**		**111**		**111**
11.5	8	56	2.8	-		**112**				**112**				
12.4	8	56	2.8	4.0		**113**		**113**		**113**		**113**		**113**
15.0	10	60	3.2	-		**114**		**114**		**114**				
16.5	10	60	3.2	5.0		**115**		**115**		**115**		**115**		**115**
19.0	10	63	3.5	-		**116**				**116**				
20.5	10	63	3.5	7.0		**117**		**117**		**117**		**117**		**117**
23.0	10	67	3.8	-		**118**				**118**				
25.0	10	67	3.8	9.0		**119**		**119**		**119**		**119**		**119**
31.0	12	71	4.2	10.0		**120**		**120**		**120**				**120**
40.0	15	80	10.0	-		**121**		**121**		**121**				

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
12265 + 12266																	
25–40	10–30	25–80	26–30	25–28	18–25	6–10	5–8	2–5	-	-	-	-	4–10	4–10	4–10	9–15	10–60
12267 + 12269																	
30–80	30–50	30–100	32–36	30–34	22–30	7–12	6–10	3–6	-	-	-	-	5–12	5–12	5–12	10–25	10–60
12270																	
55–180	25–70	60–140	55–75	50–65	40–55	13–22	10–18	8–15	6–14	6–14	-	-	10–22	10–22	10–22	20–45	20–65

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12263 Precision countersink with variable pitch

DIN 335 | 90° | HSS-E Alunit | Uni

Design
- Countersink angle 90°
- Countersink with 3 cutting edges
- Special geometry with **variable pitch**
- Extremely smooth **multi-layer Alunit coating** for a long service life

Advantage:
- Maximum smoothness
- Chatter-free running and optimum tool life

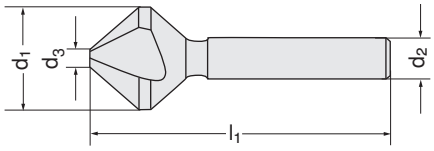
Applications
For exact deburring and conical countersink cuts.

12263 192-207+210
Design
- Precision tool with tight manufacturing tolerances on the shaft and clamping surfaces for use in 3-jaw drill chucks.

12263 110 / 12263 210

12263 092-107

12263 192-207



Three clamping surfaces

d_1 mm	d_2 mm	l_1 mm	d_3 mm	Smallest countersink diam. for mm holes from	12263 ...	12263 ...
4.3	4	40	1.3	1.3	**092**	**192**
6.0	5	45	1.5	1.5	**093**	**193**
6.3	5	45	1.5	1.5	**101**	**201**
8.0	6	50	2.0	2.0	**094**	**194**
8.3	6	50	2.0	2.0	**095**	**195**
10.0	6	50	2.5	2.5	**096**	**196**
10.4	6	50	2.5	2.5	**102**	**202**
11.5	8	56	2.8	2.8	**097**	**197**
12.4	8	56	2.8	2.8	**103**	**203**
15.0	10	60	3.2	3.2	**098**	**198**
16.5	10	60	3.2	3.2	**104**	**204**
19.0	10	63	3.5	3.5	**099**	**199**
20.5	10	63	3.5	3.5	**105**	**205**
23.0	10	67	3.8	3.8	**100**	**200**
25.0	10	67	3.8	3.8	**106**	**206**
31.0	12	71	4.2	4.2	**107**	**207**

Contents	Set contents	Version	12263 ...
5 pieces	1 piece each of diam. 6.3/10.4/16.5/20.5/25.0	In case	**110**
5 pieces	1 piece each of diam. 6.3/10.4/16.5/20.5/25.0 with 3 clamping surfaces	In case	**210**

Al<8%Si	Al>8%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
75	50	80	65	60	30	18	12	8	-	-	-	-	16	10	12	25	90

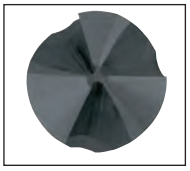
12273 Precision countersink with variable pitch

DIN 335 | 90° | VHM Alunit | Uni

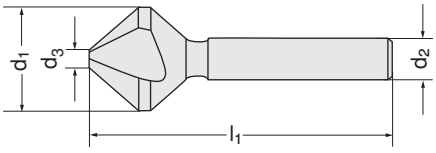
Design
- Countersink with 3 cutting edges
- Special geometry with **variable pitch**
- Extremely smooth **multi-layer Alunit coating** for a long service life

Advantage:
- Maximum smoothness
- Chatter-free running and optimum tool life

Applications
For exact deburring and conical countersink cuts.



12273



d_1 mm	d_2 mm	l_1 mm	d_3 mm	Smallest countersink diam. for holes from mm	12273 ...
6.3	5	45	1.5	1.5	**103**
8.3	6	50	2.0	2.0	**105**
10.4	6	50	2.5	2.5	**107**
12.4	8	56	2.8	2.8	**109**
16.5	10	60	3.2	3.2	**111**
20.5	10	63	3.5	3.5	**113**
25.0	10	67	3.8	3.8	**115**
31.0	12	71	4.2	4.2	**116**

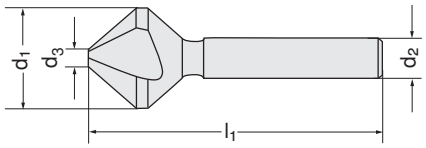
Al<8%Si	Al>8%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
75	45	110	65	60	50	45	18	8	12	10	8	-	16	14	15	45	30

Conical countersink and countersink deburring tools | Conical countersinks for indexable inserts | Conical countersinks

12260 Conical countersink and countersink deburring tools

HSS | 90° | Uni

Design
Extended straight shank (shape C), 100 mm long.
3 cutting edges.
Applications
For conical countersink cuts DIN 74 and DIN 75, sheet 1, quality grade fine.



12260

d_1 mm	d_2 mm	l_1 mm	d_3 mm	HSS 12260 ...
6.3	5	100	1.5	100
8.3	6	112	2.0	101
10.4	8	112	2.5	102
12.4	8	113	2.8	103

d_1 mm	d_2 mm	l_1 mm	d_3 mm	HSS 12260 ...
16.5	10	115	3.2	104
20.5	10	119	3.5	105
25.0	10	122	3.8	106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
25–40	10–30	25–80	26–30	25–28	18–25	6–10	5–8	2–5	-	-	-	-	4–10	4–10	4–10	9–15	10–60

12271 Conical countersink and countersink deburring tool bits

DIN 335C | 90° | HSS | Uni

Design
Countersink angle 90°, 3 cutting edges, ground, countersink head in accordance with DIN 335 C, with 1/4-inch hex shank, ground, in accordance with DIN 3126.

Quality
HSS.

12271

Nominal diameter mm	Total length mm	For countersink cuts	HSS 12271 ...
6.3	31	M 3	101
8.3	31	M 4	102
10.4	34	M 5	103

Nominal diameter mm	Total length mm	For countersink cuts	HSS 12271 ...
12.4	35	M 6	104
16.5	40	M 8	105
20.5	41	M 10	106

12272 Conical countersink and countersink deburring tools

DIN 335D | 90° | HSS | Uni

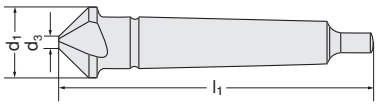
ATORN®

Design
- **Countersink angle 90°**
- **With 3 cutting edges**
- Morse taper shank (shape D)

Quality
HSS.

Note:
Other dimensions available on request.

12272



d_1 mm	d_3 mm	l_1 mm	MT	HSS 12272 ...
15.0	3.2	85	1	101
20.5	3.5	100	2	102
25.0	3.8	106	2	103
30.0	4.2	112	2	104
31.0	4.2	112	2	105
34.0	4.5	118	2	106

d_1 mm	d_3 mm	l_1 mm	MT	HSS 12272 ...
37.0	4.8	118	2	107
40.0	10.0	140	3	108
50.0	14.0	150	3	109
63.0	16.0	155	4	110
80.0	22.0	190	4	111

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
25–40	10–30	25–80	26–30	25–28	18–25	6–10	5–8	2–5	-	-	-	-	4–10	4–10	4–10	9–15	10–60

12274 Conical countersink and countersink deburring tools

90° | HSS | Uni

Design
- Plastic handle
- **Countersink angle 90°**
- **3 cutting edges**
- Clockwise-cutting

Quality
HSS.

12274

Ø mm	HSS 12274 ...
12.5	101
15.0	110
16.5	102

Ø mm	HSS 12274 ...
20.5	103
25.0	104

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

12310 - 12313 Conical countersinks for indexable inserts

KOMET

12310
Design
- **Countersink angle 90°**
- Right cutting
- Straight shank
- For mounting 2 cemented carbide indexable inserts, each with 3 cutting edges, clearance angle 8°

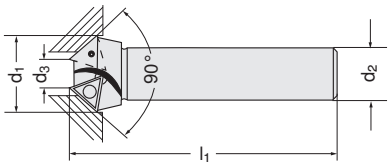
Scope of delivery:
- Including clamping screws
- **Without** indexable inserts

Applications
For screw-head countersink cuts (conical countersink cuts in line with DIN 74 Sheet 1, shape A, fine).

12312
Replacement clamping screw
Applications
For conical countersink for indexable inserts art. no. 12310.

12313
Cemented carbide indexable inserts
Design
3 cutting edges, clearance angle 8°.
Applications
For conical countersink for indexable inserts art. no. 12310.
Quality
PVD coating (P25).

12310



12313

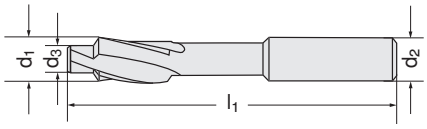
Type	d_1 mm	d_2 mm	d_3 H13 mm	Insert size	TORX®-Plus screw	Countersink 12310	...	Replacement screw 12312	...	Carbide indexable insert 12313	...
KWS-M 10	19	16	7.0	**W30 14660.338425**	**S/M 2.6 x 6.2 - 8 IP/T8**		**101**		**101**		**101**
KWS-M 14	26	16	11.0	**W30 14720.048425**	**S/M 2.6 x 6.2 - 8 IP/T8**		**103**		**101**		**103**
KWS-M 16	30	20	12.0	**W30 26720.0560**	**S/M 3.5 x 7.3 - 10 IP/T10**		**104**		**102**		**105**
KWS-M 18	34	20	16.0	**W30 26720.0560**	**S/M 3.5 x 7.3 - 10 IP/T10**		**105**		**102**		**105**

12405 Conical countersink (screw head, piloted counterbore)

HW

Design
Countersink angle 90°, clockwise-cutting, clockwise spiral. Straight shank and fixed pilot.
Applications
For countersink cuts in accordance with DIN 74, Sheet 1.
For the production of tapered countersink cuts for countersunk head screws DIN 963 and DIN 965, raised countersunk head screws DIN 964 and DIN 966, self-tapping screws F and G in accordance with DIN 7513, thread-cutting screws D and E in accordance with DIN 7516.
Quality
HSS.

12405



Note:
Pilot: D = Through-bore.
Countersink cut: m = medium quality grade, f = fine quality grade.

For thread	Countersink quality level	d_1 z9 mm	d_3 e8 mm	l_1 mm	d_2 h9 mm	HSS 12405	...
M 3	Df	6.0	3.2	71	5.0		**211**
M 4	Dm	9.0	4.5	80	8.0		**213**
M 4	Df	8.0	4.3	80	8.0		**215**
M 5	Dm	11.0	5.5	80	8.0		**217**
M 5	Df	10.0	5.3	80	8.0		**219**

For thread	Countersink quality level	d_1 z9 mm	d_3 e8 mm	l_1 mm	d_2 h9 mm	HSS 12405	...
M 6	Dm	13.0	6.6	100	12.5		**221**
M 6	Df	11.5	6.4	80	8.0		**223**
M 8	Dm	17.2	9.0	100	12.5		**225**
M 8	Df	15.0	8.4	100	12.5		**227**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
20–30	15–25	15–30	15–20	12–18	8–15	-	-	-	-	-	-	-	-	-	-	10–18	20–30

Counterbores | Piloted counterbores

12410 Counterbore sets

HSS

ATORN®

Design
6 pieces. Including 1 countersink each for M 3/M 4/M 5/M 6/M 8 and M 10, in plastic case. Clockwise-cutting, clockwise spiral, straight shank and fixed pilot.
Applications
For making countersink cuts in accordance with DIN 74, Sheet 2. Countersink cuts for cheese head screws DIN 84 and hexagon socket screws DIN 912 and DIN 6912.
Quality
HSS.

12410 201
Type KM-6
Applications
For core drilling tasks.

12410 202
Type DM-6
Applications
For through-bore drilling tasks, medium quality grade.

12410 203
Type DF-6
Applications
For through-hole drilling tasks, fine quality grade.

12410

Type	HSS 12410 ...
KM-6	201
DM-6	202
DF-6	203

12411 Counterbore

HSS

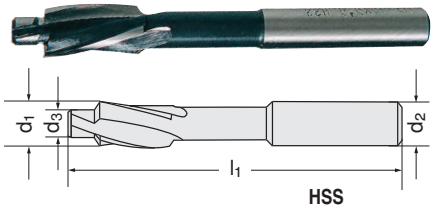
ATORN®

Design
Similar to DIN 373, clockwise-cutting, clockwise spiral, straight shank and fixed pilot.
Applications
For making countersink cuts in accordance with DIN 74, Sheet 2. Countersink cuts for cheese head screws DIN 84 and hexagon socket screws DIN 912 and DIN 6912.

Quality
HSS.

Note:
Pilot: D = through-bore, K = core hole.
Countersink cut: m = medium quality grade, f = fine quality grade.

12411



For Thread	Countersink Quality grade	d_1 z9 mm	d_3 e8 mm	l_1 mm	d_2 h9 mm	HSS 12411 ...
M 3	Dm	6.5	3.4	71	5.0	099
M 3	Df	6.5	3.2	71	5.0	100
M 3	Dm	6.0	3.4	71	5.0	101
M 3	Df	6.0	3.2	71	5.0	102
M 3	K	6.0	2.5	71	5.0	103
M 4	Dm	8.0	4.5	71	5.0	107
M 4	Df	8.0	4.3	71	5.0	108
M 4	K	8.0	3.3	71	5.0	109
M 5	Dm	10.0	5.5	80	8.0	110
M 5	Df	10.0	5.3	80	8.0	111
M 5	K	10.0	4.2	80	8.0	112
M 6	Dm	11.0	6.6	80	8.0	113

For Thread	Countersink Quality grade	d_1 z9 mm	d_3 e8 mm	l_1 mm	d_2 h9 mm	HSS 12411 ...
M 6	Df	11.0	6.4	80	8.0	114
M 6	K	11.0	5.0	80	8.0	115
M 8	Dm	15.0	9.0	100	12.5	116
M 8	Df	15.0	8.4	100	12.5	117
M 8	K	15.0	6.8	100	12.5	118
M 10	Dm	18.0	11.0	100	12.5	119
M 10	Df	18.0	10.5	100	12.5	120
M 10	K	18.0	8.5	100	12.5	121
M 12	Dm	20.0	13.5	100	12.5	122
M 12	Df	20.0	13.0	100	12.5	123
M 12	K	20.0	10.2	100	12.5	124

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
20–30	15–25	15–30	15–20	12–18	8–15	-	-	-	-	-	-	-	-	-	-	10–18	20–30

12421 Counterbore

HSS

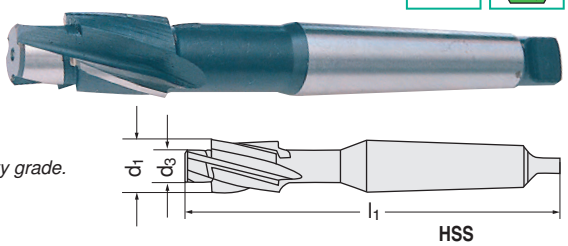
HHW

Design
Similar to DIN 373, clockwise-cutting, clockwise spiral, Morse taper and fixed pilot.
Applications
For making countersink cuts in accordance with DIN 74, Sheet 2. Countersink cuts for cheese head screws DIN 84 and hexagon socket screws DIN 912 and DIN 6912.

Quality
HSS.

Note:
Pilot:
D = Through-bore. Countersink cut:
m = medium quality grade, f = fine quality grade.

12421



For thread	Countersink Quality grade	d_1 z9 mm	l_1 mm	d_3 e8 mm	MT	HSS 12421 ...
M 10	Dm	18.0	150	11.0	2	101
M 10	Df	18.0	150	10.5	2	102
M 12	Dm	20.0	150	13.5	2	104
M 12	Df	20.0	150	13.0	2	105
M 14	Dm	24.0	160	15.5	2	107
M 14	Df	24.0	160	15.0	2	108

For thread	Countersink Quality grade	d_1 z9 mm	l_1 mm	d_3 e8 mm	MT	HSS 12421 ...
M 16	Dm	26.0	190	17.5	3	110
M 16	Df	26.0	190	17.0	3	111
M 18	Dm	30.0	190	20.0	3	113
M 18	Df	30.0	190	19.0	3	114
M 20	Df	33.0	190	21.0	3	117

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
20–30	15–25	15–30	15–20	12–18	8–15	-	-	-	-	-	-	-	-	-	-	10–18	20–30

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

12503 - 12504 Piloted counterbores

H. BILZ

Design
- **3 cutting edges**
- Short taper mounting for mounting in holder with art. no. 12540–12541
- For replaceable pilots no. 12506–12507, type A

Applications
For machinery steels, soft grey cast iron, medium-hard non-ferrous metals etc.

Note:
Piloted counterbores can be individually combined thanks to the replaceable pilot. Therefore suitable for countersink cuts in accordance with DIN 74 and in accordance with the old standard DIN 75.

12503
Quality
HSS.

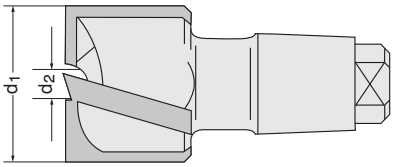
12504
Quality
Cemented-carbide soldered (K10–K35)

12503

HSS

12504

HM K10/K35



d_1 mm	Size	d_2 mm	For holder size	HSS 12503	...	Carbide 12504	...
5.0	A 00	1.7	H 0		203		
6.0	A 01	2.0	H 0		207		
6.5	A 01	2.0	H 0		210		
7.0	A 02	2.5	H 0		212		
7.4	A 02	2.5	H 0		213		
7.5	A 02	2.5	H 0		214		
8.0	A 02	2.5	H 0		215		
8.5	A 02	2.5	H 0		218		
9.0	A 1	3.0	H, HB 1		219		219
9.5	A 1	3.0	H, HB 1		221		
10.0	A 1	3.0	H, HB 1		222		222
10.4	A 1	3.0	H, HB 1		223		
10.5	A 1	3.0	H, HB 1		224		224
11.0	A 1	3.0	H, HB 1		225		225
11.5	A 1	3.0	H, HB 1		226		226
12.0	A 1	3.0	H, HB 1		227		227
12.5	A 1	3.0	H, HB 1		228		228
13.0	A 1	3.0	H, HB 1		290		229
15.0	A 1	3.0	H, HB 1		291		291
16.0	A 2	4.0	H, HB 2		235		235
16.5	A 2	4.0	H, HB 2		236		
17.0	A 2	4.0	H, HB 2		237		237
17.5	A 2	4.0	H, HB 2		238		238
18.0	A 3	5.0	H, HB 3		239		239
18.5	A 3	5.0	H, HB 3		240		

d_1 mm	Size	d_2 mm	For holder size	HSS 12503	...	Carbide 12504	...
19.0	A 3	5.0	H, HB 3		241		241
20.0	A 3	5.0	H, HB 3		243		243
20.5	A 3	5.0	H, HB 3				244
21.0	A 3	5.0	H, HB 3		245		245
22.0	A 3	5.0	H, HB 3		247		247
22.5	A 3	5.0	H, HB 3		248		
23.0	A 4	6.0	H, HB 4		249		249
24.0	A 4	6.0	H, HB 4		251		251
25.0	A 4	6.0	H, HB 4		252		252
26.0	A 4	6.0	H, HB 4		254		254
27.0	A 4	6.0	H, HB 4		255		
28.0	A 4	6.0	H, HB 4		256		256
29.0	A 4	6.0	H, HB 4		257		
30.0	A 4	6.0	H, HB 4		259		259
32.0	A 4	6.0	H, HB 4		261		261
33.0	A 4	6.0	H, HB 4		262		262
34.0	A 5	8.0	H, HB 5		263		263
35.0	A 5	8.0	H, HB 5		264		264
36.0	A 5	8.0	H, HB 5		265		265
38.0	A 5	8.0	H, HB 5		267		
40.0	A 5	8.0	H, HB 5		269		269
41.0	A 5	8.0	H, HB 5				270
42.0	A 5	8.0	H, HB 5		271		271
45.0	A 5	8.0	H, HB 5		274		274

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
12503																	
70–100	50–70	-	23–27	20–23	17–20	12–17	12–15	8–12	-	-	-	-	12–14	10–12	-	-	-
12504																	
100–150	60–110	-	60–90	50–60	30–50	22–30	20–25	15–22	-	-	-	-	30–50	20–40	-	10–18	-

Pilots | Standard holders | Hand reamers

12506 - 12507 Pilots

H. BILZ

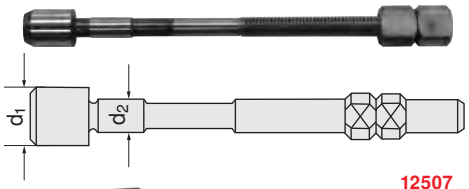
Design
Mounted for axial sliding movement and slight rotation.

Note:
Exchangeable within the same countersink size. This enables a wide range of possible combinations. Only insert the washer for protection between the blade and the pilot when using CC countersinks.

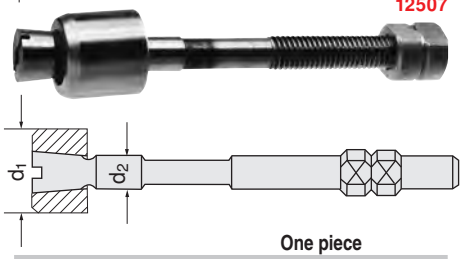
12506
Design
One piece, with nuts and washer (size 00, 01 and 02 cannot be rotated, mounted in the countersink with side screw).

12507
Design
Two piece, guide sleeve with fixing screw, with nuts and washer.

12506



12507



One piece

d_1 mm	For countersinks size	d_2 mm	12506	...
2.0	A 00	1.7		**301**
2.4	A 01	2.0		**305**
2.5	A 01	2.0		**308**
3.0	A 00	1.7		**319**
3.0	A 01	2.0		**320**
3.0	A 02	2.5		**321**
3.2	A 01	2.0		**322**
3.2	A 1	3.0		**324**
3.4	A 01	2.0		**325**
4.0	A 02	2.5		**337**
4.0	A 2	4.0		**336**
4.2	A 2	4.0		**339**

One piece

d_1 mm	For countersinks size	d_2 mm	12506	...
4.5	A 2	4.0		**340**
4.5	A 1	3.0		**342**
5.0	A 02	2.5		**343**
5.0	A 1	3.0		**344**
5.3	A 1	3.0		**346**
5.5	A 1	3.0		**349**
6.0	A 1	3.0		**351**
6.2	A 1	3.0		**380**
6.4	A 1	3.0		**353**
6.5	A 1	3.0		**355**
6.6	A 1	3.0		**357**
6.8	A 1	3.0		**358**

One piece

d_1 mm	For countersinks size	d_2 mm	12506	...
7.0	A 1	3.0		**360**
8.0	A 1	3.0		**381**
8.5	A 1	3.0		**382**
8.5	A 3	5.0		**365**
9.0	A 3	5.0		**366**
10.0	A 3	5.0		**368**
10.5	A 3	5.0		**369**
10.5	A 4	6.0		**370**
11.0	A 4	6.0		**372**
12.0	A 4	6.0		**374**
13.0	A 4	6.0		**376**

Two pieces

d_1 mm	For countersinks size	d_2 mm	12507	...
11.0	A 3	5.0		**371**
12.0	A 3	5.0		**373**
13.0	A 3	5.0		**375**
14.0	A 3	5.0		**377**
15.0	A 4	6.0		**379**

Two pieces

d_1 mm	For countersinks size	d_2 mm	12507	...
16.0	A 4	6.0		**380**
17.0	A 4	6.0		**381**
18.0	A 4	6.0		**382**
19.0	A 4	6.0		**383**
20.0	A 4	6.0		**385**

Two pieces

d_1 mm	For countersinks size	d_2 mm	12507	...
20.0	A 5	8.0		**386**
21.0	A 5	8.0		**388**
22.0	A 4	6.0		**389**
22.0	A 5	8.0		**390**
25.0	A 5	8.0		**393**

12540 - 12542 Standard holders

H. BILZ

12540 - 12541
Design
Case-hardening steel, hardened and ground, short (can also be used as a grinding holder).
Applications
For mounting piloted counterbores with art. nos. 12503 and 12504.

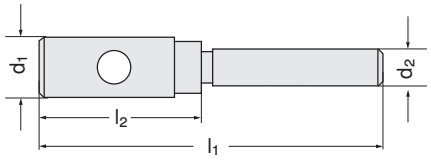
12540
With straight shank.

12541
With Morse taper shank.

12542
Ejector drift
For item no. 12540 and 12541.

12540

12541



12542

Straight

Size	l_1 mm	l_2 mm	d_1 mm	d_2 mm	Shank	12540	...
H 0	59	24	9.0	6	Straight		**101**
H 1	76	36	12.5	8	Straight		**102**
H 2	91	41	17.0	10	Straight		**103**
H 3	109	49	21.0	12	Straight		**104**
H 4	112	52	28.0	14	Straight		**105**
H 5	125	65	32.0	16	Straight		**106**

MT **Ejector drift**

Size	l_1 mm	l_2 mm	d_1 mm	Shank	12541	...	12542	...
H 1	104	42	12.5	MT 1		**202**		**102**
H 2	109	47	17.0	MT 1		**203**		**103**
H 3	132	57	21.0	MT 2		**204**		**104**
H 4	135	60	28.0	MT 2		**205**		**105**
H 5	168	74	32.0	MT 3		**206**		**106**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

13010 Hand reamers DIN 206

HSS H7

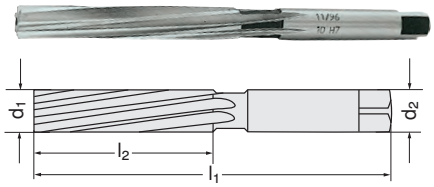
ATORN®

Design
- With straight shank and square drive
- Right cutting
- Anticlockwise spiral 7–8°
- Cut approx. 1/4 of the cutting length (l_2)
- **H7 accuracy**

Quality
HSS.

Note:
Not suitable for blind holes.

13010



d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13010	...
2.0	25	50	1.60		**201**
2.2	27	54	1.80		**203**
2.5	29	58	2.00		**206**
3.0	31	62	2.24		**211**
3.2	33	66	2.50		**213**
3.5	35	71	2.80		**216**
4.0	38	76	3.15		**221**
4.5	41	81	3.55		**226**
5.0	44	87	4.00		**231**
5.5	47	93	4.50		**236**
6.0	47	93	4.50		**241**
7.0	54	107	5.60		**251**
8.0	58	115	6.30		**261**
9.0	62	124	7.10		**271**
10.0	66	133	8.00		**281**
11.0	71	142	9.00		**282**
12.0	76	152	10.00		**283**
13.0	76	152	10.00		**284**

d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13010	...
14.0	81	163	11.20		**285**
15.0	81	163	11.20		**286**
16.0	87	175	12.50		**287**
17.0	87	175	12.50		**288**
18.0	93	188	14.00		**289**
19.0	93	188	14.00		**290**
20.0	100	201	16.00		**291**
21.0	100	201	16.00		**292**
22.0	107	215	18.00		**293**
23.0	107	215	18.00		**294**
24.0	115	231	20.00		**295**
25.0	115	231	20.00		**296**
26.0	115	231	20.00		**297**
28.0	124	247	22.40		**299**
30.0	124	247	22.40		**301**
32.0	133	265	25.00		**303**
35.0	142	284	28.00		**306**
40.0	152	305	31.50		**311**

13033 Adjustable hand reamers DIN 859

HSS

HHW

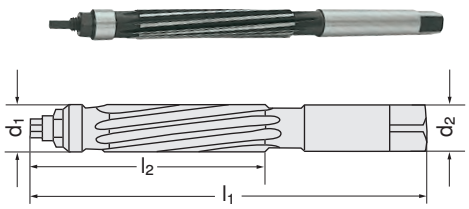
Design
- With straight shank and square drive
- Right cutting
- Anticlockwise spiral 4°
- Slotted
- Diameter 4 and 5 mm, straight grooved

Adjustment range of the nominal diameter:
- Diameter 4–5 mm approx. 0.05 mm,
- Diameter 6–10 mm approx. 0.1 mm,
- Diameter 11–15 mm approx. 0.15 mm,
- Diameter 16–20 mm approx. 0.2 mm.

Applications
Can be adjusted to all desired fits and wear can be compensated for.

Quality
HSS.

13033



d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13033	...
4	38	76	3.15		**101**
5	44	87	4.00		**102**
6	47	93	4.50		**103**
7	54	107	5.60		**104**
8	58	115	6.30		**105**
9	62	124	7.10		**106**
10	66	133	8.00		**107**
11	71	142	9.00		**108**

d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13033	...
12	76	152	10.00		**109**
13	76	152	10.00		**110**
14	81	163	11.20		**111**
15	81	163	11.20		**112**
16	87	175	12.50		**113**
18	93	188	14.00		**115**
19	93	188	14.00		**116**
20	100	201	16.00		**117**

13101 Quick-adjust hand reamer sets

ATORN®

Design
- With straight shank and square drive
- Right cutting
- Short, eccentric arch, relief ground blade
- In case

Applications
For reaming and finishing short, simple holes. Only for equalising tasks, minimum chip removal.

Quality
Special steel.

13101 101

Set contents	Adjustment range mm	13101	...
11 pieces	8–31.5		101
13 pieces	8–45.0		102

13102 - 13104 Quick-adjust hand reamers

ATORN®

Design
- With straight shank and square drive
- Right cutting
- Short, eccentric arch, relief ground blade

Applications
For reaming and finishing short, simple holes. Only for equalising tasks, minimum chip removal.

Quality
Special steel.

13103
Spare blade

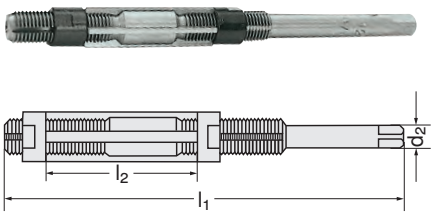
13103 101-102
Pack = 4 pieces

13103 103-112
Pack = 5 pieces

13103 113-116
Pack = 6 pieces

13104
Spare nuts in pairs.

13102



13103

13104

Adjustment range mm	l_2 mm	l_1 mm	d_2 mm	Reamers 13102	...	Spare blades 13103	...	Replacement nuts 13104	...
6.4–7.2	32	111	3.0		101		101		101
7.2–8.0	32	111	3.5		102		102		102
8.0–9.0	32	111	4.3		103		103		103
9.0–10.0	32	115	4.3		104		104		104
10.0–11.0	35	120	4.9		105		105		105
11.0–12.0	35	125	6.2		106		106		106
12.0–13.5	42	130	6.2		107		107		107
13.5–15.5	50	145	7.0		108		108		108
15.5–18.0	60	165	8.0		109		109		109
18.0–21.0	65	180	9.0		110		110		110
21.0–24.0	70	190	10.0		111		111		111
24.0–27.5	75	205	11.0		112		112		112
27.5–31.5	80	225	12.0		113		113		113
31.5–37.0	90	240	14.5		114		114		114
37.0–45.0	100	285	16.0		115		115		115
45.0–55.0	109	320	20.0		116		116		116

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13420 Taper reamers

HSS 1:10

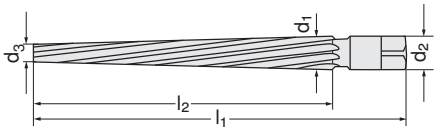
Design
- Taper 1:10
- With straight shank and square drive
- Right cutting
- Spiral-fluted

Applications
For holes with and without interruptions.

Quality
HSS.

Note:
Holes must be pre-tapered in a conical shape.
Not suitable for reaming cylindrical holes!

13420



d_3 mm	d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13420	...
3	10	70	100	8.0		101
5	15	100	140	12.0		102

d_3 mm	d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13420	...
10	25	150	195	20.0		103
15	35	200	250	30.0		104

13432 Hand taper reamers DIN 9 (pin reamers)

HSS 1:50

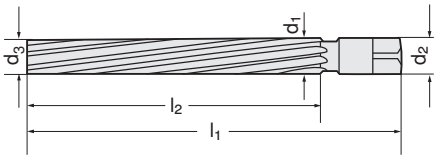
Design
- Taper 01:50
- With straight shank and square drive
- Right cutting
- Spiral-fluted

Applications
For finishing tapered holes for taper pins DIN 1.

Quality
HSS.

Note:
Use pin drill art. no. 10899 to pre-drill pin holes!

13432



Nominal diameter mm	d_3 mm	d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13432	...
3	2.9	4.06	58	80	4.0		206
4	3.9	5.26	68	93	5.0		208
5	4.9	6.36	73	100	6.3		210
6	5.9	8.00	105	135	8.0		212
8	7.9	10.80	145	180	10.0		215

Nominal diameter mm	d_3 mm	d_1 mm	l_2 mm	l_1 mm	T d_2 mm	HSS 13432	...
10	9.9	13.40	175	215	12.5		217
12	11.8	16.00	210	255	14.0		218
16	15.8	20.40	230	280	18.0		221
20	19.8	24.80	250	310	22.4		222
25	24.7	30.70	300	370	28.0		223

13440 High-helix taper pin machine reamers DIN 2179

HSS 1:50

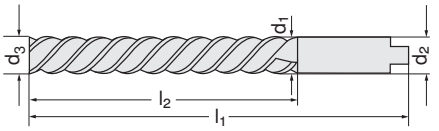
Pin hole taper reamer
Design
- Taper 01:50
- With straight shank and driver
- Right cutting
- Anticlockwise spiral approx. 45°

Applications
For finishing tapered holes for taper pins DIN 1.

Quality
HSS.

Note:
Use pin drill art. no. 10899 to pre-drill pin holes!
Improved performance thanks to stripping cut.
Significant chip removal is required! Taper bores free from chatter marks! Only for machine use!
High-helix taper reamers are not suitable for blind holes.

13440



Nominal diameter mm	d_3 mm	d_1 mm	l_2 mm	l_1 mm	d_2 mm	HSS 13440	...
2	1.9	2.86	48	86	3.15		101
3	2.9	4.06	58	100	4.00		103
4	3.9	5.26	68	112	5.00		104
5	4.9	6.36	73	122	6.30		105

Nominal diameter mm	d_3 mm	d_1 mm	l_2 mm	l_1 mm	d_2 mm	HSS 13440	...
6	5.9	8.00	105	160	8.00		106
8	7.9	10.80	145	207	10.00		108
10	9.9	13.40	175	245	12.50		109
12	11.8	16.00	210	290	16.00		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–20	10–15	10–13	10–12	8–10	8–10	8–10	-	-	-	-	-	-	6–7	5–6	-	6–8	-

Rivet hole reamers | Machine reamers

13450 Rivet hole reamers in line with DIN 311

HSS

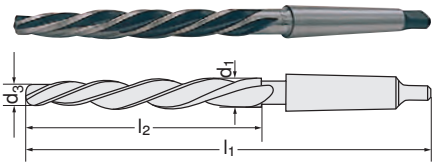
HHW

Design
- With Morse taper shank
- Right cutting
- Anticlockwise spiral approx. 25°
- Arched tooth back
- Cutting length 1/3, tapered, 2/3 cylindrical

Applications
For reaming offset holes opposite each other that must be bolted or riveted together.

Quality
HSS.

13450



d_1 mm	d_3 mm	l_2 mm	l_1 mm	Shank MT	HSS 13450	...
6.4	4.5	75	151	1		101
7.4	5.2	80	156	1		102
8.4	5.9	85	161	1		103
9.5	6.6	90	166	1		104
10	7.0	95	171	1		105
11	7.7	100	176	1		106
12	8.4	105	199	2		107
13	9.1	105	199	2		108
14	9.8	115	209	2		109
15	10.5	125	219	2		110
16	11.2	135	229	2		111
17	11.9	135	251	3		112

d_1 mm	d_3 mm	l_2 mm	l_1 mm	Shank MT	HSS 13450	...
18	12.6	145	261	3		113
20	14.0	155	271	3		115
21	14.7	155	271	3		116
22	15.4	165	281	3		117
23	16.4	165	281	3		118
24	16.8	180	296	3		119
25	17.5	180	296	3		120
27	18.9	195	311	3		122
28	19.6	195	311	3		123
30	21.0	195	311	3		125
31	21.7	210	326	3		126

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–20	10–15	10–13	10–12	8–10	8–10	8–10	-	-	-	-	-	-	6–7	5–6	-	6–8	-

13490 NC machine reamers

HSS-E H7

ATORN®

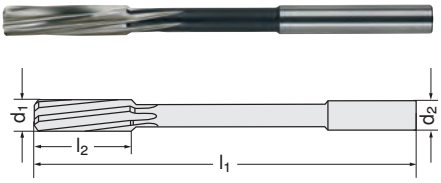
Design
Similar to DIN 212. Straight shank, spiral-fluted, right cutting, **H7 accuracy.** The small **h6 tolerance range** of the tool shanks significantly improves the clamping accuracy.

Applications
NC shank**for direct use in hydro-expansion and high-precision chucks** without adapters or special mounts.

Quality
HSS-E.

Note:
Intermediate dimensions deliverable on request.

13490



d_1 mm	l_2 mm	l_1 mm	d_2 mm	HSS-E 13490	...
1.0	5.5	34	1		201
1.5	8.0	40	2		205
1.6	9.0	43	2		206
1.7	9.0	43	2		207
1.8	10.0	46	2		208
1.9	10.0	46	2		209
2.0	11.0	49	2		210
2.1	11.0	49	2		211
2.2	12.0	53	3		212
2.3	12.0	53	3		213
2.4	14.0	57	3		214
2.5	14.0	57	3		215
2.6	14.0	57	3		216
2.7	15.0	61	3		217
2.8	15.0	61	3		218
2.9	15.0	61	3		219
3.0	15.0	61	3		220
3.1	16.0	65	4		221
3.2	16.0	65	4		222
3.3	16.0	65	4		223
3.4	18.0	70	4		224
3.5	18.0	70	4		225
3.6	18.0	70	4		226
3.7	18.0	70	4		227
3.8	19.0	75	4		228

d_1 mm	l_2 mm	l_1 mm	d_2 mm	HSS-E 13490	...
3.9	19.0	75	4		229
4.0	19.0	75	4		230
4.1	19.0	75	4		231
4.2	19.0	75	4		232
4.3	21.0	80	5		233
4.4	21.0	80	5		234
4.5	21.0	80	5		235
5.0	23.0	86	5		240
5.5	26.0	93	6		245
6.0	26.0	93	6		250
6.5	28.0	101	6		255
7.0	31.0	109	8		260
7.5	31.0	109	8		265
8.0	33.0	117	8		270
8.5	33.0	117	8		275
9.0	36.0	125	10		280
9.5	36.0	125	10		285
10.0	38.0	133	10		290
11.0	41.0	142	10		292
12.0	44.0	151	10		294
14.0	47.0	160	14		298
15.0	50.0	162	14		300
16.0	52.0	170	14		302
18.0	56.0	182	14		305
20.0	60.0	195	16		307

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14–20	14–20	14–20	10–15	10–13	8–12	4–6	4–6	-	-	-	-	-	-	-	4–6	4–14	8–14

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

13500 Machine reamer sets (1/100 reamers)

HSS-E | 1/100 | H7

ATORN®

Quality
HSS-E.

Design
- With straight shank
- Right cutting
- **Manufacturing tolerance +0.003/-0**
- In plastic box

13500

Size	Number of reamers	Contents: 1 reamer each 0.01 mm increments		HSS-E 13500	...
2.98–10.02	24	2.98	5.98		102
		3.00–3.02	6.00–6.02		
		3.98	7.98		
		4.00–4.02	8.00–8.02		
		4.98	9.98		
		5.00–5.02	10.00–10.02		
0.98–5.02	25	0.98–1.02	3.98 - 4.02		103
		1.98–2.02	4.98–5.02		
		2.98 - 3.02			
5.98–10.02	25	5.98–6.02	8.98–9.02		104
		6.98–7.02	9.98–10.02		
		7.98 - 8.02			

13503 NC machine reamers (1/100 reamers)

HSS-E | 1/100

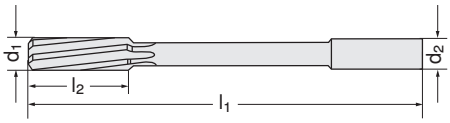
ATORN®

Applications
NC shank**for direct use in hydro-expansion and high-precision chucks** without adapters or special mounts.

Quality
HSS-E.

Note:
Intermediate dimensions deliverable on request.

13503



d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 13503	...
0.98	5.5	34	1.0		101
0.99	5.5	34	1.0		102
1.00	5.5	34	1.0		103
1.01	5.5	34	1.0		104
1.02	5.5	34	1.0		105
1.03	5.5	34	1.0		106
1.48	8.0	40	2.0		107
1.49	8.0	40	2.0		108
1.50	8.0	40	2.0		109
1.51	9.0	43	2.0		110
1.52	9.0	43	2.0		111
1.53	9.0	43	2.0		112
1.98	11.0	49	2.0		113
1.99	11.0	49	2.0		114
2.00	11.0	49	2.0		115
2.01	11.0	49	2.0		116
2.02	11.0	49	2.0		117
2.03	11.0	49	2.0		118
2.48	14.0	57	3.0		119
2.49	14.0	57	3.0		120
2.50	14.0	57	3.0		121
2.51	14.0	57	3.0		122
2.52	14.0	57	3.0		123
2.53	14.0	57	3.0		124
2.97	15.0	61	3.0		125
2.98	15.0	61	3.0		126

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 13503	...
2.99	15.0	61	3.0		127
3.00	15.0	61	3.0		128
3.01	16.0	65	4.0		129
3.02	16.0	65	4.0		130
3.03	16.0	65	4.0		131
3.97	19.0	75	4.0		132
3.98	19.0	75	4.0		133
3.99	19.0	75	4.0		134
4.00	19.0	75	4.0		135
4.01	19.0	75	4.0		136
4.02	19.0	75	4.0		137
4.03	19.0	75	4.0		138
4.97	23.0	86	5.0		139
4.98	23.0	86	5.0		140
4.99	23.0	86	5.0		141
5.00	23.0	86	5.0		142
5.01	23.0	86	5.0		143
5.02	23.0	86	5.0		144
5.03	23.0	86	5.0		145
5.97	26.0	93	6.0		146
5.98	26.0	93	6.0		147
5.99	26.0	93	6.0		148
6.00	26.0	93	6.0		149
6.01	28.0	101	6.0		150
6.02	28.0	101	6.0		151
6.03	28.0	101	6.0		152

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 13503	...
7.97	33.0	117	8.0		153
7.98	33.0	117	8.0		154
7.99	33.0	117	8.0		155
8.00	33.0	117	8.0		156
8.01	33.0	117	8.0		157
8.02	33.0	117	8.0		158
8.03	33.0	117	8.0		159
8.04	33.0	117	8.0		160
9.97	38.0	133	10.0		161
9.98	38.0	133	10.0		162
9.99	38.0	133	10.0		163
10.00	38.0	133	10.0		164
10.01	38.0	133	10.0		165
10.02	38.0	133	10.0		166
10.03	38.0	133	10.0		167
10.04	38.0	133	10.0		168
10.05	38.0	133	10.0		169
11.97	44.0	151	10.0		170
11.98	44.0	151	10.0		171
11.99	44.0	151	10.0		172
12.00	44.0	151	10.0		173
12.01	44.0	151	10.0		174
12.02	44.0	151	10.0		175
12.03	44.0	151	10.0		176
12.04	44.0	151	10.0		177
12.05	44.0	151	10.0		178

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14–20	14–20	14–20	10–15	10–13	8–12	4–6	4–6	-	-	-	-	-	-	-	4–6	4–14	8–14

( ) = Items with prices in brackets partly available from stock.

Machine reamers

13502 Solid carbide NC machine reamers

VHM | H7

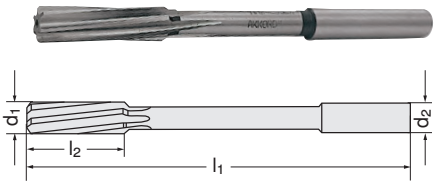
ATORN®

Design
Similar to DIN 8093. Straight shank, anticlockwise spiral flute, right cutting, **H7 accuracy.** The small **h6 tolerance range** of the tool shanks significantly improves the clamping accuracy.
Applications
NC shank**for direct use in hydro-expansion and high-precision chucks** without adapters or special mounts.

Quality
Solid carbide, grade K 10. Solid carbide up to diameter 12 mm, with solid-carbide head and steel shaft from 13 mm.

Note:
Intermediate dimensions deliverable on request.

13502



d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	VHM 13502	...
1.0	6	34	1.0		101
1.2	6	34	1.0		105
1.4	8	40	2.0		106
1.5	8	40	2.0		107
1.6	9	43	2.0		111
1.8	10	46	2.0		113
2.0	11	49	2.0		118
2.2	12	53	3.0		123
2.5	14	57	3.0		129
2.8	15	61	3.0		135
3.0	15	61	3.0		140
3.2	16	65	4.0		145
3.5	18	70	4.0		148
4.0	19	75	4.0		156
4.5	21	80	5.0		164
5.0	23	86	5.0		172
5.5	26	93	6.0		180
6.0	26	93	6.0		188
6.5	28	101	6.0		196
7.0	31	109	8.0		201
8.0	33	117	8.0		214
9.0	36	125	10.0		222
10.0	38	133	10.0		243
11.0	41	142	10.0		247
12.0	44	151	10.0		251
13.0	44	151	10.0		252
14.0	47	160	14.0		253
15.0	50	162	14.0		254
16.0	52	170	14.0		255
17.0	54	175	14.0		256
18.0	56	182	14.0		257
19.0	58	189	16.0		258
20.0	60	195	16.0		259

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
30–60	30–60	25–40	15–25	15–20	10–20	8–18	8–12	6–10	-	-	-	-	8–15	6–10	8–12	6–18	10–30

13512 Solid carbide NC machine reamers (1/100 reamers)

VHM | 1/100

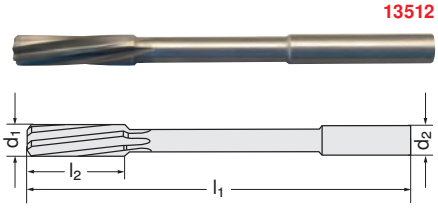
ATORN®

Design
Similar to DIN 8093. Straight shaft diameters, spiral-fluted, right cutting. The small **h6 tolerance range** of the tool shanks significantly improves the clamping accuracy.
Production tolerance + 0.003/-0.

Applications
NC shaft for direct use in hydro-expansion and high-precision chucks without adapters or special mounts.
Quality
Solid carbide, grade K 10.

Note:
Intermediate dimensions deliverable on request.

13512



d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	VHM 13512	...
0.98	6.0	34	1.0		101
0.99	6.0	34	1.0		102
1.00	6.0	34	1.0		103
1.01	6.0	34	1.0		104
1.02	6.0	34	1.0		105
1.03	6.0	34	1.0		106
1.48	8.0	40	2.0		107
1.49	8.0	40	2.0		108
1.50	8.0	40	2.0		109
1.51	9.0	43	2.0		110
1.52	9.0	43	2.0		111
1.53	9.0	43	2.0		112
1.98	11.0	49	2.0		113
1.99	11.0	49	2.0		114
2.00	11.0	49	2.0		115
2.01	11.0	49	2.0		116
2.02	11.0	49	2.0		117
2.03	11.0	49	2.0		118
2.48	14.0	57	3.0		119
2.49	14.0	57	3.0		120
2.50	14.0	57	3.0		121
2.51	14.0	57	3.0		122
2.52	14.0	57	3.0		123
2.53	14.0	57	3.0		124
2.97	15.0	61	3.0		125
2.98	15.0	61	3.0		126
2.99	15.0	61	3.0		127
3.00	15.0	61	3.0		128
3.01	15.0	61	3.0		129
3.02	15.0	61	3.0		130
3.03	15.0	61	3.0		131
3.97	19.0	75	4.0		132
3.98	19.0	75	4.0		133
3.99	19.0	75	4.0		134
4.00	19.0	75	4.0		135
4.01	19.0	75	4.0		136
4.02	19.0	75	4.0		137
4.03	19.0	75	4.0		138
4.97	23.0	86	5.0		139
4.98	23.0	86	5.0		140
4.99	23.0	86	5.0		141
5.00	23.0	86	5.0		142
5.01	23.0	86	5.0		143
5.02	23.0	86	5.0		144
5.03	23.0	86	5.0		145
5.97	26.0	93	5.0		146
5.98	26.0	93	6.0		147
5.99	26.0	93	6.0		148
6.00	26.0	93	6.0		149
6.01	28.0	101	6.0		150
6.02	28.0	101	6.0		151
6.03	28.0	101	6.0		152
7.97	33.0	117	8.0		153
7.98	33.0	117	8.0		154
7.99	33.0	117	8.0		155
8.00	33.0	117	8.0		156
8.01	33.0	117	8.0		157
8.02	33.0	117	8.0		158
8.03	33.0	117	8.0		159
8.04	33.0	117	8.0		160
9.97	38.0	133	10.0		161
9.98	38.0	133	10.0		162
9.99	38.0	133	10.0		163
10.00	38.0	133	10.0		164
10.01	38.0	133	10.0		165
10.02	38.0	133	10.0		166
10.03	38.0	133	10.0		167
10.04	38.0	133	10.0		168
10.05	38.0	133	10.0		169
11.97	44.0	151	10.0		170
11.98	44.0	151	10.0		171
11.99	44.0	151	10.0		172
12.00	44.0	151	10.0		173
12.01	44.0	151	10.0		174
12.02	44.0	151	10.0		175
12.03	44.0	151	10.0		176
12.04	44.0	151	10.0		177
12.05	44.0	151	10.0		178

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
30–60	30–60	25–40	15–25	15–20	10–20	8–18	8–12	6–10	-	-	-	-	8–15	6–10	8–12	6–18	10–30

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

13515 Solid carbide NC machine reamers

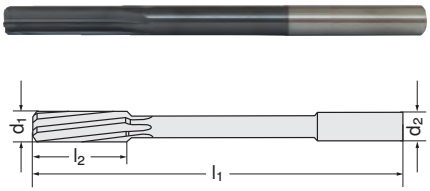
HPC | Z 4–6 | VHM TiAlN | H7 | 65 HRC

Design
- Solid carbide TiAlN-coated
- Cut 45°
- Straight flutes
- Right cutting
- NC shaft with **H6 tolerance**
- **H7 accuracy**

Applications
For blind holes and through-bores.

Note:
NC-compatible version with straight shaft diameter for standardised mounting, especially in hydro-expansion or high-precision chucks.

13515



Solid carbide/TiAlN

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	13515	...
2	15	60	3	4		**103**
3	15	75	3	4		**108**
4	18	75	6	4		**113**
5	26	100	6	6		**118**

Solid carbide/TiAlN

d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	13515	...
6	26	100	6	6		**123**
8	36	108	8	6		**128**
10	36	135	10	6		**133**
12	45	135	12	6		**138**

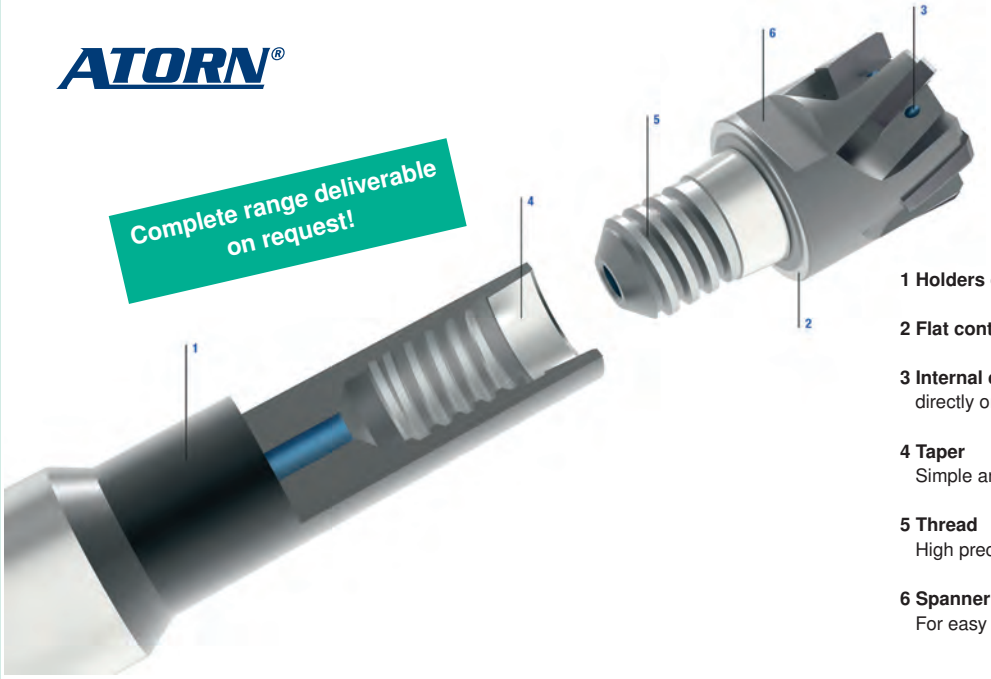
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	10–15	10–12	8–10	5–8	3–5	-	-	-	-	-

Info Modular HPC reamer system

ATORN®

NEW

Complete range deliverable on request!



1 Holders of different lengths

2 Flat contact surface for rigidity and stability

3 Internal coolant duct outlet
directly on the blade

4 Taper
Simple and high-precision centring

5 Thread
High precision for easy tool changes

6 Spanner flat
For easy head changes in the machine

Holder range available in short, standard, long and extra-long versions!

Solid carbide reamer heads available for machining blind holes and through holes from 10H7 to 40H7 and in 1-mm increments for machining steel/cast iron or VA.

Advantages:
- Tool changes in the machine for easy handling
- High switching accuracy and stability
- Particularly economical in series production
- High cutting speeds are possible
- With internal cooling
- Adapted installation key for optimum screw fittings

13535 - 13539 RPK reamers

HPC HSC DIN 1835 B VHM TiAlN H7

≤ 1400 N/mm² ≤ 1200 N/mm² ALU GG(G)

Design
- Highly stable connection with **polygonal plate seat**
- Cutting plates for **through holes and blind holes**
- Long **service life** and high **precision**
- High concentricity
- Simple blade replacement
- The **internal coolant feed** is routed directly to the first-cut area on the blades via a baffle plate
- Good chip removal even in blind holes

Applications
Reduces processing times thanks to **extremely high cutting speeds, higher feed rates** and **greater material removal volumes.**

Quality
Solid carbide/TiAlN-coated.

13535
Polygonal shafts
Applications
For reamer heads art no. 13538–13539.

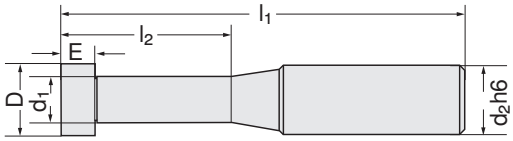
13536
Clamping screws

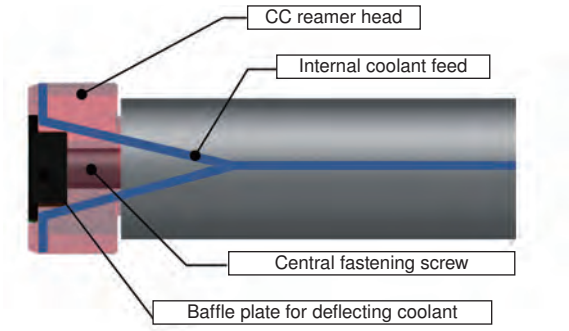
13537
Baffle plates

13538
Design
Left-hand spiral for through-bores.
Applications
For Steel + VA.

13539
Design
Straight flute **for blind holes.**
Applications
For Steel + VA.

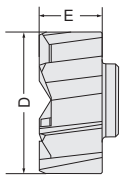
13535





Polygonal shafts									Shaft		Clamping screw		Baffle plate	
Description	Shaft size	Up to drilling depth	D min. - max. mm	d_2 h6 mm	d_1 mm	E mm	l_1 mm	l_2 mm	13535	...	13536	...	13537	...
RPS400J3D6	1	3 x D	12.00 - 16.20	16	11	9	110	38	101		101		101	
RPS400J5D6	1	5 x D	12.00 - 16.20	16	11	9	140	68	102		101		101	
RPS400M3D6	2	3 x D	16.21 - 20.20	20	14	9	125	50	103		102		102	
RPS400M5D6	2	5 x D	16.21 - 20.20	20	14	9	175	100	104		102		102	

13538 - 13539



Reamer heads				Through holes steel+VA		Blind holes steel+VA	
D mm	for Shaft size	E mm	Blade number	13538	...	13539	...
12	1	9	6	120		120	
13	1	9	6	130		130	
14	1	9	6	140		140	
15	1	9	6	150		150	
16	1	9	6	160		160	
17	2	9	6	170		170	
18	2	9	6	180		180	
19	2	9	6	190		190	
20	2	9	6	200		200	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–400	200–40	50–250	100–250	100–250	20–50	20–50	20–50	20–50	-	-	-	-	15–40	10–30	-	60–200	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

13508 Machine reamer sets

HSS-E | HSS-E TiN | H7

ATORN®

Design
- **7 pieces**
- With straight shank
- Right cutting
- **H7 accuracy**

13508 101
Quality
HSS-E.

13508 102
Quality
HSS-E/TiN.

13508 102

Quality	Contents: 1 piece each Ø mm	Version	13508	...
HSS-E	3/4/5/6/8/10/12	in plastic case		**101**
HSS-E/TiN	3/4/5/6/8/10/12	in plastic case		**102**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
13508 101																	
14–20	14–20	14–20	10–15	10–13	8–12	4–6	4–6	-	-	-	-	-	-	-	4–6	4–14	8–14
13508 102																	
14–20	14–20	14–20	10–20	8–15	8–12	4–6	4–6	3–5	-	-	-	-	-	-	4–6	4–14	20–60

13505 - 13507 Machine reamers DIN 212

H7

HHW

Design
- With straight shank (without square drive)
- Right cutting
- Spiral-fluted
- Anticlockwise spiral 9°
- Short 45° cut
- **H7 accuracy**
- For through holes and blind holes
- Even number of teeth
- Unequal tooth pitch (prevents chatter marks and hole distortion)

Note:
Intermediate dimensions deliverable on request.

13505
Quality
HSS-E.

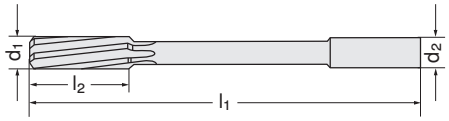
13507
Quality
HSS-E/TiN-coated.

HSS-E

13505

HSS-E TiN

13507



				HSS-E		HSS-E/TiN	
d_1 mm	l_2 mm	l_1 mm	d_2 mm	13505	...	13507	...
1.0	5.5	34	1.0		**100**		
1.5	8	40	1.5		**101**		
1.6	9	43	1.6		**102**		
1.8	10	46	1.8		**103**		
2.0	11	49	2.0		**104**		
2.2	12	53	2.2		**105**		
2.5	14	57	2.5		**106**		
2.8	15	61	2.8		**107**		
3.0	15	61	3.0		**108**		**108**
3.2	16	65	3.2		**109**		
3.5	18	70	3.5		**110**		
4.0	19	75	4.0		**111**		**111**
4.5	21	80	4.5		**112**		
5.0	23	86	5.0		**113**		**113**
6.0	26	93	5.6		**114**		**114**

				HSS-E		HSS-E/TiN	
d_1 mm	l_2 mm	l_1 mm	d_2 mm	13505	...	13507	...
7.0	31	109	7.1		**115**		**115**
8.0	33	117	8.0		**116**		**116**
9.0	36	125	9.0		**117**		**117**
10.0	38	133	10.0		**118**		**118**
11.0	41	142	10.0		**119**		**119**
12.0	44	151	10.0		**120**		**120**
13.0	44	151	10.0		**121**		**121**
14.0	47	160	12.5		**122**		**122**
15.0	50	162	12.5		**123**		**123**
16.0	52	170	12.5		**124**		**124**
17.0	54	175	14.0		**125**		**125**
18.0	56	182	14.0		**126**		**126**
19.0	58	189	16.0		**127**		**127**
20.0	60	195	16.0		**128**		**128**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
13505																	
14–20	14–20	14–20	10–15	10–13	8–12	4–6	4–6	-	-	-	-	-	-	-	4–6	4–14	8–14
13507																	
14–20	14–20	14–20	10–20	8–15	8–12	4–6	4–6	3–5	-	-	-	-	-	-	4–6	4–14	20–60

Machine reamers | High-helix machine reamers

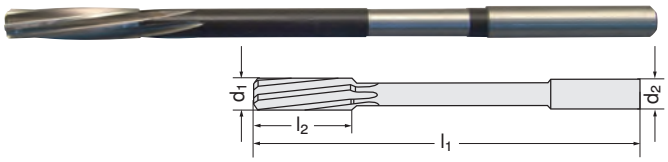
13482 Extra-long machine reamers similar to DIN 212

HSS-E H7

Design
- With straight shank
- Right cutting
- Spiral-fluted
- **H7 accuracy**
- Similar to DIN 212

Quality
HSS-E.

13482



d_1 mm	l_2 mm	l_1 mm	d_2 h9 mm	Max. reamer length mm	Blades	HSS-E 13482 ...
2.0	11	65	2.0	45.0	4	101
3.0	15	90	3.0	65.0	6	102
4.0	19	105	4.0	70.0	6	103
5.0	23	115	5.0	80.0	6	104
6.0	26	130	6.0	90.0	6	105
L 6.0	26	**250**	6.0	210.0	6	106
8.0	33	160	8.0	115.0	6	107
L 8.0	33	**250**	8.0	205.0	6	108
10.0	38	190	10.0	140.0	6	109
L 10.0	38	**250**	10.0	200.0	6	110
12.0	44	210	12.0	160.0	6	111

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–20	10–15	10–13	10–12	8–10	8–10	8–10	8–10	-	-	-	-	-	6–7	5–6	-	6–10	10–15

13509 High-helix machine reamers DIN 212

HSS-E H7

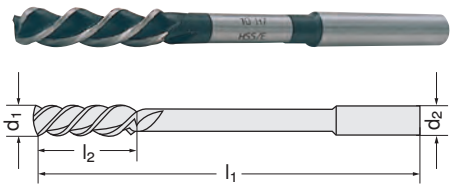
Design
- With straight shank (without square drive)
- Right cutting
- Anticlockwise spiral approx. 45°
- Cut approx. 1/6 of blade length
- **H7 accuracy**

Applications
Ideal for long-chipping materials.

Quality
HSS-E.

Note:
Greater cutting performance and a longer service life than normal reamers thanks to stripping cut and larger chip spaces. Double feed rates and higher cutting speeds achievable. **High-helix taper reamers are not suitable for blind holes.** *Intermediate dimensions deliverable on request.*

13509



d_1 mm	l_2 mm	l_1 mm	d_2 mm	HSS-E 13509 ...
2	11	49	2.0	101
3	15	61	3.0	103
4	19	75	4.0	105
5	23	86	5.0	107

d_1 mm	l_2 mm	l_1 mm	d_2 mm	HSS-E 13509 ...
6	26	93	5.6	108
8	33	117	8.0	110
10	38	133	10.0	112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14–20	14–20	14–20	10–15	10–13	8–12	4–6	4–6	-	-	-	-	-	-	-	4–6	4–14	8–14

13511 Cemented carbide machine reamers DIN 8093

HM K10 H7

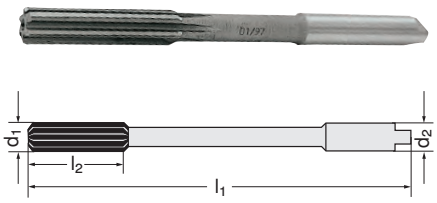
Design
- With straight shank and driver
- Right cutting
- Straight-grooved
- Long cemented-carbide blades
- Similar to DIN 212
- **H7 accuracy**

Applications
For materials that cause serious wear to blades (grey cast iron, plastic). For through holes and blind holes.

Quality
Carbide-tipped blades, grade K 10.

Note:
Only use on stable machines that run without chatter! Intermediate dimensions deliverable on request.

13511



d_1 mm	l_2 mm	l_1 mm	d_2 mm	Carbide-tipped 13511 ...
6	30	93	5.6	102
8	30	117	8.0	104
10	45	133	10.0	106

d_1 mm	l_2 mm	l_1 mm	d_2 mm	Carbide-tipped 13511 ...
12	45	151	10.0	108
14	45	160	12.5	110
16	45	170	12.5	112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14–20	14–20	14–20	10–20	8–15	8–12	4–6	4–6	3–5	-	-	-	-	-	-	4–6	4–14	20–60

13518 Cemented carbide machine reamers DIN 8051

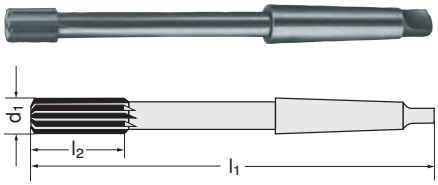
HM K10 | H7

Design
- With Morse taper shank
- Straight-grooved
- Right cutting
- **Short blades**
- **H7 accuracy**

Quality
Carbide-tipped blades, grade K 10.

Note:
d_1 5–7 mm is not standardised.
Intermediate dimensions deliverable on request.

13518



Carbide-tipped

d_1 mm	l_2 mm	l_1 mm	Shank MK	13518	...
5	16	133	1		**101**
6	16	138	1		**102**
7	16	150	1		**103**
8	16	156	1		**104**
9	19	162	1		**105**
10	19	168	1		**106**
11	19	175	1		**107**
12	19	182	1		**108**
13	19	182	1		**109**
14	19	189	1		**110**
15	19	204	2		**111**
16	22	210	2		**112**
17	22	214	2		**113**
18	22	219	2		**114**
19	22	223	2		**115**
20	22	228	2		**116**
21	25	232	2		**117**

Carbide-tipped

d_1 mm	l_2 mm	l_1 mm	Shank MK	13518	...
22	25	237	2		**118**
23	25	241	2		**119**
24	25	268	3		**120**
25	25	268	3		**121**
26	25	273	3		**122**
27	30	277	3		**123**
28	30	277	3		**124**
29	30	281	3		**125**
30	30	281	3		**126**
31	30	285	3		**127**
32	30	317	4		**128**
34	30	321	4		**129**
35	30	321	4		**130**
36	30	325	4		**131**
38	30	329	4		**132**
40	30	329	4		**133**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14–20	14–20	14–20	10–20	8–15	8–12	4–6	4–6	3–5	-	-	-	-	-	-	4–6	4–14	20–60

13521 Machine reamers DIN 208

HSS-E | H7

ATORN®

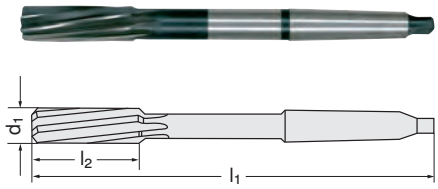
Design
- With Morse taper shank
- Right cutting
- Anticlockwise spiral approx. 7–8°
- **H7 accuracy**

Applications
For through holes and blind holes with and without interruptions.

Quality
HSS-E.

Note:
Intermediate dimensions deliverable on request.

13521



HSS-E

d_1 mm	l_2 mm	l_1 mm	Shank MK	13521	...
5	23	133	1		**101**
6	26	138	1		**102**
7	31	150	1		**103**
8	33	156	1		**104**
9	36	162	1		**105**
10	38	168	1		**106**
11	41	175	1		**107**
12	44	182	1		**108**
13	44	182	1		**109**
14	47	189	1		**110**
15	50	204	2		**111**
16	52	210	2		**112**
17	54	214	2		**113**
18	56	219	2		**114**
19	58	223	2		**115**
20	60	228	2		**116**
21	62	232	2		**117**

HSS-E

d_1 mm	l_2 mm	l_1 mm	Shank MK	13521	...
22	64	237	2		**118**
23	66	241	2		**119**
24	68	268	3		**120**
25	68	268	3		**121**
26	70	273	3		**122**
27	71	277	3		**123**
28	71	277	3		**124**
29	73	281	3		**125**
30	73	281	3		**126**
31	75	285	3		**127**
32	77	317	4		**128**
35	78	321	4		**129**
40	81	329	4		**130**
42	82	333	4		**131**
45	83	336	4		**132**
50	86	344	4		**134**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14–20	14–20	14–20	10–15	10–13	8–12	4–6	4–6	-	-	-	-	-	-	-	4–6	4–14	8–14

Shell reamers | Jet reamers

13811 - 13820 Shell reamers DIN 219

ATORN®

Design
- Conical bore 1:30 and transverse flute in line with DIN 138
- Right cutting
- Anticlockwise spiral 7–8°
- Cut 45°
- **H7 accuracy**
- Cylindrical grinding chamfer

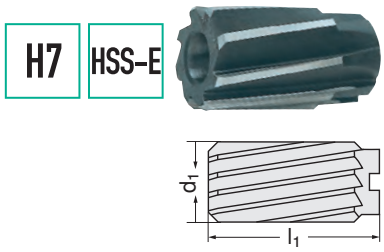
Quality
HSS-E.

Note:
Intermediate dimensions deliverable on request.

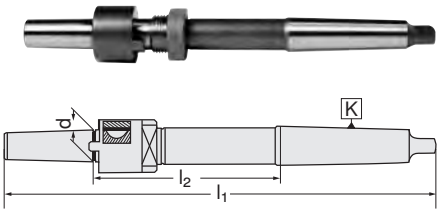
13820
Arbor
Design
- Morse taper shank and flat tangs in accordance with DIN 228 B
- Mounting taper 1:30
- Includes draw-off nuts, driver ring and key
- Fully hardened and ground

Applications
For mounting shell reamers (art. no. 13811)

13811



13820



			Reamers	
d_1 mm	l_1 mm	For holder size	13811	...
25	45	2		108
26	45	2		109
27	45	2		110
28	45	2		111
30	45	2		113
32	50	3		115
34	50	3		117
35	50	3		118
36	56	4		119
38	56	4		121
40	56	4		122
42	56	4		123
44	63	5		124
45	63	5		125
48	63	5		128
50	63	5		129

					Arbor	
Size	d mm	l_2 mm	l_1 mm	Shank MK	13820	...
2	13	111.9	250	3		102
3	16	117.9	261	3		103
4	19	125.6	298	4		104
5	22	132.6	312	4		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14–20	14–20	14–20	10–20	8–15	8–12	4–6	4–6	3–5	-	-	-	-	-	-	4–6	4–14	20–60

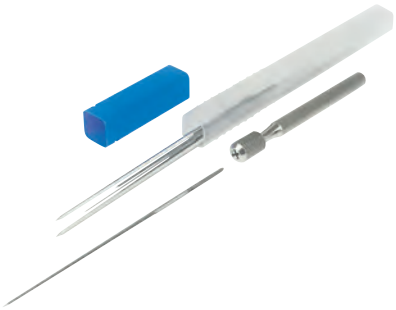
13902 Jet reamer set

Design
Five edges, taper of 1:100, **Set = 12 pieces,** assorted from 0.5–2.0 mm diameter with quick-change holder in plastic sleeve.

Applications
For cleaning nozzles.

Quality
Special steel.

13902



Set contents	13902	...
12 pieces		101

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info

Overview of machine thread-cutting taps/machine thread-forming taps (I)

Brand				ATORN	ATORN	ATORN	ATORN	ATORN	NACHI	ATORN	ATORN	ATORN	ATORN	ATORN
Core hole type	1	Through hole	**M**	14291	14292	14293	14294	14295	14343	14317	14318 1..	14318 2..	14341 1..	14341 2..
	2	Blind hole	**MF**											
	3	Blind and through	**G**											
Cooling lubricant	E	Emulsion	**UNC**											
	0	Oil	**UNF**											
Suitability symbols	●	Well-suited	**Core hole type**	1	1	1	1	1	1	1	1	1	1	1
	○	Limited suitability	**Catalogue page**	14.17	14.18	14.18	14.18	14.18	14.19	14.22	14.23	14.23	14.26	14.26

Material	Speed of cutting Vc m/min		Tolerance	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H
			Base material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
			Coating	-	-	TiN	TiCN	TiN	-	-	Vaporised	TiN	-	TiCN
	Uncoated	Coated	Emulsion/Oil											
Aluminium < 10% Si	20 - 40	30 - 60	E/O						○	○				
Aluminium > 10% Si	10 - 25	20 - 40	E/O						○	○				
Copper	10 - 12	10 - 20	E/O						●	○				
Plastic	20 - 30	-	E/O											
Graphite	5 - 15	5 - 30	E/O											
St < 520 N	5 - 20	5 - 40	E/O	●	●	●	●	●	●	●	●	●	●	●
St < 750 N	5 - 15	5 - 30	E/O	●	●	●	●	●	●	●	●	●	●	●
St < 900 N	5 - 12	5 - 24	E/O		●	●	●	●	●	●	●	●	●	●
St < 1100 N	4 - 10	4 - 15	E/O				●	●	●				●	●
St < 1200 N	2 - 8	2 - 12	E/O						●				●	●
St < 1400 N	2 - 8	2 - 12	E/O						○				●	●
Hardox	-	-	0											
< 52 HRC	-	2 - 6	0											
< 60 HRC	-	2 - 4	0											
< 65 HRC	-	1 - 3	0											
GG	8 - 20	8 - 30	E					●						
GGG	8 - 20	8 - 30	E					●	●					
VA < 900 N	5 - 12	5 - 20	E					●			●	●		
VA > 900 N	5 - 12	5 - 20	E/O					●			●	●		
Titanium	2 - 6	2 - 6	E/O								○	○		
Titanium alloy	2 - 6	2 - 6	E/O								○	○		
Nickel base	2 - 6	2 - 6	E/O								○	○		

Brand				ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Core hole type	1	Through hole	**M**	14344	14345	14346 0..	14346 2..	14347	14348	14349	14350/352			
	2	Blind hole	**MF**									14498	14499	
	3	Blind and through	**G**											14560
Cooling lubricant	E	Emulsion	**UNC**											14577
	0	Oil	**UNF**											
Suitability symbols	●	Well-suited	**Core hole type**	1	1	1	1	1	1	1	1	1	1	
	○	Limited suitability	**Catalogue page**	14.25	14.27	14.28	14.28	14.29	14.30	14.30	14.27	14.59	14.59	14.67/14.68

Material	Speed of cutting Vc m/min		Tolerance	6 H	6 H	6 H	6 H	6 HX	6 HX	6 GX	6 H	6 H	6 H	-
			Base material	HSS-E	HSS-E-PM	HSS-E	HSS-E	PM	PM/IK	PM	HSS-E	HSS-E	HSS-E	HSS-E
			Coating	-	TiCN	Vaporised	TiN	Hardlube	Hardlube	Hardlube	OX	-	-	-
	Uncoated	Coated	Emulsion/Oil											
Aluminium < 10% Si	20 - 40	30 - 60	E/O	○	○	○	○	●	●	●	●	○	○	○
Aluminium > 10% Si	10 - 25	20 - 40	E/O	○	○			●	●	●	●	○	○	○
Copper	10 - 12	10 - 20	E/O		○	○	○	●	●	●	●	○	○	○
Plastic	20 - 30	-	E/O											
Graphite	5 - 15	5 - 30	E/O											
St < 520 N	5 - 20	5 - 40	E/O	●	●	●	●	●	●	●	●	●	●	●
St < 750 N	5 - 15	5 - 30	E/O	●	●	●	●	●	●	●	●	●	●	●
St < 900 N	5 - 12	5 - 24	E/O	●	●	●	●	●	●	●	●	●	●	●
St < 1100 N	4 - 10	4 - 15	E/O	●	●	●	●	●	●	●	●			
St < 1200 N	2 - 8	2 - 12	E/O	●	●									
St < 1400 N	2 - 8	2 - 12	E/O											
Hardox	-	-	0											
< 52 HRC	-	2 - 6	0											
< 60 HRC	-	2 - 4	0											
< 65 HRC	-	1 - 3	0											
GG	8 - 20	8 - 30	E					●	●	●				
GGG	8 - 20	8 - 30	E			○	○	●	●	●				
VA < 900 N	5 - 12	5 - 20	E	○	●	○	○	●	●	●	●			
VA > 900 N	5 - 12	5 - 20	E/O	○	○	○	○	●	●	●	●			
Titanium	2 - 6	2 - 6	E/O											
Titanium alloy	2 - 6	2 - 6	E/O											
Nickel base	2 - 6	2 - 6	E/O											

Info

Overview of machine thread-cutting taps/machine thread-forming taps (II)

Brand				ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	NACHI	NACHI	ATORN
Core hole type	1	Through hole	**M**								14513 0..	14520	
	2	Blind hole	**MF**	14500	14505	14507	14516	14517	14512	14513			14514
	3	Blind and through	**G**										
Cooling lubricant	E	Emulsion	**UNC**										
	0	Oil	**UNF**										
Suitability symbols	●	Well-suited	**Core hole type**	1	1	2	1	2	1	2	1	2	1
	○	Limited suitability	**Catalogue page**	14.59	14.62	14.60	14.64	14.64	14.65	14.65	14.65	14.66	14.66
											NEW	NEW	

Material		Speed of cutting Vc m/min		Tolerance	6 H	6 H	6 H	6 H	6 H	6 HX	6 HX	6 H	6 H	6 HX
				Base material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	PM	PM	HSS-PM	HSS-PM	HSS-E
				Coating	TiN	Vaporised	-	OX	OX	Hardlube	Hardlube	TiCN	-	Nitrated
		Uncoated	Coated	Emulsion/Oil										
Aluminium < 10% Si		20 - 40	30 - 60	E/0	○		○	●	●	●	●	●	●	
Aluminium > 10% Si		10 - 25	20 - 40	E/0	○		○	●	●	●	●	●	●	
Copper		10 - 12	10 - 20	E/0	○		○	●	●	●	●	●	●	
Plastic		20 - 30	-	E/0										
Graphite		5 - 15	5 - 30	E/0										
St < 520 N		5 - 20	5 - 40	E/0	●		●	●	●	●	●	●	●	
St < 750 N		5 - 15	5 - 30	E/0	●		●	●	●	●	●	●	●	
St < 900 N		5 - 12	5 - 24	E/0	●		●	●	●	●	●	●	●	
St < 1100 N		4 - 10	4 - 15	E/0				●	●	●	●	●	●	
St < 1200 N		2 - 8	2 - 12	E/0								●	●	
St < 1400 N		2 - 8	2 - 12	E/0								○	○	
Hardox		-	-	0										
< 52 HRC		-	2 - 6	0										
< 60 HRC		-	2 - 4	0										
< 65 HRC		-	1 - 3	0										
GG		8 - 20	8 - 30	E						●	●			●
GGG		8 - 20	8 - 30	E						●	●	○	○	●
VA < 900 N		5 - 12	5 - 20	E		●		●	●	●	●	○	○	
VA > 900 N		5 - 12	5 - 20	E/0		●		●	●	●	●	○	○	
Titanium		2 - 6	2 - 6	E/0										
Titanium alloy		2 - 6	2 - 6	E/0										
Nickel base		2 - 6	2 - 6	E/0										

Brand				ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Core hole type	1	Through hole	**M**					14354	14355	14356	14358 1..	14358 2..	14393
	2	Blind hole	**MF**										
	3	Blind and through	**G**	14594	14595	14596	14598						
Cooling lubricant	E	Emulsion	**UNC**										
	0	Oil	**UNF**										
Suitability symbols	●	Well-suited	**Core hole type**	1	3	1	3	3	3	1	1	1	2
	○	Limited suitability	**Catalogue page**	14.69	14.69	14.69	14.70	14.32	14.32	14.26	14.32	14.32	14.38

Material		Speed of cutting Vc m/min		Tolerance	DIN 5156	DIN 5156	DIN 5156	DIN 5156	6 H	6 H	6 H	6 HX	6 HX	6 H
				Base material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	VHM	HSS-E-PM	HSS-E	HSS-E	HSS-E
				Coating	-	-	Nitrated	-	TiAlN	TiAlN+C	TiCN	Nitrated	TiN	TiN
		Uncoated	Coated	Emulsion/Oil										
Aluminium < 10% Si		20 - 40	30 - 60	E/0		○		○						○
Aluminium > 10% Si		10 - 25	20 - 40	E/0		○		○						○
Copper		10 - 12	10 - 20	E/0		○		○						○
Plastic		20 - 30	-	E/0										
Graphite		5 - 15	5 - 30	E/0										
St < 520 N		5 - 20	5 - 40	E/0	●	●		●						●
St < 750 N		5 - 15	5 - 30	E/0	●	●		●						●
St < 900 N		5 - 12	5 - 24	E/0	●	●		●						●
St < 1100 N		4 - 10	4 - 15	E/0	●	●		●						
St < 1200 N		2 - 8	2 - 12	E/0	●				●					
St < 1400 N		2 - 8	2 - 12	E/0					●					
Hardox		-	-	0										
< 52 HRC		-	2 - 6	0					●	●				
< 60 HRC		-	2 - 4	0						●				
< 65 HRC		-	1 - 3	0						●				
GG		8 - 20	8 - 30	E			●					●	●	○
GGG		8 - 20	8 - 30	E			●					●	●	
VA < 900 N		5 - 12	5 - 20	E										
VA > 900 N		5 - 12	5 - 20	E/0										
Titanium		2 - 6	2 - 6	E/0							●			
Titanium alloy		2 - 6	2 - 6	E/0							●			
Nickel base		2 - 6	2 - 6	E/0							●			

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= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

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Info

Overview of machine thread-cutting taps/machine thread-forming taps (III)

ATORN 14394	UNIMAX 14342 14510	UNIMAX 14453 14511	HHW 14302/303 14501	HHW 14306/307	ATORN 14360 2..	ATORN 14360 1..	ATORN 14362	NACHI 14366 0..	ATORN 14363 1..	ATORN 14364 1..	ATORN 14364 2..	ATORN 14364 3..	ATORN 14366 1..	ATORN 14363 2..
2 14.38	1 14.29/14.64	2 14.53/14.64	1 14.19/14.61	1 14.20	1 14.33	1 14.33	1 14.30	1 14.31	Moulder 14.33	Moulder 14.34	Moulder 14.34	Moulder 14.34	Moulder 14.34	Moulder 14.33
6 H HSS-E TiCN	6 HX HSS-E-PM Hardlube	6 HX HSS-E-PM Hardlube	6 H HSS-E -	6 H HSS-E OX	6 H HSS-E -	6 H HSS-E-PM CrN	6 HX PM TiCN	6 H HSS-PM TiCN	6 HX PM TiCN	6 HX HSS-E TiN	6 HX HSS-E TiAlN+C	6 HX HSS-E-PM TiCN	6 HX HSS-Co8 TiCN	6 HX HSS-Co8 TiCN IK

ATORN 14373	ATORN 14374	ATORN 14367	ATORN 14368	ATORN 14372	ATORN 14392	ATORN 14599	ATORN 14604	ATORN 14606	ATORN 14607	ATORN 14608	ATORN 14353	HHW 14308	HHW 14309/310	HHW 14319/320
Moulder 14.37	Moulder 14.37	Moulder 14.36	1 14.36	1 14.38	2 14.38	2 14.70	1 14.71	2 14.71	1 14.71	2 14.71	1 14.26	1 14.21	1 14.21	1 14.23
6 HX HSS-Co8 TiCN	6 HX HSS-Co8 TiCN	6 HX VHM TiAlN+C	6 H HSS-E -	6 H HSS-E/left -	6 H HSS-E -	DIN 5156 HSS-E -	DIN 5156 PM Hardlube	DIN 5156 PM Hardlube	DIN 5156 HSS-E OX	DIN 5156 HSS-E OX	6 H HSS-E PM	6G HSS-E -	7 G HSS-E -	6 H HSS-E TiN

( ) = Items with prices in brackets partly available from stock.

Info

Overview of machine thread-cutting taps/machine thread-forming taps (IV)

Brand				HHW	HHW	HHW	HHW	HHW	HHW	HHW	HHW	HHW	HHW	HHW
Core hole type	1	Through hole	**M**	14330/331	14338/339	14361	14365	14406/407		14408/409	14412/413	14436/437		14438
	2	Blind hole	**MF**					14502						
	3	Blind and through	**G**										14601	
Cooling lubricant	E	Emulsion	**UNC**						14570/571					
	0	Oil	**UNF**						14582					
Suitability symbols	●	Well-suited	**Core hole type**	1	1	1	Moulder	2	2	2	2	2	2	2
	○	Limited suitability	**Catalogue page**	14.22	14.24	14.31	14.35	14.41/14.61	14.67/14.68	14.42	14.43	14.45	14.70	14.45

Material	Speed of cutting Vc m/min		Tolerance	6 H	6 H	6 HX	6 HX	6 H	DIN 2184	6 G	6 H	6 H	DIN 5156	6 G
			Base material	HSS-E	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
			Coating	Nitrated	VA-OX	TiCN	TiN	-	-	-	OX	VA-OX	VA-OX	VA-OX
	Uncoated	Coated	Emulsion/Oil											
Aluminium < 10% Si	20 - 40	30 - 60	E/O		●	○	●	○	○	○		●	●	●
Aluminium > 10% Si	10 - 25	20 - 40	E/O		●	○	●	○	○	○		●	●	●
Copper	10 - 12	10 - 20	E/O		●	○	●	○	○	○		●	●	●
Plastic	20 - 30	-	E/O					○	○	○				
Graphite	5 - 15	5 - 30	E/O											
St < 520 N	5 - 20	5 - 40	E/O	●	●	●	●	●	●	●	●	●	●	●
St < 750 N	5 - 15	5 - 30	E/O	●	●	●	●	●	●	●	●	●	●	●
St < 900 N	5 - 12	5 - 24	E/O	●	●	●	●					●	●	●
St < 1100 N	4 - 10	4 - 15	E/O		●	●	●					●	●	●
St < 1200 N	2 - 8	2 - 12	E/O											
St < 1400 N	2 - 8	2 - 12	E/O											
Hardox	-	-	0											
< 52 HRC	-	2 - 6	0											
< 60 HRC	-	2 - 4	0											
< 65 HRC	-	1 - 3	0											
GG	8 - 20	8 - 30	E			○								
GGG	8 - 20	8 - 30	E			○								
VA < 900 N	5 - 12	5 - 20	E		●	●	●					●		●
VA > 900 N	5 - 12	5 - 20	E/O		●	○	●					●		●
Titanium	2 - 6	2 - 6	E/O											
Titanium alloy	2 - 6	2 - 6	E/O											
Nickel base	2 - 6	2 - 6	E/O											

Brand				NACHI	NACHI	HHW	EMUGE	NACHI	NACHI	ATORN	ATORN	ATORN	ATORN	ATORN
Core hole type	1	Through hole	**M**	14414	14411	14443/444		14518	14519	14396		14397	14398	14399
	2	Blind hole	**MF**				14506			14508		14509		
	3	Blind and through	**G**											
Cooling lubricant	E	Emulsion	**UNC**								14565			
	0	Oil	**UNF**								14578			
Suitability symbols	●	Well-suited	**Core hole type**	1	2	2	2	1	2	2	2	2	2	2
	○	Limited suitability	**Catalogue page**	14.46	14.46	14.47	14.62	14.63	14.63	14.39/14.60	14.67/14.68	14.39/14.60	14.39	14.40

Material	Speed of cutting Vc m/min		Tolerance	6 H	6 H	6 H	6 H	6 H	6 H	6 H	-	6 H	6 H	6 H
			Base material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
			Coating	-	-	VA-OX	-	-	-	-	-	TiN	TiCN	-
	Uncoated	Coated	Emulsion/Oil											
Aluminium < 10% Si	20 - 40	30 - 60	E/O	●	●	●	●	○	○	○	○	○	○	
Aluminium > 10% Si	10 - 25	20 - 40	E/O	●	●	●	●	○	○	○	○	○	○	
Copper	10 - 12	10 - 20	E/O	●	●	●	●	●	●	○	○	○	○	
Plastic	20 - 30	-	E/O	●	●			○	○					
Graphite	5 - 15	5 - 30	E/O											
St < 520 N	5 - 20	5 - 40	E/O	○	○	●	●	●	●	●	●	●	●	●
St < 750 N	5 - 15	5 - 30	E/O	○	○	●	●	●	●	●	●	●	●	●
St < 900 N	5 - 12	5 - 24	E/O	○	○	●	●	●	●	●	●	●	●	●
St < 1100 N	4 - 10	4 - 15	E/O	○	○	●	●	●	●				●	●
St < 1200 N	2 - 8	2 - 12	E/O	○	○			●	●					
St < 1400 N	2 - 8	2 - 12	E/O					○	○					
Hardox	-	-	0											
< 52 HRC	-	2 - 6	0											
< 60 HRC	-	2 - 4	0											
< 65 HRC	-	1 - 3	0											
GG	8 - 20	8 - 30	E											
GGG	8 - 20	8 - 30	E					●	●					
VA < 900 N	5 - 12	5 - 20	E	●	●	●	●							
VA > 900 N	5 - 12	5 - 20	E/O	●	●	●	●							
Titanium	2 - 6	2 - 6	E/O											
Titanium alloy	2 - 6	2 - 6	E/O											
Nickel base	2 - 6	2 - 6	E/O											

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Info

Overview of machine thread-cutting taps/machine thread-forming taps (V)

ATORN® 14463 1..	ATORN® 14463 2..	ATORN® 14467	NACHI 14422	ATORN® 14473	HHW 14447/448	HHW 14451/452	ATORN® 14445	ATORN® 14446	ATORN® 14431/432	EMUGE 14420/421	EMUGE 14605	EMUGE 14439/440	EMUGE 14459	14304/305 14504
2	2	2	2	2	2	2	2	2	2	2	2	2	2	1
14.57	14.57	14.54	14.55	14.58	14.48	14.49	14.48	14.50	14.50	14.43	14.72	14.47	14.57	14.20/14.61
			NEW											
6 H	6 H	6 HX	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H	DIN 5156	6 H	6 H	6 H
HSS-E	HSS-E-PM	PM	HSS-PM	HSS-E/left	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
-	CrN	TiCN	TiCN	-	TiN	-	-	-	OX	-	-	-	-	-

HHW 14333/334	HHW 14400/401	HHW 14402/403	ATORN® 14433	ATORN® 14449 1..	ATORN® 14449 2..	ATORN® 14450	ATORN® 14454	ATORN® 14455 0..	ATORN® 14455 2..	ATORN® 14456	ATORN® 14457	ATORN® 14458	ATORN® 14462	HHW 14466
1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14.24	14.41	14.42	14.51	14.49	14.49	14.52	14.56	14.52	14.52	14.53	14.54	14.54	14.56	14.55
6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 H	6 HX	6 HX	6 GX	6 H	6 HX
HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E-PM	HSS-E	HSS-E	PM	PM/IK	PM	HSS-E	HSS-E-PM
TiCN	-	-	OX	blank	TiCN	TiCN	-	-	TiN	Hardlube	Hardlube	Hardlube	-	TiCN

Info — Overview of machine thread-cutting taps/machine thread-forming taps (VI)

Brand				EMUGE	EMUGE	ATORN	NACHI	ATORN	ATORN			
Core hole type	1	Through hole	M	14315/316	14340	14404	14410	14425 1..	14425 2..		14429/430	
	2	Blind hole	MF									
	3	Blind and through	G							14603		14602
Cooling lubricant	E	Emulsion	UNC									
	0	Oil	UNF									
Suitability symbols	●	Well-suited	Core hole type	1	1	2	2	2	2		2	3
	O	Limited suitability	Catalogue page	14.21	14.25	14.39	14.40	14.44	14.44	14.72	14.44	14.72

Material	Speed of cutting Vc m/min Uncoated	Coated	Tolerance Base material Coating Emulsion/Oil	6 H HSS-E -	6 H HSS-E -	6 H HSS-E-PM TiN	6 H HSS-E -	6 H HSS-E Vaporised	6 H HSS-E TiN	DIN 5156 HSS-E -	6 H HSS-E TiCN	DIN 5156 HSS-E -
Aluminium < 10% Si	20 - 40	30 - 60	E/0				O			O		O
Aluminium > 10% Si	10 - 25	20 - 40	E/0				O			O		O
Copper	10 - 12	10 - 20	E/0				●			O		O
Plastic	20 - 30	-	E/0							O		
Graphite	5 - 15	5 - 30	E/0									
St < 520 N	5 - 20	5 - 40	E/0	●	O	●	●	●		●	O	●
St < 750 N	5 - 15	5 - 30	E/0	●	O	●	●	●		●	O	●
St < 900 N	5 - 12	5 - 24	E/0	●	O	●	●	●			O	●
St < 1100 N	4 - 10	4 - 15	E/0		O	●	●					
St < 1200 N	2 - 8	2 - 12	E/0				●					
St < 1400 N	2 - 8	2 - 12	E/0									
Hardox	-	-	0									
< 52 HRC	-	2 - 6	0									
< 60 HRC	-	2 - 4	0									
< 65 HRC	-	1 - 3	0									
GG	8 - 20	8 - 30	E		O	O						
GGG	8 - 20	8 - 30	E		O		●					
VA < 900 N	5 - 12	5 - 20	E		●	O		●	●		O	
VA > 900 N	5 - 12	5 - 20	E/0		●	O		●	●		O	
Titanium	2 - 6	2 - 6	E/0					O				
Titanium alloy	2 - 6	2 - 6	E/0					O				
Nickel base	2 - 6	2 - 6	E/0					O				

Info — The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use				P M K H 42 coated
HM grade				
Coating				
Designation	$W^{\pm 0,1}$ mm	$R^{\pm 0,05}$ mm		18674 ...
GTN-2	2,2	0,16	10 pieces	113
GTN-3	3,1	0,20	10 pieces	114

Info

Core hole dimensions for thread cutting/thread forming

Core hole dimensions for thread cutting

M	Ø mm	MF	Ø mm	MF	Ø mm	UNC	Ø mm	g	Ø mm	UNF	Ø mm	PG	Ø mm	NPT	Ø mm
M 1	0.75	M 2.5 x 0.35	2.15	M 22 x 1.5	20.50	No. 1	1.50	G 1/8	8.80	No. 4	2.40	PG7	11.40	1/16	6.30
M 1.1	0.85	M 3 x 0.35	2.65	M 22 x 2	20.00	No. 2	1.80	G 1/4	11.80	No. 5	2.70	PG9	14.00	1/8	8.50
M 1.2	0.95	M 3.5 x 0.35	3.15	M 24 x 1	23.00	No. 3	2.10	G 3/8	15.25	No. 6	3.00	PG11	17.25	1/4	11.10
M 1.4	1.10	M 4 x 0.35	3.65	M 24 x 1.5	22.50	No. 4	2.30	G 1/2	19.00	No. 8	3.50	PG13.5	19.00	3/8	14.50
M 1.6	1.25	M 4 x 0.5	3.50	M 24 x 2	22.00	No. 5	2.65	G 3/4	24.50	No. 10	4.10	PG16	21.25	1/2	17.75
M 1.8	1.45	M 5 x 0.5	4.50	M 25 x 1.5	23.50	No. 6	2.85	G 1	30.75	No. 12	4.65	PG21	27.00	3/4	23.00
M 2	1.60	M 6 x 0.5	5.50	M 26 x 1.5	24.50	No. 8	3.50	G 1 1/8	35.50	1/4	5.50	PG26	35.50	1	29.00
M 2.2	1.75	M 6 x 0.75	5.20	M 27 x 1.5	25.50	No. 10	3.90	G 1 1/4	39.50	5/16	6.90				
M 2.5	2.05	M 7 x 0.75	6.20	M 27 x 2	25.00	No. 12	4.50	G 1 1/2	45.00	3/8	8.50				
M 3	2.50	M 8 x 0.5	7.50	M 28 x 1.5	26.50	1/4	5.10			7/16	9.90				
M 3.5	2.90	M 8 x 0.75	7.20	M 30 x 1	29.00	5/16	6.60			1/2	11.50				
M 4	3.30	M 8 x 1	7.00	M 30 x 1.5	28.50	3/8	8.00			9/16	12.90				
M 4.5	3.80	M 9 x 1	8.00	M 30 x 2	28.00	7/16	9.40			5/8	14.50				
M 5	4.20	M 10 x 0.75	9.20	M 32 x 1.5	30.50	1/2	10.80			3/4	17.50				
M 6	5.00	M 10 x 1	9.00	M 33 x 2	31.00	9/16	12.2			7/8	20.50				
M 7	6.00	M 10 x 1.25	8.80	M 34 x 1.5	32.50	5/8	13.50			1	23.25				
M 8	6.80	M 11 x 1	10.00	M 36 x 1.5	34.50	3/4	16.50								
M 9	7.80	M 12 x 1	11.00	M 36 x 2	34.00	7/8	19.50								
M 10	8.50	M 12 x 1.25	10.80	M 36 x 3	33.00	1	22.25								
M 11	9.50	M 12 x 1.5	10.50	M 38 x 1.5	36.50										
M 12	10.20	M 14 x 1	13.00	M 40 x 1.5	38.50										
M 14	12.00	M 14 x 125	12.80	M 42 x 1.5	40.50										
M 16	14.00	M 14 x 1.5	12.50												
M 18	15.50	M 15 x 1	14.00												
M 20	17.50	M 15 x 1.5	13.50												
M 22	19.50	M 16 x 1	15.00												
M 24	21.00	M 16 x 1.5	14.50												
M 30	26.50	M 18 x 1.5	16.50												
M 33	29.50	M 20 x 1	19.00												
M 36	32.00	M 20 x 1.5	18.50												
M 39	35.00	M 20 x 2	18.00												
M 42	37.50	M 22 x 1	21.00												

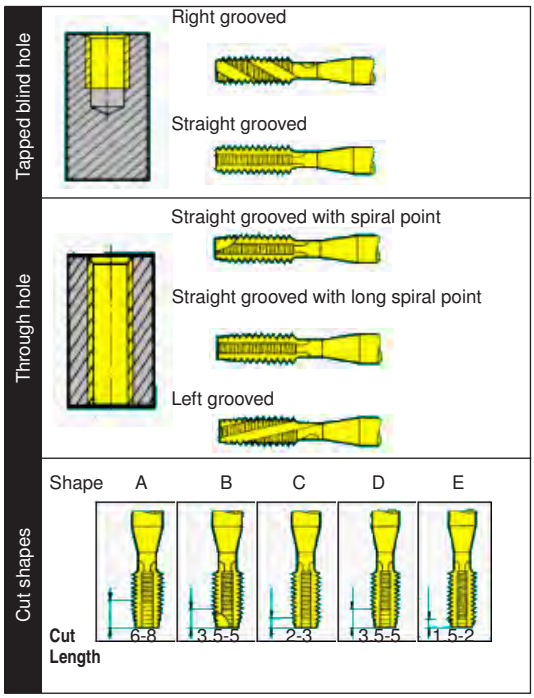
Core hole dimensions for thread forming

M	Ø mm	M	Ø mm	MF	Ø mm	MF	Ø mm	MF	Ø mm
M 1	0.90	M 3.5	3.25	M 2.5 x 0.35	2.35	M 10 x 0.75	9.65	M 14 x 1.5	13.30
M 1.2	1.10	M 4	3.70	M 3 x 0.35	2.85	M 10 x 1	9.50	M 16 x 1	15.50
M 1.4	1.10	M 5	4.65	M 3.5 x 0.35	3.35	M 10 x 1.25	9.40	M 16 x 1.5	15.30
M 1.6	1.45	M 6	5.55	M 4 x 0.5	3.80	M 12 x 1	11.50	M 18 x 1.5	17.30
M 1.8	1.65	M 8	7.40	M 4.5 x 0.5	4.30	M 12 x 1.25	11.40	M 20 x 1.5	19.50
M 2	1.83	M 10	9.30	M 5 x 0.5	4.80	M 12 x 1.5	11.30	M 20 x 1.5	19.30
M 2.2	2.00	M 12	11.10	M 6 x 0.75	5.65	M 14 x 1	13.50	M 20 x 2	19.00
M 2.5	2.30	M 14	13.00	M 8 x 0.75	7.65				
M 3	2.80	M 16	15.00	M 8 x 1	7.50				

Cooling lubricants for thread cutting

The problem zone is reached as soon as the emulsion has a fat content of less than 5%

- A pure cooling effect is created; the actual lubrication effect is dispensed with.
- The result is a build-up of cutting edges.
- The surface quality becomes very poor.
- The service life is reduced.
- Optimisation is achieved with IKZ (internal coolant supply).



Minimum quantity lubrication (MMS)

- Lubrication of the tool and the workpiece through oil droplets finely distributed in an air flow.
- Feed of lubricant through internal or external MMS.

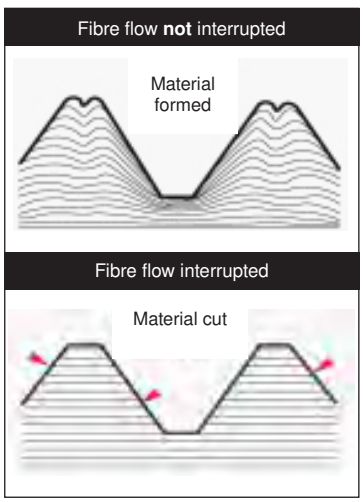
Advantage:

- Elimination of cooling lubricant.
- No disposal costs for chips and cooling lubricants.
- Elimination of workpiece cleaning.

With cut threads, the permissible load values are affected by the cutting of the material fibres. In addition, flank angle errors, which cause unfavourable stress distributions and reduce the load-bearing percentage, can occur more easily. With formed threads, unbroken fibres and a cold-bonded material are produced, whereby the tear-out strength is considerably increased. Additional flank angle deviations are avoided because the material deforms without play on the flank of the tool. The incompletely formed core, a typical feature of shaped threads, has no effect the strength.

Thread forming

- A highly compressible cooling lubricant is required for thread forming.
- The lubricating film must not tear off.
- If you form with emulsion, it should have a fat content of at least 8-10%.



21470 Thread-cutting machine

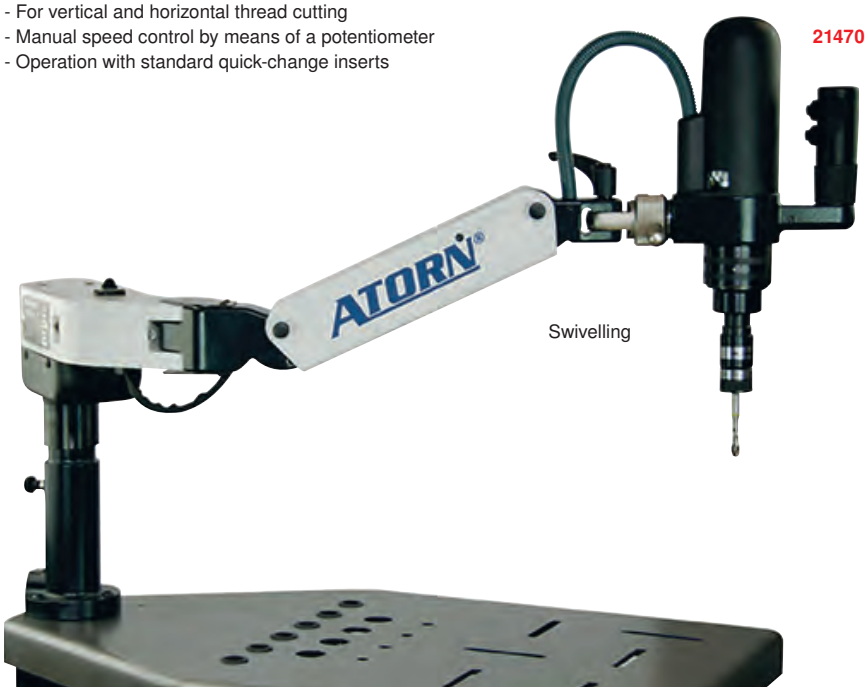
ATORN®

Design
- Electrically driven motor
- For vertical and horizontal thread cutting
- Manual speed control by means of a potentiometer
- Operation with standard quick-change inserts

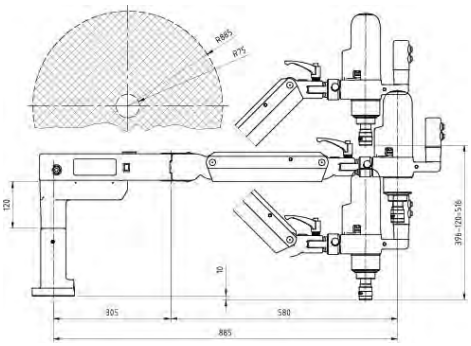
Scope of delivery:
- Basic tool chuck
- Articulated arm and swivel adapter for vertical and horizontal thread cutting

Options:
- Automatic tool lubrication
- Workbenches with wheels
- Magnetic holder
- Quick-change inserts (see art no. 21459–21460)

21470 101



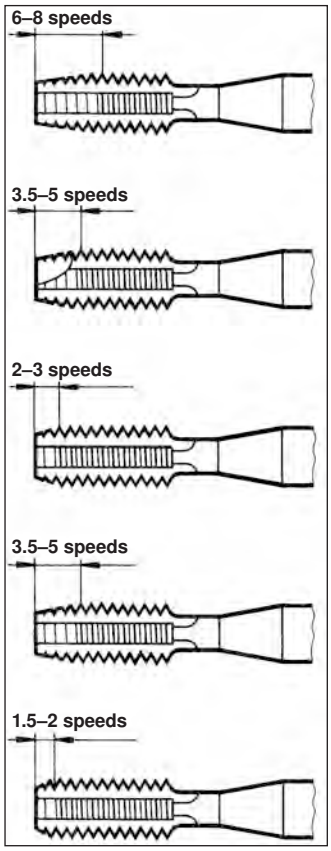
Swivelling



d1 (H9) Thread-cutting performance	Rotation speed rpm	Torque Nm	Connection V	Work area radius in mm	Work area height in mm	Tool chuck size in mm	21470	...
Steel M2–M14/aluminium M2–M16	300/600	34	220	75–885	516	1/19		101

	21470	...
Table clamp		201

Info Cutting point shapes DIN screw taps



Type A

Type B

Type C

Type D

Type E

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14010 - 14020 Hand taps

M | 6H | DIN 352 | ≤ 2xD | HSS | ≤ 800 N/mm²

Design
Up to M 1.4 tolerance field ISO 1 (4H).

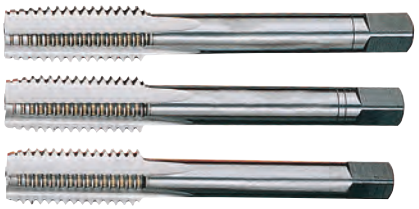
14010
Three pieces in set:
taper, second and third tap.

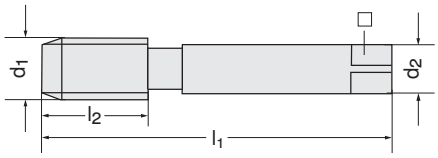
14018
Taper tap

14019
Second tap

14020
Third tap

14010





						Set		No 1		No 2		F	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x T mm	14010	...	14018	...	14019	...	14020	...
M 1	0.75	0.25	5.5	32	2.5 x 2.1		301		101		101		101
M 1.1	0.85	0.25	5.5	32	2.5 x 2.1		302		102		102		102
M 1.2	0.95	0.25	5.5	32	2.5 x 2.1		303		103		103		103
M 1.4	1.10	0.30	7.0	32	2.5 x 2.1		304		104		104		104
M 1.6	1.25	0.35	8.0	32	2.5 x 2.1		305		105		105		105
M 1.8	1.45	0.35	8.0	32	2.5 x 2.1		306		106		106		106
M 2	1.60	0.40	8.0	36	2.8 x 2.1		307		107		107		107
M 2.2	1.75	0.45	9.0	36	2.8 x 2.1		308		108		108		108
M 2.5	2.05	0.45	9.0	40	2.8 x 2.1		309		109		109		109
M 3	2.50	0.50	11.0	40	3.5 x 2.7		310		110		110		110
M 3.5	2.90	0.60	12.0	45	4.0 x 3.0		311		111		111		111
M 4	3.30	0.70	13.0	45	4.5 x 3.4		312		112		112		112
M 4.5	3.70	0.75	16.0	50	6.0 x 4.9		313		113		113		113
M 5	4.20	0.80	16.0	50	6.0 x 4.9		314		114		114		114
M 6	5.00	1.00	19.0	56	6.0 x 4.9		315		115		115		115
M 7	6.00	1.00	19.0	56	6.0 x 4.9		316		116		116		116
M 8	6.80	1.25	22.0	63	6.0 x 4.9		317		117		117		117
M 9	7.80	1.25	22.0	63	7.0 x 5.5		318		118		118		118
M 10	8.50	1.50	24.0	70	7.0 x 5.5		319		119		119		119
M 11	9.50	1.50	24.0	70	8.0 x 6.2		320		120		120		120
M 12	10.20	1.75	28.0	75	9.0 x 7.0		321		121		121		121
M 14	12.00	2.00	30.0	80	11.0 x 9.0		322		123		123		123
M 16	14.00	2.00	32.0	80	12.0 x 9.0		323		125		125		125
M 18	15.50	2.50	34.0	95	14.0 x 11.0		324		127		127		127
M 20	17.50	2.50	34.0	95	16.0 x 12.0		325		129		129		129
M 22	19.50	2.50	34.0	100	18.0 x 14.5		326		131		131		131
M 24	21.00	3.00	38.0	110	18.0 x 14.5		327		133		133		133
M 27	24.00	3.00	38.0	110	20.0 x 16.0		328		136		136		136
M 30	26.50	3.50	45.0	125	22.0 x 18.0		329		139		139		139
M 33	29.50	3.50	50.0	125	25.0 x 20.0		330		142		142		142
M 36	32.00	4.00	56.0	150	28.0 x 22.0		331		145		145		145
M 39	35.00	4.00	60.0	150	32.0 x 24.0		332		148		148		148
M 42	37.50	4.50	60.0	150	32.0 x 24.0		333		151		151		151

Hand taps

14014 - 14028 Hand taps

M | 6H | DIN 352 | ≤2,5xD | HSS | ≤ 800 N/mm²

Design
Up to M 1.4 tolerance field ISO 1 (4H).

Note:
Cost-effective design.

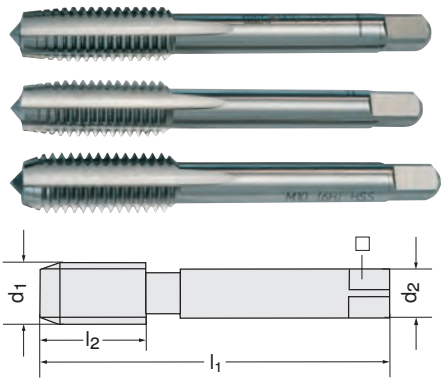
14014
Three pieces in set:
taper, second and third tap.

14026
Taper tap

14027
Second tap

14028
Third tap

14014



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Set 14014	...	No 1 14026	...	No 2 14027	...	F 14028	...
M 3	2.50	0.50	11.0	40	3.5 x 2.7		310		110		110		110
M 4	3.30	0.70	13.0	45	4.5 x 3.4		312		112		112		112
M 5	4.20	0.80	16.0	50	6.0 x 4.9		314		114		114		114
M 6	5.00	1.00	19.0	56	6.0 x 4.9		315		115		115		115
M 8	6.80	1.25	22.0	63	6.0 x 4.9		317		117		117		117
M 10	8.50	1.50	24.0	70	7.0 x 5.5		319		119		119		119
M 12	10.20	1.75	28.0	75	9.0 x 7.0		321		121		121		121
M 14	12.00	2.00	30.0	80	11.0 x 9.0		322		122		122		122
M 16	14.00	2.00	32.0	80	12.0 x 9.0		323		123		123		123
M 18	15.50	2.50	34.0	95	14.0 x 11.0		324		124		124		124
M 20	17.50	2.50	34.0	95	16.0 x 12.0		325		125		125		125
M 22	19.50	2.50	34.0	100	18.0 x 14.5		326		126		126		126
M 24	21.00	3.00	38.0	110	18.0 x 14.5		327		127		127		127
M 27	24.00	3.00	38.0	110	20.0 x 16.0		328		128		128		128
M 30	26.50	3.50	45.0	125	22.0 x 18.0		329		129		129		129

14016 - 14025 Hand taps

M | 6H | DIN 352 | ≤2,5xD | HSS-E | VA-OX | ≤ 1200 N/mm²

Design
Up to M 1.4 tolerance field ISO 1 (4H).

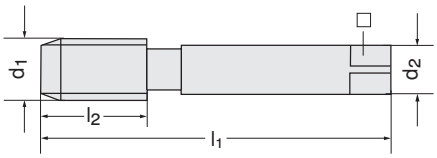
14016
Three pieces in set:
taper, second and third tap.

14023
Taper tap

14024
Second tap

14025
Third tap

14016



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Set 14016	...	No 1 14023	...	No 2 14024	...	F 14025	...
M 2	1.60	0.40	8.0	36	2.8 x 2.1		307		101		101		101
M 2.5	2.05	0.45	9.0	40	2.8 x 2.1		309		103		103		103
M 3	2.50	0.50	11.0	40	3.5 x 2.7		310		104		104		104
M 3.5	2.90	0.60	12.0	45	4.0 x 3.0		311		105		105		105
M 4	3.30	0.70	13.0	45	4.5 x 3.4		312		106		106		106
M 5	4.20	0.80	16.0	50	6.0 x 4.9		314		107		107		107
M 6	5.00	1.00	19.0	56	6.0 x 4.9		315		108		108		108
M 8	6.80	1.25	22.0	63	6.0 x 4.9		317		109		109		109
M 10	8.50	1.50	24.0	70	7.0 x 5.5		319		110		110		110
M 12	10.20	1.75	28.0	75	9.0 x 7.0		321		111		111		111
M 14	12.00	2.00	30.0	80	11.0 x 9.0		322		112		112		112
M 16	14.00	2.00	32.0	80	12.0 x 9.0		323		113		113		113

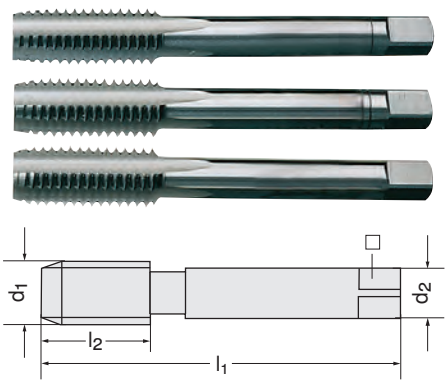
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14037 Hand tap set with left-hand thread

M | 6H | DIN 352 | ≤2,5xD | HSS | ≤ 800 N/mm²

Design
Three pieces in set:
Taper, second and third tap.

14037



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	HSS 14037	...
M 3	2.50	0.50	11	40	3.5 x 2.7		**301**
M 4	3.30	0.70	13	45	4.5 x 3.4		**302**
M 5	4.20	0.80	16	50	6.0 x 4.9		**303**
M 6	5.00	1.00	19	56	6.0 x 4.9		**304**
M 8	6.80	1.25	22	63	6.0 x 4.9		**305**
M 10	8.50	1.50	24	70	7.0 x 5.5		**306**
M 12	10.20	1.75	28	75	9.0 x 7.0		**307**
M 14	12.00	2.00	30	80	11.0 x 9.0		**308**
M 16	14.00	2.00	32	80	12.0 x 9.0		**309**
M 18	15.50	2.50	34	95	14.0 x 11.0		**310**
M 20	17.50	2.50	34	95	16.0 x 12.0		**311**

Hand taps

14052 - 14054 Hand taps

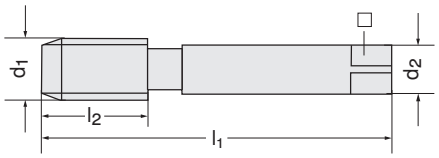
MF | 6H | DIN 2181 | ≤2,5xD | HSS | ≤ 800 N/mm²

HHW

14052
Two pieces in set:
taper and third tap.

14054 101-191
Taper tap

14054 102-192
Third tap



3.5–5 D

2–3 C

14052

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x □ mm	Set 14052 ...	No 1 14054 ...	F 14054 ...
M 3 x 0.35	2.65	8	40	3.5 x 2.7	304	101	102
M 3.5 x 0.35	3.15	9	45	4.0 x 3.0	305	103	104
M 4 x 0.50	3.50	10	45	4.5 x 3.4	307	107	108
M 5 x 0.50	4.50	12	50	6.0 x 4.9	308	111	112
M 6 x 0.50	5.50	14	56	6.0 x 4.9	309		
M 6 x 0.75	5.20	14	56	6.0 x 4.9	310	115	116
M 7 x 0.75	6.20	14	56	6.0 x 4.9	311	119	120
M 8 x 0.50	7.50	18	56	6.0 x 4.9	312		
M 8 x 0.75	7.20	18	56	6.0 x 4.9	313	121	122
M 8 x 1.00	7.00	22	63	6.0 x 4.9	314	123	124
M 9 x 1.00	8.00	22	63	7.0 x 5.5	315	125	126
M 10 x 0.75	9.20	20	63	7.0 x 5.5	316		
M 10 x 1.00	9.00	20	63	7.0 x 5.5	317	129	130
M 10 x 1.25	8.80	24	70	7.0 x 5.5	318		
M 11 x 1.00	10.00	20	63	8.0 x 6.2	319	133	134
M 12 x 1.00	11.00	22	70	9.0 x 7.0	320	135	136
M 12 x 1.25	10.75	22	70	9.0 x 7.0	321		
M 12 x 1.25	10.80	22	70	9.0 x 7.0		137	138
M 12 x 1.50	10.50	22	70	9.0 x 7.0	322	139	140
M 14 x 1.00	13.00	22	70	11.0 x 9.0	323		
M 14 x 1.25	12.80	22	70	11.0 x 9.0	324		
M 14 x 1.50	12.50	22	70	11.0 x 9.0	325	145	146
M 15 x 1.00	14.00	22	70	12.0 x 9.0	326		
M 15 x 1.50	13.50	22	70	12.0 x 9.0	327		
M 16 x 1.00	15.00	22	70	12.0 x 9.0	328		
M 16 x 1.50	14.50	22	70	12.0 x 9.0	329	153	154
M 18 x 1.00	17.00	22	80	14.0 x 11.0	330		
M 18 x 1.50	16.50	22	80	14.0 x 11.0	331	157	158
M 18 x 2.00	16.00	22	80	14.0 x 11.0	332		
M 20 x 1.00	19.00	22	80	16.0 x 12.0	333		
M 20 x 1.50	18.50	22	80	16.0 x 12.0	334	163	164
M 20 x 2.00	18.00	22	80	16.0 x 12.0	335		
M 22 x 1.00	21.00	22	80	18.0 x 14.5	336		
M 22 x 1.50	20.50	22	80	18.0 x 14.5	337	169	170
M 22 x 2.00	20.00	22	80	18.0 x 14.5	338		
M 24 x 1.00	23.00	22	90	18.0 x 14.5	339		
M 24 x 1.50	22.50	22	90	18.0 x 14.5	340	175	176
M 24 x 2.00	22.00	22	90	18.0 x 14.5	341		
M 25 x 1.50	23.50	22	90	18.0 x 14.5	342		
M 26 x 1.50	24.50	22	90	18.0 x 14.5	343	181	182
M 27 x 1.50	25.50	22	90	20.0 x 16.0	344		
M 27 x 2.00	25.00	22	90	20.0 x 16.0	345		
M 28 x 1.50	26.50	22	90	20.0 x 16.0	346		
M 30 x 1.00	29.00	22	90	22.0 x 18.0	347		
M 30 x 1.50	28.50	22	90	22.0 x 18.0	348	191	192
M 30 x 2.00	28.00	22	90	22.0 x 18.0	349		
M 32 x 1.50	30.50	22	90	22.0 x 18.0	350		
M 33 x 2.00	31.00	25	100	25.0 x 20.0	352		
M 34 x 1.50	32.50	25	100	28.0 x 22.0	353		
M 36 x 1.50	34.50	25	100	28.0 x 22.0	354		
M 36 x 2.00	34.00	40	125	28.0 x 22.0	355		
M 36 x 3.00	33.00	40	125	28.0 x 22.0	356		
M 38 x 1.50	36.50	25	100	28.0 x 22.0	357		
M 40 x 1.50	38.50	25	110	32.0 x 24.0	358		
M 42 x 1.50	40.50	25	110	32.0 x 24.0	359		

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14055 - 14058 Tool manufacturer hand taps

M | 6H | DIN 352 | ≤2,5xD | HSS-E | VA-OX | ≤1200 N/mm²

Design
Taper tap with pilot.

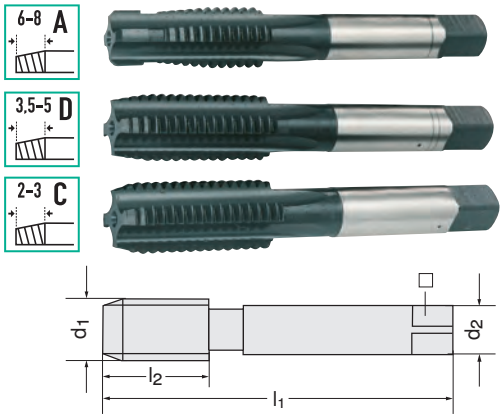
14055
Three pieces in set:
taper, second and third tap.

14056
Taper tap

14057
Second tap

14058
Third tap

14055



						Set		No 1		No 2		F	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14055	...	14056	...	14057	...	14058	...
M 2	1.60	0.40	8	36	2.8 x 2.1	201		201		201		201	
M 2.5	2.05	0.45	9	40	2.8 x 2.1	204		204		204		204	
M 3	2.50	0.50	11	40	3.5 x 2.7	206		206		206		206	
M 4	3.30	0.70	13	45	4.5 x 3.4	208		208		208		208	
M 5	4.20	0.80	16	50	6.0 x 4.9	209		209		209		209	
M 6	5.00	1.00	19	56	6.0 x 4.9	210		210		210		210	
M 8	6.80	1.25	22	63	6.0 x 4.9	211		211		211		211	
M 10	8.50	1.50	24	70	7.0 x 5.5	212		212		212		212	
M 12	10.20	1.75	28	75	9.0 x 7.0	213		213		213		213	
M 14	12.00	2.00	30	80	11.0 x 9.0	214		214		214		214	
M 16	14.00	2.00	32	80	12.0 x 9.0	215		215		215		215	

14060 Tool manufacturer hand taps

M | 6H | DIN 352 | ≤2,5xD | HSS-E PM | Uni | ≤1200 N/mm²

Design
Taper tap with pilot.

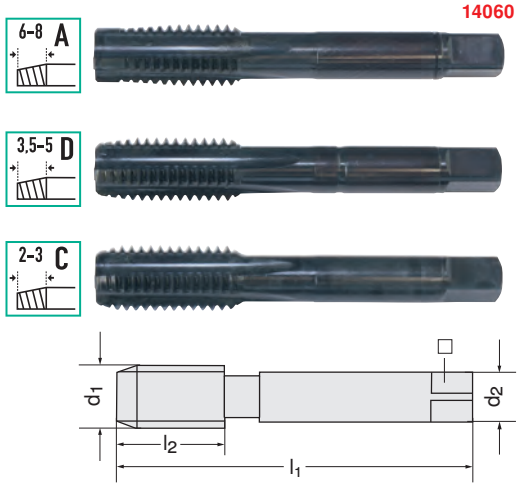
14060 103-112
Three pieces in set:
taper, second and third tap.

14060 203-212
Taper tap

14060 303-312
Second tap

14060 403-412
Third tap

14060



						Set		No 1		No 2		F	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14060	...	14060	...	14060	...	14060	...
M 3	2.50	0.50	10	40	3.5 x 2.7	103		203		303		403	
M 4	3.30	0.70	12	45	4.5 x 3.4	104		204		304		404	
M 5	4.20	0.80	14	50	6.0 x 4.9	105		205		305		405	
M 6	5.00	1.00	16	56	6.0 x 4.9	106		206		306		406	
M 8	6.80	1.25	18	63	6.0 x 4.9	108		208		308		408	
M 10	8.50	1.50	20	70	7.0 x 5.5	110		210		310		410	
M 12	10.20	1.75	24	75	9.0 x 7.0	112		212		312		412	

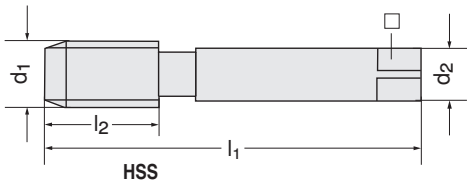
14059 Hand tap set

BSW | DIN 352 | ≤ 3xD | HSS | ≤ 800 N/mm²

HW

Design
Three pieces in set:
taper, second and third tap.

14059



HSS

d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	14059	...
BSW 1/8	2.50	40	11	40	3.5 x 2.7		201
BSW 3/16	3.70	24	16	50	6.0 x 4.9		202
BSW 1/4	5.10	20	19	56	6.0 x 4.9		203
BSW 5/16	6.50	18	22	63	6.0 x 4.9		204
BSW 3/8	7.90	16	22	63	7.0 x 5.5		205

HSS

d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	14059	...
BSW 1/2	10.50	12	28	75	9.0 x 7.0		206
BSW 5/8	13.50	11	32	80	12.0 x 9.0		207
BSW 3/4	16.50	10	34	95	14.0 x 11.0		208
BSW 7/8	19.25	9	34	100	18.0 x 14.5		209
BSW 1.	22.00	8	38	110	20.0 x 16.0		210

14068 - 14069 Hand taps

G | DIN 5157 | ≤ 3xD | HSS | ≤ 800 N/mm²

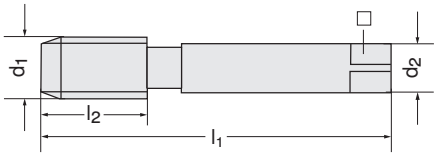
14068
Two pieces in set:
taper and third tap.

14069 101-109
Taper tap

14069 201-209
Third tap

Note:
Cost-effective design.

14068



d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	Set 14068	...	No 1 14069	...	F 14069	...
G 1/8	8.80	28	20	63	7 x 5.5		101		101		201
G 1/4	11.80	19	22	70	11 x 9.0		102		102		202
G 3/8	15.25	19	22	70	12 x 9.0		103		103		203
G 1/2	19.00	14	22	80	16 x 12.0		104		104		204
G 5/8	21.00	14	22	80	18 x 15.5				105		205
G 3/4	24.50	14	22	90	20 x 16.0		106		106		206
G 7/8	28.25	14	22	90	22 x 18.0				107		207
Thread 1.	30.75	11	25	100	25 x 20.0		108		108		208
G 1.1/4	39.50	11	40	125	32 x 24.0				109		209

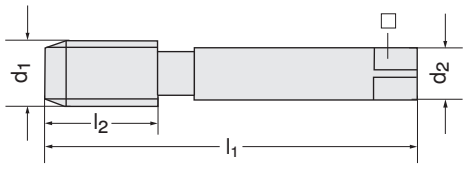
14070 Hand tap set

UNC | DIN 2184-2 | ≤2,5xD | HSS | ≤ 800 N/mm²

HW

Design
Three pieces in set:
taper, second and third tap.

14070



HSS

d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	14070	...
No. 5	2.65	40	11	40	3.5 x 2.7		105
No. 6	2.85	32	12	45	4.0 x 3.0		106
No. 8	3.50	32	13	45	4.5 x 3.4		107
No. 10	3.90	24	16	50	6.0 x 4.9		108
No. 12	4.50	24	17	56	6.0 x 4.9		109
1/4	5.10	20	19	56	6.0 x 4.9		110
5/16	6.60	18	22	63	6.0 x 4.9		111
3/8	8.00	16	24	70	7.0 x 5.5		112

HSS

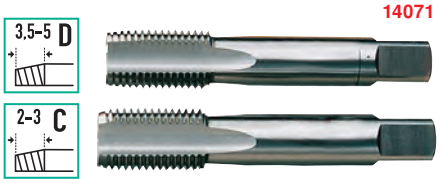
d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	14070	...
7/16	9.40	14	24	70	8.0 x 6.2		113
1/2	10.80	13	28	75	9.0 x 7.0		114
9/16	12.20	12	30	80	11.0 x 9.0		115
5/8	13.50	11	32	80	12.0 x 9.0		116
3/4	16.50	10	34	95	14.0 x 11.0		117
7/8	19.50	9	34	100	18.0 x 14.5		118
1.	22.25	8	38	110	20.0 x 16.0		119

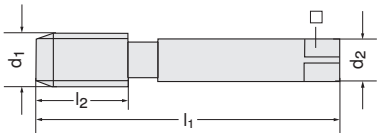
14071 Hand tap set

UNF | DIN 2181 | ≤2,5xD | HSS | ≤ 800 N/mm²

Design
Two pieces in set:
taper and third tap.

14071





d_1 Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	HSS 14071	...
No. 5	2.70	44	8	40	3.5 x 2.7	306
No. 6	3.00	40	9	45	4.0 x 3.0	307
No. 8	3.50	36	10	45	4.5 x 3.4	308
No. 10	4.10	32	12	50	6.0 x 4.9	309
No. 12	4.65	28	12	56	6.0 x 4.9	310
1/4	5.50	28	19	56	6.0 x 4.9	311
5/16	6.90	24	22	63	6.0 x 4.9	312
3/8	8.50	24	20	63	7.0 x 5.5	313

d_1 Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	HSS 14071	...
7/16	9.90	20	20	70	8.0 x 6.2	314
1/2	11.50	20	22	70	9.0 x 7.0	315
9/16	12.90	18	22	70	11.0 x 9.0	316
5/8	14.50	18	22	70	12.0 x 9.0	317
3/4	17.50	16	22	80	14.0 x 11.0	318
7/8	20.50	14	22	80	18.0 x 14.5	319
1.	23.25	12	22	80	20.0 x 16.0	320

14110 - 14112 Short machine taps

M | 6H | DIN 352 | HSS-E | ≤ 800 N/mm²

14110
Design
- With spiral point
- Notch shape B

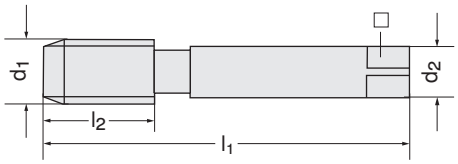
Applications
For through-hole thread.

14110

14112
Design
- With 15° spiral
- Notch shape C

Applications
For blind-hole thread.

14112



Straight-grooved

d_1 Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14110	...
M 2	1.60	0.40	8	36	2.8 x 2.1	201
M 2.5	2.05	0.45	9	40	2.8 x 2.1	203
M 3	2.50	0.50	11	40	3.5 x 2.7	204
M 4	3.30	0.70	13	45	4.5 x 3.4	206
M 5	4.20	0.80	16	50	6.0 x 4.9	208
M 6	5.00	1.00	19	56	6.0 x 4.9	209
M 8	6.80	1.25	22	63	6.0 x 4.9	210
M 10	8.50	1.50	24	70	7.0 x 5.5	211
M 12	10.20	1.75	28	75	9.0 x 7.0	212

Spiral-fluted

d_1 Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14112	...
M 4	3.30	0.70	7	45	4.5 x 3.4	206
M 5	4.20	0.80	8	50	6.0 x 4.9	208
M 6	5.00	1.00	10	56	6.0 x 4.9	209
M 8	6.80	1.25	13	63	6.0 x 4.9	210
M 10	8.50	1.50	15	70	7.0 x 5.5	211
M 12	10.20	1.75	18	75	9.0 x 7.0	212

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14110																	
15–22	15–18	12–18	8–12	8–12	-	-	-	-	-	-	-	-	-	-	-	-	25–30
14112																	
12–18	12–15	10–15	8–10	8–10	-	-	-	-	-	-	-	-	-	-	-	-	20–25

Machine taps | Through-hole screw taps

14114 - 14115 Short machine taps

M | 6H | DIN 352 | HSS-E

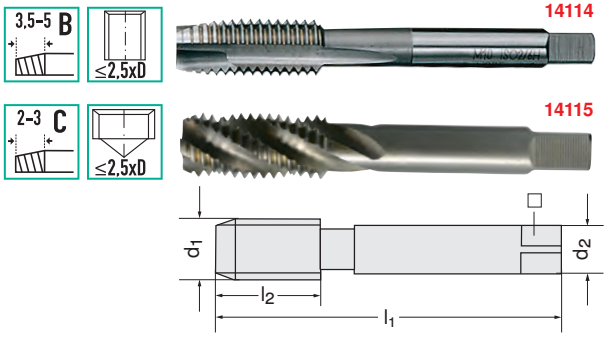
≤ 800 N/mm²

14114
Design
- With spiral point
- Notch shape B

Applications
For through-hole thread.

14115
Design
- With 35° spiral
- Notch shape C

Applications
For blind-hole thread.



Straight-grooved

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14114	...
M 3	2.50	0.50	11	40	3.5 x 2.7		104
M 4	3.30	0.70	13	45	4.5 x 3.4		106
M 5	4.20	0.80	16	48	6.0 x 4.9		108
M 6	5.00	1.00	19	50	6.0 x 4.9		109
M 8	6.80	1.25	22	56	6.0 x 4.9		110
M 10	8.50	1.50	24	70	7.0 x 5.5		111
M 12	10.20	1.75	29	75	9.0 x 7.0		112

Spiral-fluted

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14115	...
M 3	2.50	0.50	11	40	3.5 x 2.7		104
M 4	3.30	0.70	13	45	4.5 x 3.4		106
M 5	4.20	0.80	16	48	6.0 x 4.9		108
M 6	5.00	1.00	19	50	6.0 x 4.9		109
M 8	6.80	1.25	22	56	6.0 x 4.9		110
M 10	8.50	1.50	24	70	7.0 x 5.5		111
M 12	10.20	1.75	29	75	9.0 x 7.0		112

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14114	15–22	15–18	12–18	8–12	8–12	-	-	-	-	-	-	-	-	-	-	-	-	25–30
14115	12–18	12–15	10–15	8–10	8–10	-	-	-	-	-	-	-	-	-	-	-	-	20–25

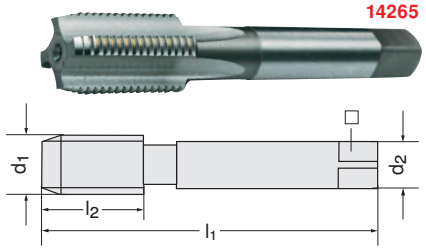
14265 Short machine taps

PG | DIN 40432 | 2-3 C | ≤ 2xD | ≤ 2xD | HSS-E

≤ 800 N/mm²

HW

Applications
For through-hole and blind-hole threads.



d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x □ mm	HSS-E 14265	...
PG 7	11.40	20	22	70	9 x 7.0		101
PG 9	14.00	18	22	70	12 x 9.0		102
PG 11	17.25	18	22	80	14 x 11.0		103
PG 13.5	19.00	18	22	80	16 x 12.0		104
PG 16	21.25	18	22	80	18 x 14.5		105
PG 21	27.00	16	22	90	22 x 18.0		106
PG 29	35.50	16	25	100	28 x 22.0		107

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
	10–15	12–15	5–12	8–12	8–12	-	-	-	-	-	-	-	-	-	-	-	-	20–25

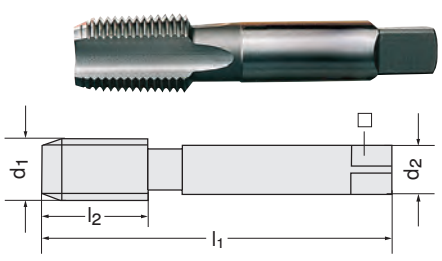
14270 Short machine taps

NPT | DIN 2181 | 2-3 C | ≤ 2xD | ≤ 2xD | HSS-E

≤ 800 N/mm²

HW

Applications
For through-hole and blind-hole threads.



d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x □ mm	HSS-E 14270	...
NPT 1/16	6.40	27	14	56	6 x 4.9		101
NPT 1/8	8.70	27	15	63	7 x 5.5		102
NPT 1/4	11.40	18	21	63	11 x 9.0		103
NPT 3/8	14.70	18	21	70	12 x 9.0		104
NPT 1/2	18.30	14	27	80	16 x 12.0		105
NPT 3/4	23.70	14	27	100	20 x 16.0		106
NPT 1.	29.70	11.1/2	32	110	25 x 20.0		107

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
	10–15	12–15	5–12	8–12	8–12	-	-	-	-	-	-	-	-	-	-	-	-	20–25

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14291 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 2-3 C | ≤2,5xD | HSS-E | ≤ 800 N/mm²

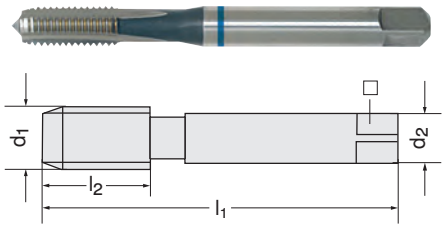
ATORN®

Design
- Without spiral point

14291 101-110
M 2–M 10, DIN 371.

14291 204-220
M 4–M 20, DIN 376.

14291



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	DIN 371 d_2 x 中 mm	DIN 376 d_2 x 中 mm	DIN 371 14291 ...	DIN 376 14291 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	-	101	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	-	102	
M 3	2.50	0.50	10	56	3.5 x 2.7	-	103	
M 4	3.30	0.70	12	63	4.5 x 3.4	2.8 x 2.1	104	204
M 5	4.20	0.80	14	70	6.0 x 4.9	3.5 x 2.7	105	205
M 6	5.00	1.00	16	80	6.0 x 4.9	4.5 x 3.4	106	206
M 7	6.00	1.00	16	80	7.0 x 5.5	-	107	
M 8	6.80	1.25	18	90	8.0 x 6.2	6.0 x 4.9	108	208
M 10	8.50	1.50	20	100	10.0 x 8.0	7.0 x 5.5	110	210
M 12	10.20	1.75	22	110	-	9.0 x 7.0		212
M 14	12.00	2.00	25	110	-	11.0 x 9.0		214
M 16	14.00	2.00	28	110	-	12.0 x 9.0		216
M 20	17.50	2.50	32	140	-	16.0 x 12.0		220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-	-

Through-hole screw tap

14292 - 14295 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤ 3xD

ATORN®

Design
Strong spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

HSS-E | ≤ 800 N/mm²

14292 300

14292
Applications
For steels **up to 800 N/mm².**

14293
Applications
Low build-up of material deposits thanks to TiN coating.
For steels **up to 850 N/mm².**

14294
Applications
Excellent emergency running properties and performs well for the most demanding applications thanks to special TiCN coating.
For steels **up to 1000 N/mm².**

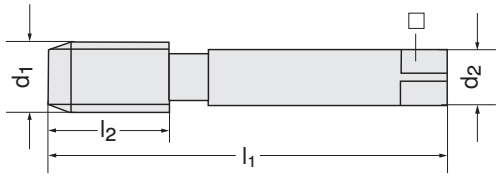
14295
Applications
For steels **up to 1000 N/mm².**
Also suitable for synchro chucks.

HSS-E | ≤ 800 N/mm² — 14292

HSS-E TiN | ≤ 850 N/mm² — 14293

HSS-E TiCN | ≤ 1000 N/mm² — 14294

HSS-E-PM TiN | ≤ 1000 N/mm² — 14295



Set contents		HSS-E 14292	...
7 pieces	M 3–M 12		300

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN	HSS-E 14292	...	HSS-E/TiN 14293	...	HSS-E/TiCN 14294	...	HSS-E-PM/TiN 14295	...
M 2	1.60	0.40	8	45	2.8 x 2.1	371		100						102
M 2.5	2.05	0.45	9	50	2.8 x 2.1	371		101						
M 3	2.50	0.50	10	56	3.5 x 2.7	371		102		102		102		103
M 3.5	2.90	0.60	11	56	4.0 x 3.0	371		103		103		103		
M 4	3.30	0.70	12	63	4.5 x 3.4	371		104		104		104		104
M 5	4.20	0.80	14	70	6.0 x 4.9	371		105		105		105		105
M 6	5.00	1.00	16	80	6.0 x 4.9	371		106		106		106		106
M 7	6.00	1.00	16	80	7.0 x 5.5	371		107						
M 8	6.80	1.25	18	90	8.0 x 6.2	371		108		108		108		108
M 10	8.50	1.50	20	100	10.0 x 8.0	371		110		110		110		110
M 12	10.20	1.75	22	110	9.0 x 7.0	376		112		112		112		112
M 14	12.00	2.00	25	110	11.0 x 9.0	376		114		114		114		114
M 16	14.00	2.00	28	110	12.0 x 9.0	376		116		116		116		116
M 18	15.50	2.50	32	125	14.0 x 11.0	376		118		118		118		118
M 20	17.50	2.50	32	140	16.0 x 12.0	376		120		120		120		120
M 22	19.50	2.50	32	140	18.0 x 14.5	376		122						
M 24	21.00	3.00	36	160	18.0 x 14.5	376		124		124		124		
M 27	24.00	3.00	36	160	20.0 x 16.0	376		127		127				
M 30	26.50	3.50	40	180	22.0 x 18.0	376		130						

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14292+14293																	
-	-	-	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-
14294																	
-	-	-	5–40	5–30	5–24	5-18	-	-	-	-	-	-	-	-	-	-	-
14295																	
-	-	-	5–40	5–30	5–24	2–12	-	-	-	-	-		5–20	5–20		8–30	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14343 Through-hole screw tap Hyper Z Series

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | HSS-E

≤ 2xD | ≤ 1200 N/mm² | GGG | ALU | CU

NACHI

Design
- Metric thread
- Through-hole thread
- Right cutting with spiral point
- Up to M 10 DIN 371
- From M 12 DIN 376

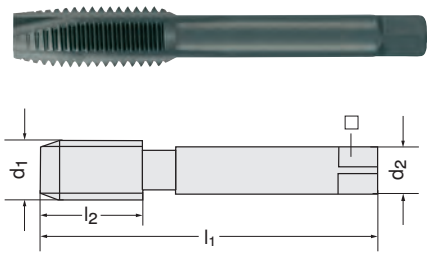
Applications
For steels up to 1200N/mm²

Quality
HSS-E.

Note:
UNI High Performance screw taps with optimum cutting geometry, long service life and process reliability!

NEW

14343



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Z	DIN	14343	...
M 3	2.50	0.50	10	56	3.5 x 2.7	3	371		005
M 4	3.30	0.70	12.5	63	4.5 x 3.4	3	371		006
M 5	4.20	0.80	14.5	70	6.0 x 4.9	3	371		007
M 6	5.00	1.00	17	80	6.0 x 4.9	3	371		008
M 8	6.80	1.25	22	90	8.0 x 6.2	3	371		009
M 10	8.50	1.50	27	100	10.0 x 8.0	3	371		010
M 12	10.20	1.75	32	110	9.0 x 7.0	3	376		011
M 14	12.00	2.00	32	110	11.0 x 9.0	3	376		012
M 16	14.00	2.00	32	110	12.0 x 9.0	3	376		013
M 18	15.50	2.50	37.5	125	14.0 x 11.0	3	376		014
M 20	17.50	2.50	37.5	140	16.0 x 12.0	3	376		015
M 22	19.50	2.50	37.5	140	18.0 x 14.5	3	376		016
M 24	21.00	3.00	45	160	18.0 x 14.5	3	376		017

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–25	10–25	-	5–20	5–20	5–20	5–20	5–20	5–10	-	-	-	-	-	-	-	5–20	10–20

14302 - 14303 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤1,5xD | HSS-E | ≤ 800 N/mm²

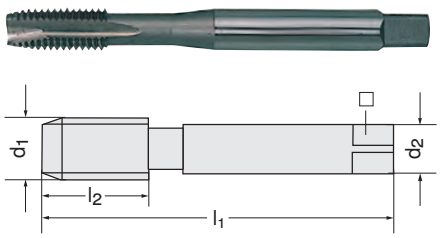
HHW

Design
With spiral point.
M 1.4 tolerance field ISO 1 (4H).

14302
M 1.4–M 10, DIN 371.

14303
M 4–M 42, DIN 376.

14302



DIN 371

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14302	...
M 1.4	1.10	0.30	7	40	2.5 x 2.1		102
M 1.6	1.25	0.35	8	40	2.5 x 2.1		103
M 1.8	1.45	0.35	8	40	2.5 x 2.1		104
M 2	1.60	0.40	8	45	2.8 x 2.1		105
M 2.5	2.05	0.45	9	50	2.8 x 2.1		107
M 3	2.50	0.50	11	56	3.5 x 2.7		108
M 4	3.30	0.70	13	63	4.5 x 3.4		110
M 5	4.20	0.80	16	70	6.0 x 4.9		112
M 6	5.00	1.00	19	80	6.0 x 4.9		113
M 8	6.80	1.25	22	90	8.0 x 6.2		114
M 10	8.50	1.50	24	100	10.0 x 8.0		115

DIN 376

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14303	...
M 4	3.30	0.70	13	63	2.8 x 2.1		110
M 5	4.20	0.80	16	70	3.5 x 2.7		112
M 6	5.00	1.00	19	80	4.5 x 3.4		113
M 8	6.80	1.25	22	90	6.0 x 4.9		114
M 10	8.50	1.50	24	100	7.0 x 5.5		115
M 12	10.20	1.75	28	110	9.0 x 7.0		116
M 14	12.00	2.00	30	110	11.0 x 9.0		117
M 16	14.00	2.00	32	110	12.0 x 9.0		118
M 18	15.50	2.50	34	125	14.0 x 11.0		119
M 20	17.50	2.50	34	140	16.0 x 12.0		120
M 22	19.50	2.50	34	140	18.0 x 14.5		121
M 24	21.00	3.00	38	160	18.0 x 14.5		122
M 27	24.00	3.00	38	160	20.0 x 16.0		123
M 30	26.50	3.50	45	180	22.0 x 18.0		125
M 33	29.50	3.50	50	180	25.0 x 20.0		126
M 36	32.00	4.00	56	200	28.0 x 22.0		127
M 42	37.50	4.50	60	200	32.0 x 24.0		129

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
18–25	10–25	10–15	5–25	5–20	-	-	-	-	-	-	-	-	-	-	-	-	-

Through-hole screw tap

14304 - 14305 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤1,5xD | HSS-E | ≤ 800 N/mm²

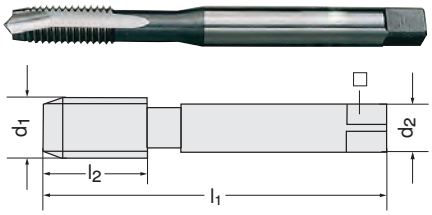
Design
With spiral point.

Note:
Cost-effective design.

14304
M 2–M 10, DIN 371.

14305
M 3–M 24, DIN 376.

14304



DIN 371

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14304	...
M 2	1.60	0.40	9	45	2.8 x 2.1		105
M 2.5	2.05	0.45	9	50	2.8 x 2.1		107
M 3	2.50	0.50	10	56	3.5 x 2.7		108
M 4	3.30	0.70	12	63	4.5 x 3.4		110
M 5	4.20	0.80	14	70	6.0 x 4.9		112
M 6	5.00	1.00	16	80	6.0 x 4.9		113
M 8	6.80	1.25	18	90	8.0 x 6.2		114
M 10	8.50	1.50	20	100	10.0 x 8.0		115

DIN 376

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14305	...
M 3	2.50	0.50	10	56	2.2 x –		108
M 4	3.30	0.70	12	63	2.8 x 2.1		110
M 5	4.20	0.80	14	70	3.5 x 2.7		112
M 6	5.00	1.00	16	80	4.5 x 3.4		113
M 8	6.80	1.25	18	90	6.0 x 4.9		114
M 10	8.50	1.50	20	100	7.0 x 5.5		115
M 12	10.20	1.75	28	110	9.0 x 7.0		116
M 14	12.00	2.00	26	110	11.0 x 9.0		117
M 16	14.00	2.00	28	110	12.0 x 9.0		118
M 20	17.50	2.50	32	140	16.0 x 12.0		120
M 24	21.00	3.00	34	160	18.0 x 14.5		122

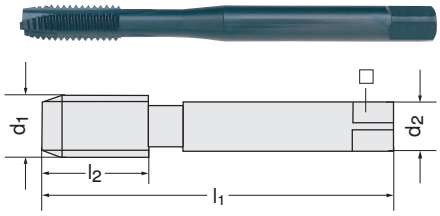
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
18–25	10–25	10–15	5–25	5–20	-	-	-	-	-	-	-	-	-	-	-	-	20–30

14306 - 14307 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤1,5xD | HSS-E OX | ≤ 800 N/mm²

Design
With spiral point.
Special OX coating for soft and lubricated steels (St 33/St 37).
Up to M 10 DIN 371.
From M 12 DIN 376.

14306



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14306	DIN 371 ...	DIN 376 14307	DIN 376 ...
M 3	2.50	0.50	11	56	3.5 x 2.7		201		
M 4	3.30	0.70	13	63	4.5 x 3.4		202		
M 5	4.20	0.80	16	70	6.0 x 4.9		203		
M 6	5.00	1.00	19	80	6.0 x 4.9		204		
M 8	6.80	1.25	22	90	8.0 x 6.2		205		
M 10	8.50	1.50	24	100	10.0 x 8.0		206		
M 12	10.20	1.75	28	110	9.0 x 7.0				201
M 14	12.00	2.00	30	110	11.0 x 9.0				202
M 16	14.00	2.00	32	110	12.0 x 9.0				203
M 18	15.50	2.50	34	125	14.0 x 11.0				204
M 20	17.50	2.50	34	140	16.0 x 12.0				205

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	15–20	15–20	-	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14308 - 14310 Through-hole screw tap

M | 3,5–5 B | ≤1,5xD | HSS-E | ≤ 800 N/mm²

HW

Design
With spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
For workpieces that are retrofitted with a galvanic coating.

14308
6G tolerance class.

14309
7G tolerance class.

14310
7G tolerance class.

6G DIN 371

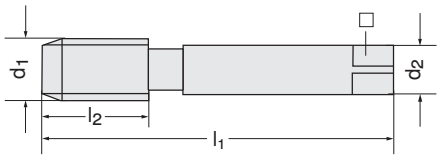
14308

7G DIN 371

14309

7G DIN 376

14310



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⫫ mm	DIN 371/6G 14308	...	DIN 371/7G 14309	...	DIN 376/7G 14310	...
M 2	1.60	0.40	8	45	2.8 x 2.1		105				
M 2.5	2.05	0.45	9	50	2.8 x 2.1		107				
M 3	2.50	0.50	11	56	3.5 x 2.7		108		108		
M 4	3.30	0.70	13	63	4.5 x 3.4		110		110		
M 5	4.20	0.80	16	70	6.0 x 4.9		112		112		
M 6	5.00	1.00	19	80	6.0 x 4.9		113		113		
M 8	6.80	1.25	22	90	8.0 x 6.2		114		114		
M 10	8.50	1.50	24	100	10.0 x 8.0		115		115		
M 12	10.20	1.75	28	110	9.0 x 7.0						116
M 16	14.00	2.00	32	110	12.0 x 9.0						118
M 20	17.50	2.50	34	140	16.0 x 12.0						120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
18–25	10–25	10–15	5–25	5–20	-	-	-	-	-	-	-	-	-	-	-	-	20–30

14315 - 14316 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤ 3xD | HSS-E | ≤ 900 N/mm²

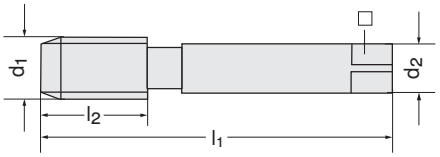
EMUGE

Design
With spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

14315
Record-1 B.

14316
Record-2 B.

14315



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⫫ mm	DIN 371 14315	...	DIN 376 14316	...
M 3	2.50	0.50	11	56	3.5 x 2.7		107		
M 4	3.30	0.70	13	63	4.5 x 3.4		109		
M 5	4.20	0.80	15	70	6.0 x 4.9		111		
M 6	5.00	1.00	17	80	6.0 x 4.9		112		
M 8	6.80	1.25	20	90	8.0 x 6.2		113		
M 10	8.50	1.50	22	100	10.0 x 8.0		114		
M 12	10.20	1.75	24	110	9.0 x 7.0				115
M 14	12.00	2.00	26	110	11.0 x 9.0				116
M 16	14.00	2.00	27	110	12.0 x 9.0				117
M 20	17.50	2.50	32	140	16.0 x 12.0				119

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	10–40	5–25	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-

Through-hole screw tap

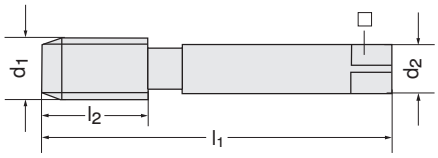
14317 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤ 3xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
With strong spiral point and extra-long shank.
Up to M 10 DIN 371.
From M 12 DIN 376.

14317



d1	Core hole Ø mm	Pitch mm	l2 mm	l1 mm	d2 x ⊡ mm	DIN 371 14317 ...	DIN 376 14317 ...
M 3	2.50	0.50	10	112	3.5 x 2.7	103	
M 4	3.30	0.70	12	126	4.5 x 3.4	104	
M 5	4.20	0.80	14	140	6.0 x 4.9	105	
M 6	5.00	1.00	16	160	6.0 x 4.9	106	
M 8	6.80	1.25	18	180	8.0 x 6.2	108	
M 10	8.50	1.50	20	200	10.0 x 8.0	110	
M 12	10.20	1.75	22	220	9.0 x 7.0		112
M 14	12.00	2.00	25	220	11.0 x 9.0		114
M 16	14.00	2.00	28	220	12.0 x 9.0		116
M 20	17.50	2.50	32	280	16.0 x 12.0		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

14330 - 14331 Through-hole screw tap

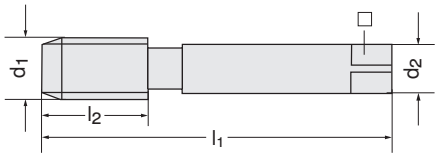
M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤1,5xD | HSS-E | ≤ 800 N/mm²

HW

Design
With spiral point and **lubrication grooves.**
Reduced build-up of material deposits thanks to nitriding and steam treatment.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Ideal for creating eyelets in sheet metal.

14330



d1	Core hole Ø mm	Pitch mm	l2 mm	l1 mm	d2 x ⊡ mm	DIN 371 14330 ...	DIN 376 14331 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	101	
M 3	2.50	0.50	11	56	3.5 x 2.7	104	
M 4	3.30	0.70	13	63	4.5 x 3.4	106	
M 5	4.20	0.80	16	70	6.0 x 4.9	107	
M 6	5.00	1.00	19	80	6.0 x 4.9	108	
M 8	6.80	1.25	22	90	8.0 x 6.2	109	
M 10	8.50	1.50	24	100	10.0 x 8.0	110	
M 12	10.20	1.75	28	110	9.0 x 7.0		112
M 16	14.00	2.00	32	110	12.0 x 9.0		114
M 20	17.50	2.50	34	140	16.0 x 12.0		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	15–20	15–20	15–20	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14318 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤ 3xD | ≤ 1200 N/mm²

ATORN®

Design
With spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Very well suited for machining VA.

14318 101-120+300
Design
Reduced build-up of material deposits due to vaporisation.
Quality
HSS-E, vaporised.

14318 203-210
Design
TiN-coated for an even longer service life.
Quality
HSS-E/TiN-coated.

14318 300

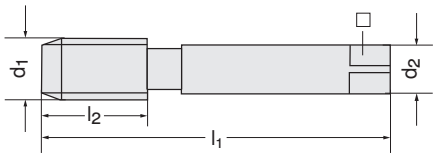
HSS-E

HSS-E

14318 101-120

HSS-E TiN

14318 203-210



Set contents		Vaporised 14318 ...
7 pieces	M 3–M 12	300

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN	Vaporised 14318 ...	TiN-coated 14318 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	371	101	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	371	102	
M 3	2.50	0.50	10	56	3.5 x 2.7	371	103	203
M 4	3.30	0.70	12	63	4.5 x 3.4	371	104	204
M 5	4.20	0.80	14	70	6.0 x 4.9	371	105	205
M 6	5.00	1.00	16	80	6.0 x 4.9	371	106	206
M 8	6.80	1.25	18	90	8.0 x 6.2	371	108	207
M 10	8.50	1.50	20	100	10.0 x 8.0	371	110	208
M 12	10.20	1.75	22	110	9.0 x 7.0	376	112	209
M 16	14.00	2.00	28	110	12.0 x 9.0	376	116	210
M 20	17.50	2.50	32	140	16.0 x 12.0	376	120	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14318 101-120 + 300																	
-	-	-	50–20	5–15	5–12	-	-	-	-	-	-	-	5–12	5–12	2–6	-	-
14318 203-210																	
-	-	-	5–40	5–30	5–24	-	-	-	-	-	-	-	5–20	5–20	2–6	-	-

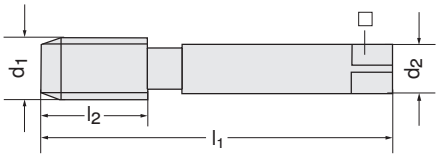
14319 - 14320 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤1,5xD | HSS-E TiN | ≤ 1200 N/mm²

HHW

Design
With spiral point.
Improved wear characteristics thanks to the TiN coating.
Up to M 10 DIN 371.
From M 12 DIN 376.

14319



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN 371 14319 ...	DIN 376 14320 ...
M 3	2.50	0.50	11	56	3.5 x 2.7	101	
M 4	3.30	0.70	13	63	4.5 x 3.4	102	
M 5	4.20	0.80	16	70	6.0 x 4.9	103	
M 6	5.00	1.00	19	80	6.0 x 4.9	104	
M 8	6.80	1.25	22	90	8.0 x 6.2	105	
M 10	8.50	1.50	24	100	10.0 x 8.0	106	
M 12	10.20	1.75	28	110	9.0 x 7.0		107
M 14	12.00	2.00	30	110	11.0 x 9.0		108
M 16	14.00	2.00	32	110	12.0 x 9.0		109
M 20	17.50	2.50	34	140	16.0 x 12.0		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	10–40	10–35	10–30	8–20	8–20	-	-	-	-	-	8–20	5–15	-	-	25–30

( ) = Items with prices in brackets partly available from stock.

Through-hole screw tap

14333 - 14334 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | HSS-E TiCN | ≤ 1000 N/mm²

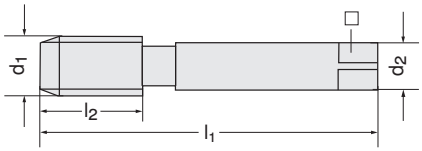
Design
With spiral point.
Long service life thanks to TiCN coating.

Note:
Cost-effective design.

14333
M 2–M 10, DIN 371.

14334
M 3–M 24, DIN 376.

14333



						DIN 371	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	14333	...
M 2	1.60	0.40	8	45	2.8 x 2.1		201
M 2.5	2.05	0.45	9	50	2.8 x 2.1		202
M 3	2.50	0.50	10	56	3.5 x 2.7		203
M 4	3.30	0.70	12	63	4.5 x 3.4		204
M 5	4.20	0.80	14	70	6.0 x 4.9		205
M 6	5.00	1.00	16	80	6.0 x 4.9		206
M 8	6.80	1.25	18	90	8.0 x 6.2		207
M 10	8.50	1.50	20	100	10.0 x 8.0		208

						DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	14334	...
M 3	2.50	0.50	10	56	2.2 x –		203
M 4	3.30	0.70	12	63	2.8 x 2.1		204
M 5	4.20	0.80	14	70	3.5 x 2.7		205
M 6	5.00	1.00	16	80	4.5 x 3.4		206
M 8	6.80	1.25	18	90	6.0 x 4.9		207
M 10	8.50	1.50	20	100	7.0 x 5.5		208
M 12	10.20	1.75	28	110	9.0 x 7.0		209
M 14	12.00	2.00	26	110	11.0 x 9.0		210
M 16	14.00	2.00	28	110	12.0 x 9.0		211
M 20	17.50	2.50	32	140	16.0 x 12.0		212
M 24	21.00	3.00	34	160	18.0 x 14.5		213

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	10–40	10–35	10–30	10–30	-	-	-	-	-	-	8–20	5–15	-	-	-

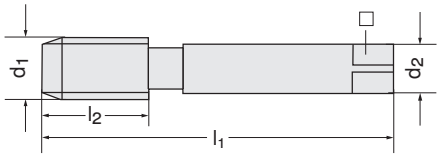
14338 - 14339 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | HSS-E | VA-OX | ≤ 1200 N/mm² | Uni

Design
With spiral point.
Increased wear resistance thanks to the OX coating.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Very well suited for machining VA.

14338



						DIN 371		DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	14338	...	14339	...
M 2	1.60	0.40	8	45	2.8 x 2.1		101		
M 2.5	2.05	0.45	9	50	2.8 x 2.1		103		
M 3	2.50	0.50	11	56	3.5 x 2.7		104		
M 3.5	2.90	0.60	12	56	4.0 x 3.0		105		
M 4	3.30	0.70	13	63	4.5 x 3.4		106		
M 5	4.20	0.80	16	70	6.0 x 4.9		107		
M 6	5.00	1.00	19	80	6.0 x 4.9		108		
M 8	6.80	1.25	22	90	8.0 x 6.2		109		
M 10	8.50	1.50	24	100	10.0 x 8.0		110		
M 12	10.20	1.75	28	110	9.0 x 7.0				111
M 14	12.00	2.00	30	110	11.0 x 9.0				112
M 16	14.00	2.00	32	110	12.0 x 9.0				113
M 18	15.50	2.50	34	125	14.0 x 11.0				114
M 20	17.50	2.50	34	140	16.0 x 12.0				115
M 22	19.50	2.50	34	140	18.0 x 14.5				116
M 24	21.00	3.00	38	160	18.0 x 14.5				117
M 30	26.50	3.50	45	180	22.0 x 18.0				118

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
18–25	10–25	10–15	5–25	5–20	5–15	5–15	5–10	-	-	-	-	-	5–15	5–12	-	-	-

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

14340 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 3xD | HSS-E | ≤ 1100 N/mm²

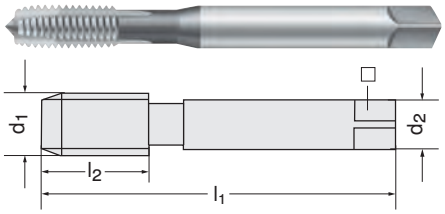
EMUGE

Design
With spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

14340 104-110
Record 1B-VA.

14340 111-117
Record 2B-VA.

14340



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN 371 14340 ...	DIN 376 14340 ...
M 3	2.50	0.50	11	56	3.5 x 2.7	104	
M 4	3.30	0.70	13	63	4.5 x 3.4	106	
M 5	4.20	0.80	15	70	6.0 x 4.9	107	
M 6	5.00	1.00	17	80	6.0 x 4.9	108	
M 8	6.80	1.25	20	90	8.0 x 6.2	109	
M 10	8.50	1.50	22	100	10.0 x 8.0	110	
M 12	10.20	1.75	24	110	9.0 x 7.0		111
M 14	12.00	2.00	26	110	11.0 x 9.0		112
M 16	14.00	2.00	27	110	12.0 x 9.0		113
M 20	17.50	2.50	32	140	16.0 x 12.0		115
M 24	21.00	3.00	34	160	18.0 x 14.5		117

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–25	5–20	5–15	5–12	5–10	-	-	-	-	-	5–15	2–10	-	5–20	-

14344 Through-hole screw tap

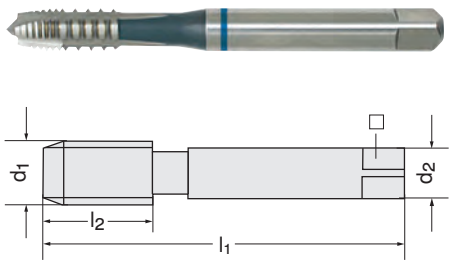
M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 3xD | HSS-E | ≤ 1200 N/mm²

ATORN®

Design
With spiral point.
With offset teeth to reduce the torque and for better distribution of the lubricant.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
Particularly suitable for materials that tend to jam and thin-walled parts, since there is no material deformation thanks to the reduced frictional resistance.

14344



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN 371 14344 ...	DIN 376 14344 ...
M 3	2.50	0.50	10	56	3.5 x 2.7	103	
M 4	3.30	0.70	12	63	4.5 x 3.4	104	
M 5	4.20	0.80	14	70	6.0 x 4.9	105	
M 6	5.00	1.00	16	80	6.0 x 4.9	106	
M 8	6.80	1.25	18	90	8.0 x 6.2	108	
M 10	8.50	1.50	20	100	10.0 x 8.0	110	
M 12	10.20	1.75	22	110	9.0 x 7.0		112
M 16	14.00	2.00	25	110	12.0 x 9.0		116
M 20	17.50	2.50	32	140	16.0 x 12.0		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	-	5–20	5–15	5–12	4–10	2–8	-	-	-	-	-	5–12	5–12	-	-	-

Through-hole screw tap

14341 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | ≤ 3xD | ≤ 1400 N/mm²

ATORN®

Design
With spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
Special grinding for steels **up to 1400 N/mm².**

Note:
The problem solver for high-strength materials.

14341 103-120
Quality
HSS-E.

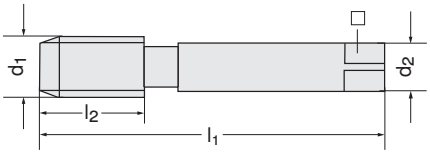
14341 203-220
Quality
HSS-E/TiCN-coated.

HSS-E

14341 103-120

HSS-E TiCN

14341 203-220



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN	HSS-E 14341	...	HSS-E/TiCN 14341	...
M 3	2.50	0.50	10	56	3.5 x 2.7	371		103		203
M 4	3.30	0.70	12	63	4.5 x 3.4	371		104		204
M 5	4.20	0.80	14	70	6.0 x 4.9	371		105		205
M 6	5.00	1.00	16	80	6.0 x 4.9	371		106		206
M 8	6.80	1.25	18	90	8.0 x 6.2	371		108		208
M 10	8.50	1.50	20	100	10.0 x 8.0	371		110		210
M 12	10.20	1.75	22	110	9.0 x 7.0	376		112		212
M 16	14.00	2.00	28	110	12.0 x 9.0	376		116		216
M 20	17.50	2.50	32	140	16.0 x 12.0	376		120		220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	5–12	4–10	2–8	2–8	-	-	-	-	-	-	-	-	-

14353 - 14356 Through-hole screw tap

M | DIN 371 | DIN 376 | 3,5–5 B | Ti/Ni

ATORN®

Design
With strong spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
For titanium, titanium alloys and super alloys.

Note:
For difficult-to-machine materials.

14353
Applications
For an especially long service life.
Quality
HSS-E-PM.

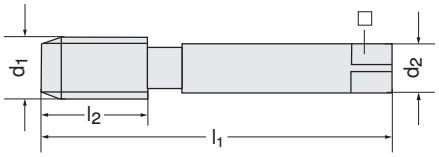
14356
Applications
For an even longer service life.
Quality
HSS-E-PM/TiCN coated.

6H | ≤ 3xD | HSS-E PM

14353

6H | ≤ 3xD | HSS-E-PM TiCN

14356



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN	HSS-E/PM 14353	...	HSS-E/PM-TiCN 14356	...
M 2	1.60	0.40	8	45	2.8 x 2.1	371				202
M 3	2.50	0.50	10	56	3.5 x 2.7	371		203		203
M 4	3.30	0.70	12	63	4.5 x 3.4	371		204		204
M 5	4.20	0.80	14	70	6.0 x 4.9	371		205		205
M 6	5.00	1.00	16	80	6.0 x 4.9	371		206		206
M 8	6.80	1.25	18	90	8.0 x 6.2	371		208		208
M 10	8.50	1.50	20	100	10.0 x 8.0	371		210		210
M 12	10.20	1.75	22	110	9.0 x 7.0	376		212		212
M 16	14.00	2.00	28	110	12.0 x 9.0	376		216		216

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	Ni alloy	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2–10	2–10	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14350 - 14352 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | HSS-E OX | VA | Uni

ATORN®

Design
- Strong spiral point
- Vaporised
- For minimal wear
- Improved coolant transport

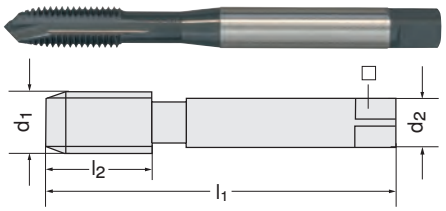
Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

Note:
Outstanding value for money.
High profitability.

14350
M 2–M 10, DIN 371.

14352
M 3–M 36, DIN 376.

14350



d_1 Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14350	...
M 2 1.60	0.40	8	45	2.8 x 2.1		101
M 2.5 2.05	0.45	9	50	2.8 x 2.1		102
M 3 2.50	0.50	11	56	3.5 x 2.7		103
M 3.5 2.90	0.60	12	56	4.0 x 3.0		104
M 4 3.30	0.70	13	63	4.5 x 3.4		105
M 5 4.20	0.80	16	70	6.0 x 4.9		106
M 6 5.00	1.00	19	80	6.0 x 4.9		107
M 8 6.80	1.25	22	90	8.0 x 6.2		108
M 10 8.50	1.50	24	100	10.0 x 8.0		109

d_1 Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 376 14352	...
M 3 2.50	0.50	11	56	2.2 x -		103
M 4 3.30	0.70	13	63	2.8 x 2.1		105
M 5 4.20	0.80	16	70	3.5 x 2.7		106
M 6 5.00	1.00	19	80	4.5 x 3.4		107
M 8 6.80	1.25	22	90	6.0 x 4.9		108
M 10 8.50	1.50	24	100	7.0 x 5.5		109
M 12 10.20	1.75	28	110	9.0 x 7.0		110
M 14 12.00	2.00	30	110	11.0 x 9.0		111
M 16 14.00	2.00	32	110	12.0 x 9.0		112
M 18 15.50	2.50	34	125	14.0 x 11.0		113
M 20 17.50	2.50	34	140	16.0 x 12.0		114
M 22 19.50	2.50	34	140	18.0 x 14.5		115
M 24 21.00	3.00	38	160	18.0 x 14.5		116
M 27 24.00	3.00	38	160	20.0 x 16.0		117
M 30 26.50	3.50	45	180	22.0 x 18.0		118
M 33 29.50	3.50	50	180	25.0 x 20.0		119
M 36 32.00	4.00	56	200	28.0 x 22.0		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
18–25	10–25	10–15	5–25	5–20	5–15	5–15	5–10	-	-	-	-	-	5–12	5–12	-	-	-

14345 Through-hole screw tap Uni

M | 6H | DIN 371 | DIN 376 | 2-3 C | ≤2,5xD | HSS-E-PM TiCN | Uni

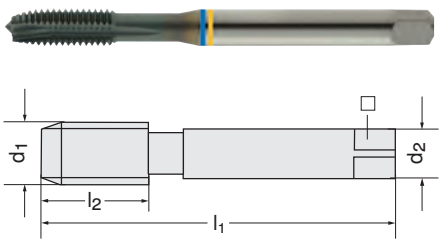
ATORN®

Design
With spiral point.
Extra-robust PM screw taps.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
For **universal use,** for example, in VA, case-hardening, heat-treated and tool steel, aluminium, copper and cast metal.

Note:
Outstanding value for money.
Maximum profitability.

14345



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14345	...	DIN 376 14345	...
M 3	2.50	0.50	10	56	3.5 x 2.7		203		
M 4	3.30	0.70	12	63	4.5 x 3.5		204		
M 5	4.20	0.80	14	70	6.0 x 4.9		205		
M 6	5.00	1.00	16	80	6.0 x 4.9		206		
M 8	6.80	1.25	18	90	8.0 x 6.2		208		
M 10	8.50	1.50	20	100	10.0 x 8.0		210		
M 12	10.20	1.75	22	110	12.0 x 9.0				212
M 16	14.00	2.00	28	110	12.0 x 9.0				216

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–25	5–20	5–12	4–10	2–8	-	-	-	-	-	5–20	5–20	-	-	-

Through-hole screw tap

14346 Through-hole screw tap Uni

M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 3xD | Uni

ATORN®

Design
Straight-grooved with spiral point.
The spiral point causes strong chip transport forwards.
Up to M 10 DIN 371.
From M 12 DIN 376.

14346 092-130+300
Quality
HSS-E, vaporised.

14346 203-220
Quality
HSS-E/TiN-coated.

14346 300

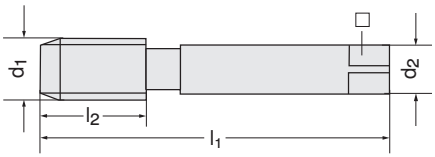
HSS-E

HSS-E

14346 092-130

HSS-E TiN

14346 203-220



Set contents		Vaporised 14346	...
7 pieces	M 3 - M 12		300

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	Vaporised 14346	...	TiN-coated 14346	...
M 1	0.75	0.25	5.5	32	2.5 x 2.1	371		092		
M 1.2	0.85	0.25	5.5	32	2.5 x 2.1	371		093		
M 1.4	1.10	0.30	7	32	2.5 x 2.1	371		094		
M 1.6	1.25	0.35	8	32	2.5 x 2.1	371		095		
M 1.7	1.30	0.35	8	32	2.5 x 2.1	371		096		
M 1.8	1.45	0.35	8	32	2.5 x 2.1	371		097		
M 2	1.60	0.40	8	36	2.5 x 2.1	371		098		
M 2.2	1.75	0.45	8	36	2.8 x 2.1	371		099		
M 2.3	1.90	0.40	8	36	2.8 x 2.1	371		100		
M 2.5	2.05	0.45	9	40	2.8 x 2.1	371		101		
M 2.6	2.10	0.45	9	40	2.8 x 2.1	371		102		
M 3	2.50	0.50	10	56	3.5 x 2.7	371		103		203
M 4	3.30	0.70	12	63	4.5 x 3.4	371		104		204
M 5	4.20	0.80	14	70	6.0 x 4.9	371		105		205
M 6	5.00	1.00	16	80	6.0 x 4.9	371		106		206
M 8	6.80	1.25	18	90	8.0 x 6.2	371		108		208
M 10	8.50	1.50	20	100	10.0 x 8.0	371		110		210
M 12	10.25	1.75	22	110	9.0 x 7.0	376		112		212
M 16	14.00	2.00	28	110	12.0 x 9.0	376		116		216
M 20	17.50	2.50	32	140	16.0 x 12.0	376		120		220
M 24	21.00	3.00	38	110	18.0 x 14.5	376		124		
M 27	24.00	3.00	45	110	20.0 x 16.0	376		127		
M 30	26.50	3.50	45	125	22.0 x 18.0	376		130		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14346 092-130+300																	
10–15	-	10–15	5–15	5–15	5–15	5–15	-	-	-	-	-	-	4–6	4–6	-	5–8	-
14346 203-220																	
10–15	-	10–20	10–20	10–20	5–20	5–20	-	-	-	-	-	-	5–8	5–8	-	8–12	-

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

14342 Through-hole screw tap Unimaxx

M | 6HX | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | HSS-E-PM HARDLUBE | Uni

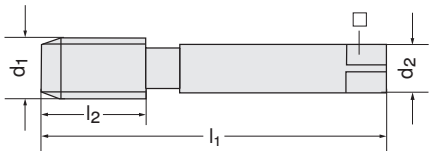
UNIMAX

Design
With spiral point.
HSS-E-PM steel and HARDLUBE coating for particularly high wear resistance and minimised surface friction.

Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
50% higher cutting values and service life possible.
All-rounder suitable for a wide variety of materials.
Excellent value for money, higher profitability.

14342



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14342 ...	DIN 376 14342 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	099	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	100	
M 3	2.50	0.50	11	56	3.5 x 2.7	101	
M 4	3.30	0.70	13	63	4.5 x 3.4	102	
M 5	4.20	0.80	16	70	6.0 x 4.9	103	
M 6	5.00	1.00	19	80	6.0 x 4.9	104	
M 8	6.80	1.25	22	90	8.0 x 6.2	106	
M 10	8.50	1.50	24	100	10.0 x 8.0	108	
M 12	10.20	1.75	28	110	9.0 x 7.0		110
M 16	14.00	2.00	32	110	12.0 x 9.0		112
M 20	17.50	2.50	34	140	16.0 x 12.0		114
M 24	21.00	3.00	38	160	18.0 x 14.5		116
M 27	24.00	3.00	38	160	20.0 x 16.0		117
M 30	26.50	3.50	45	180	22.0 x 18.0		118

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–45	10–45	15–40	15–40	15–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

14347 Through-hole screw tap

M | 6HX | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | PM HARDLUBE | VA | Uni

ATORN®

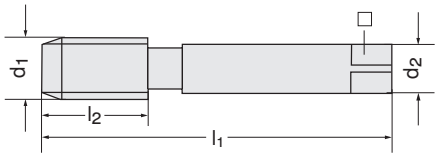
Design
- Powder-metallurgical steel (PM) with **HARDLUBE coating**
- High edge stability for particularly high wear resistance and minimised surface friction
- With spiral point

Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

Note:
Outstanding value for money.
Maximum profitability.

14347



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14347 ...	DIN 376 14347 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	101	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	102	
M 3	2.50	0.50	11	56	3.5 x 2.7	103	
M 4	3.30	0.70	13	63	4.5 x 3.4	104	
M 5	4.20	0.80	16	70	6.0 x 4.9	105	
M 6	5.00	1.00	19	80	6.0 x 4.9	106	
M 8	6.80	1.25	22	90	8.0 x 6.2	107	
M 10	8.50	1.50	24	100	10.0 x 8.0	108	
M 12	10.20	1.75	28	110	9.0 x 7.0		109
M 14	12.00	2.00	30	110	11.0 x 9.0		110
M 16	14.00	2.00	32	110	12.0 x 9.0		111
M 20	17.50	2.50	34	140	16.0 x 12.0		112
M 24	21.00	3.00	38	160	18.0 x 14.5		113
M 27	24.00	3.00	38	160	20.0 x 16.0		114
M 30	26.50	3.50	45	180	22.0 x 18.0		115

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–45	10–45	15–40	15–40	15–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

Through-hole screw tap

14348 - 14349 Through-hole screw tap

M | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | PM HARDLUBE | VA | Uni

ATORN®

Design
- Powder-metallurgical steel (PM) with **HARDLUBE coating**
- High edge stability for particularly high wear resistance and minimised surface friction

Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

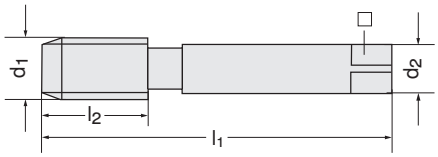
Note:
Excellent value for money. Maximum profitability.

6HX

14348

14349

6GX



							6HX with internal cooling supply		6GX	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN	14348	...	14349	...
M 3	2.50	0.50	11	56	3.5 x 2.7	371				101
M 4	3.30	0.70	13	63	4.5 x 3.4	371				102
M 5	4.20	0.80	16	70	6.0 x 4.9	371				103
M 6	5.00	1.00	19	80	6.0 x 4.9	371		104		104
M 8	6.80	1.25	22	90	8.0 x 6.2	371		105		105
M 10	8.50	1.50	24	100	10.0 x 8.0	371		106		106
M 12	10.20	1.75	28	110	9.0 x 7.0	376		107		107
M 16	14.00	2.00	32	110	12.0 x 9.0	376		108		108
M 20	17.50	2.50	34	140	16.0 x 12.0	376		109		109

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–45	10–45	15–40	15–40	15–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

14362 Through-hole screw tap Uni

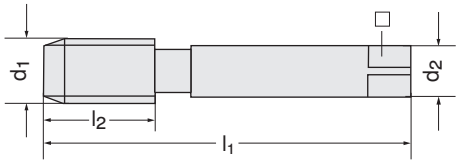
M | 6HX | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | PM TiCN | Uni

ATORN®

Design
Straight-grooved with spiral point.
The spiral point causes strong chip transport forwards. Synchro tool for CNC machines (clamp rigidly or with minimal length compensation).
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Synchro chuck, see art. no. 21453, 21457 and 21837.
Suitable inserts, see art. no. 21465–21466.

14362



						DIN 371		DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14362	...	14362	...
M 3	2.50	0.50	5	56	3.5 x 2.7		103		
M 4	3.30	0.70	6	63	4.5 x 3.4		104		
M 5	4.20	0.80	7	70	6.0 x 4.9		105		
M 6	5.00	1.00	8	80	6.0 x 4.9		106		
M 8	6.80	1.25	10	90	8.0 x 6.2		108		
M 10	8.50	1.50	12	100	10.0 x 8.0		110		
M 12	10.20	1.75	18	110	9.0 x 7.0				112
M 16	14.00	2.00	20	110	12.0 x 9.0				116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–30	-	10–25	15–35	15–30	15–30	10–25	5–15	2–10	-	-	-	-	5–15	5–15	-	10–15	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14366 Through-hole screw tap SGPO (PM)

M | 6H | DIN 371 | DIN 376 | 3,5–5 B | HSS PM-SG | ≤ 3xD | Uni

NACHI

Design
- Metric thread
- Through-hole thread
- Right cutting with spiral point
- Up to M 10 DIN 371
- From M 12 DIN 376

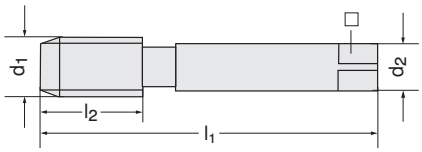
Applications
For universal use.

Quality
High-quality HSS-PM with SG coating.
(TiCN multi-layer coating)

Note:
Screw tap for the most demanding applications.
For a long service life and process reliability!

NEW

14366



HSS-PM-SG

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Z	DIN	14366	...
M 3	2.50	0.50	10.0	56	3.5 x 2.7	3	371		005
M 4	3.30	0.70	12.5	63	4.5 x 3.4	3	371		006
M 5	4.20	0.80	14.5	70	6.0 x 4.9	3	371		007
M 6	5.00	1.00	17.0	80	6.0 x 4.9	3	371		008
M 8	6.80	1.25	22.0	90	8.0 x 6.2	3	371		009
M 10	8.50	1.50	27.0	100	10.0 x 8.0	3	371		010
M 12	10.20	1.75	32.0	110	9.0 x 7.0	3	376		011
M 14	12.00	2.00	32.0	110	11.0 x 9.0	3	376		012
M 16	14.00	2.00	32.0	110	12.0 x 9.0	3	376		013
M 18	15.50	2.50	37.5	125	14.0 x 11.0	3	376		014
M 20	17.50	2.50	37.5	140	16.0 x 12.0	3	376		015
M 22	19.50	2.50	37.5	140	18.0 x 14.5	3	376		016
M 24	21.00	3.00	45.0	160	18.0 x 14.5	3	376		017

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–50	15–50	6–15	15–30	15–30	8–30	8–30	8–30	5–10	-	-	-	-	5–10	5–10	-	10–30	-

14361 Through-hole screw tap Synchro

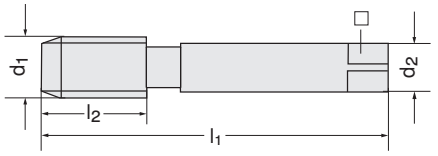
M | 6HX | DIN 371 | DIN 376 | 3,5–5 B | ≤ 3xD | HSS-E-PM TiCN | Uni

HHW

Design
Extra-robust PM screw taps with **h6 shank for shrinking and with clamping surface** for fitting in the surface chuck. Special geometry for **universal use** on machines with **synchronised spindle drive.**
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
The emulsion ratio should be min. 8%.
To increase the service life of the screw tap, we recommend the use of the Synchro tapping chuck (see art. no. 21449 ff.).

14361



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14361	DIN 371 ...	DIN 376 14361	DIN 376 ...
M 2	1.60	0.40	4	70	6 x 4.9		101		
M 2.5	2.05	0.45	5	70	6 x 4.9		102		
M 3	2.50	0.50	5	70	6 x 4.9		103		
M 4	3.30	0.70	7	70	6 x 4.9		104		
M 5	4.20	0.80	8	70	6 x 4.9		105		
M 6	5.00	1.00	10	80	6 x 4.9		106		
M 8	6.80	1.25	13	90	8 x 6.2		108		
M 10	8.50	1.50	15	100	10 x 8.0		110		
M 12	10.20	1.75	18	110	12 x 9.0				112
M 14	12.00	2.00	20	110	14 x 11.0				114
M 16	14.00	2.00	20	110	16 x 12.0				116
M 20	17.50	2.50	25	140	16 x 12.0				120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
60–80	40–50	25–70	50–60	40–50	30–40	20–30	20–30	20–30	-	-	-	-	10–20	10–20	10–25	-	40–50

Through-hole screw taps | Blind-hole screw taps | Machine thread moulds

14354 - 14355 Through-hole and blind-hole screw taps

M | 6H | DIN 371 | DIN 376 | ≤ 2xD | ≤ 2xD

ATORN®

Design
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
In the case of very hard steels, we recommend, in a deviation from the DIN, to drill the core hole larger by 0.1 to 0.3 mm.

14354
Design
HSS-E-PM-TiAlN screw tap
with long notch.
Applications
For steels up to 52 HRC.

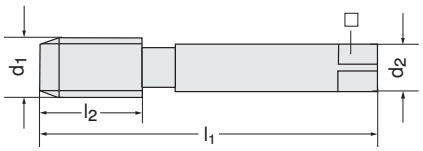
6-8 A | HSS-E-PM TiAlN | 52 HRC

14354

14355
Design
Solid carbide ultra-fine grain screw tap
with TiAlN+C coating.
From M 6 with internal coolant supply (ICS).
Applications
For steels up to 67 HRC.

2-3 C | VHM TiAlN+C | 67 HRC

14355



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN	PM/TiAlN 14354	...	Solid carbide/TiAlN+C 14355	...
M 3	2.50	0.50	10	56	3.5 x 2.7	371				103
M 4	3.30	0.70	12	63	4.5 x 3.4	371				104
M 5	4.20	0.80	14	70	6.0 x 4.9	371				105
M 6	5.50	1.00	16	80	6.0 x 4.9	371		106		106
M 8	6.80	1.25	18	90	8.0 x 6.2	371		108		108
M 10	8.50	1.50	20	100	10.0 x 8.0	371		110		110
M 12	10.20	1.75	22	110	9.0 x 7.0	376		112		112
M 16	14.00	2.00	28	110	12.0 x 9.0	376		116		116
M 20	17.50	2.50	32	140	16.0 x 12.0	376		120		

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14354	-	-	-	-	-	5–24	4–10	2–12	2–8	2–5	2–5	-	-	-	-	-	-	-
14355	-	-	-	-	-	-	-	-	-	-	2–5	1–4	1–3	-	-	-	-	-

14358 Through-hole screw tap

M | 6HX | DIN 371 | DIN 376 | 2-3 C | ≤ 2xD | GG(G)

ATORN®

Design
Without spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.

14358 103-120
Applications
For high machining performance in grey cast iron.
Quality
HSS-E, nitrided.

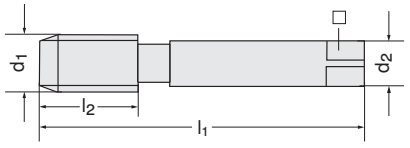
HSS-E

14358 103-120

14358 203-220
Applications
For an even longer service life.
Quality
HSS-E/TiN-coated.

HSS-E TiN

14358 203-220



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN	HSS-E nitrided 14358	...	HSS-E/TiN 14358	...
M 3	2.50	0.50	10	56	3.5 x 2.7	371		103		203
M 4	3.30	0.70	12	63	4.5 x 3.4	371		104		204
M 5	4.20	0.80	14	70	6.0 x 4.9	371		105		205
M 6	5.00	1.00	16	80	6.0 x 4.9	371		106		206
M 8	6.80	1.25	18	90	8.0 x 6.2	371		108		208
M 10	8.50	1.50	20	100	10.0 x 8.0	371		110		210
M 12	10.20	1.75	22	110	9.0 x 7.0	376		112		212
M 16	14.00	2.00	28	110	12.0 x 9.0	376		116		216
M 20	17.50	2.50	32	140	16.0 x 12.0	376		120		220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8–20	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14360 Through-hole screw tap

M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 3xD | ALU

ATORN®

Design
- With strong spiral point and larger chip space
- Up to M 10 DIN 371
- From M 12 DIN 376

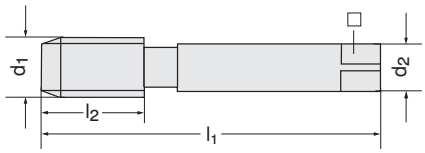
Applications
For through-hole threads in long-chipping non-ferrous metals.

HSS-E

14360 203-212

HSS-E-PM CrN

14360 103-116



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	HSS-E/polished 14360 ...	HSS-E/PM-CrN 14360 ...
M 3	2.5	0.50	10	56	3.5 x 2.7	371	203	103
M 4	3.3	0.70	12	63	4.5 x 3.4	371	204	104
M 5	4.2	0.80	14	70	6.0 x 4.9	371	205	105
M 6	5.0	1.00	16	80	6.0 x 4.9	371	206	106
M 8	6.8	1.25	18	90	8.0 x 6.2	371	208	108
M 10	8.5	1.50	20	100	10.0 x 8.0	371	210	110
M 12	10.2	1.75	22	110	9.0 x 7.0	376	212	112
M 16	14.0	2.00	28	110	12.0 x 9.0	376		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	-	-	-	-	-	-	-	-	-	-	-	-	-	20–30

14363 Machine thread mould Uni

M | 6HX | DIN 371 | DIN 376 | 2–3 C | ≤ 3xD | ≤ 3xD

ATORN®

Design
- Innovative mould geometry according to DIN 2174
- With lubrication grooves for optimum lubrication effect even in deeper threads

Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
For through holes and blind holes.
For producing metric threads on CNC and conventional machines. For the material groups steel, stainless steel and non-ferrous metals.
Also suitable for materials up to 1300 N/mm².

Quality
Finished **TiCN coating** for the best sliding properties.

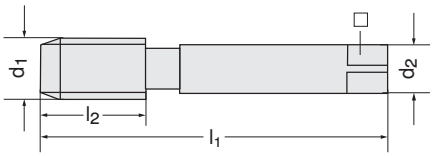
Note:
For all materials with a minimum expansion of 8%. M 1 = tolerance field 4HX.

NEW

HSS-Co8 TiCN | Uni

14363 204-212

14363 213-220



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	14363 ...
M 1	0.90	0.25	5.5	40	2.5 x 2.1	371	204
M 2	1.85	0.40	8	45	2.8 x 2.1	371	205
M 2.5	2.33	0.45	9	50	2.8 x 2.1	371	206
M 3	2.80	0.50	8	56	3.5 x 2.7	371	207
M 4	3.70	0.70	11	63	4.5 x 3.4	371	208
M 5	4.65	0.80	12	70	6.0 x 4.9	371	209
M 6	5.55	1.00	10	80	6.0 x 4.9	371	210
M 8	7.40	1.25	12	90	8.0 x 6.2	371	211
M 10	9.30	1.50	15	100	10.0 x 8.0	371	212
M 12	11.20	1.75	17	110	9.0 x 7.0	376	213
M 14	13.00	2.00	20	110	11.0 x 9.0	376	214
M 16	15.00	2.00	20	110	12.0 x 9.0	376	216
M 20	18.80	2.50	20	140	16.0 x 12.0	376	220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–40	20–40	15–22	20–30	20–30	20–30	8–15	8–15	8–15	-	-	-	-	8–10	-	-	-	-

Machine thread mould

14366 Machine thread mould Uni

M | 6HX | DIN 371 | DIN 376 | 2-3 C | ≤ 3xD | ≤ 3xD

HSS-Co8 TiCN | Uni

ATORN®

Design
- Innovative mould geometry according to DIN 2174
- With radial internal cooling
- With lubrication grooves for optimum lubrication effect even in deeper threads

Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
For through holes and blind holes.
For producing metric threads on CNC and conventional machines. For the material groups steel, stainless steel and non-ferrous metals.
Also suitable for materials up to 1300 N/mm².

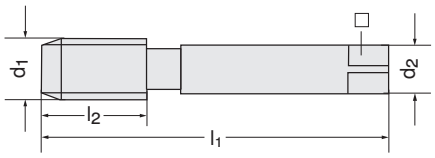
Quality
Finished **TiCN coating** for the best sliding properties.

Note:
For all materials with a minimum expansion of 8%.

NEW

14366 106-110

14366 112-116



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN	14366	...
M 6	5.55	1.00	10	80	6.0 x 4.9	371		106
M 8	7.40	1.25	12	90	8.0 x 6.2	371		108
M 10	9.30	1.50	15	100	10.0 x 8.0	371		110
M 12	11.20	1.75	17	110	9.0 x 7.0	376		112
M 16	15.00	2.00	20	110	12.0 x 9.0	376		116
M 20	18.80	2.50	20	140	16.0 x 12.0	376		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–40	20–40	15–22	20–30	20–30	20–30	8–15	8–15	8–15	-	-	-	-	8–10	-	-	-	-

14364 Machine thread mould

M | 6HX | DIN 371 | DIN 376 | 2-3 C | ≤ 2xD | ≤ 2xD | Uni

ATORN®

Design
Significantly reduced torque due to the optimised geometry. With lubrication grooves for optimum lubrication effect even in deep threads.
Up to M 10 DIN 371.
From M 12 DIN 376.
Applications
For through holes and blind holes.

Note:
For all materials with a minimum expansion of 8%.
Use the most highly compressible cutting oils possible for shaping.

14364 103-112
Quality
TiN coating for good sliding properties.

14364 203-212
Quality
TiAlN+C coating for reduced wear and lower tendency for a build-up of material deposits.

14364 303-312
Quality
Powder steel PM/TiCN coating.

HSS-E TiN

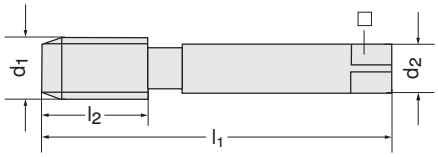
14364 103-112

HSS-E TiAlN+C

14364 203-212

HSS-E-PM TiCN

14364 303-312



							HSS-E/TiN		HSS-E/TiAlN+C		HSS-E/PM-TiCN	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN	14364	...	14364	...	14364	...
M 3	2.80	0.50	10	56	3.5 x 2.7	371		103		203		303
M 4	3.70	0.70	12	63	4.5 x 3.4	371		104		204		304
M 5	4.65	0.80	14	70	6.0 x 4.9	371		105		205		305
M 6	5.55	1.00	16	80	6.0 x 4.9	371		106		206		306
M 8	7.40	1.25	18	90	8.0 x 6.2	371		108		208		308
M 10	9.30	1.50	20	100	10.0 x 8.0	371		110		210		310
M 12	11.10	1.75	24	110	9.0 x 7.0	376		112		212		312

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
45–60	20–80	10–20	8–60	8–45	8–36	5–20	3–18	-	-	-	-	-	8–30	8–30	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14363 Machine thread mould Uni

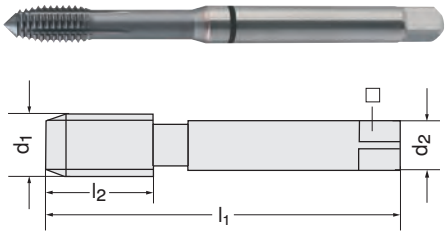
M | 6HX | DIN 371 | DIN 376 | 2-3 C | ≤ 2xD | PM TiCN | Uni

ATORN®

Design
With oil grooves.
Synchro tool for CNC machines.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Synchro chuck, see art. no. 21453, 21457 and 21837.
Suitable inserts, see art. no. 21465–21466.

14363



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14363 ...	DIN 376 14363 ...
M 3	2.75	0.50	5	56	3.5 x 2.7	103	
M 4	3.65	0.70	6	63	4.5 x 3.4	104	
M 5	4.60	0.80	7	70	6.0 x 4.9	105	
M 6	5.55	1.00	8	80	6.0 x 4.9	106	
M 8	7.40	1.25	10	90	8.0 x 6.2	108	
M 10	9.30	1.50	12	100	10.0 x 8.0	110	
M 12	11.10	1.75	18	110	9.0 x 7.0		112
M 16	15.10	2.00	20	110	12.0 x 9.0		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–40	-	10–30	15–40	15–35	15–35	10–30	10–20	5–15	-	-	-	-	5–18	5–18	-	-	-

14365 Machine thread mould

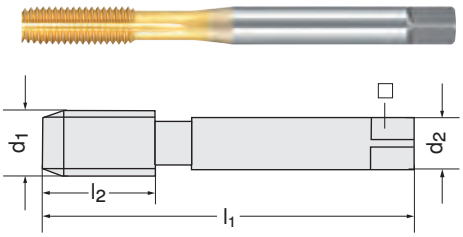
M | 6HX | DIN 2174 | 2-3 C | ≤2,5xD | ≤2,5xD | HSS-E TiN | ≤ 1100 N/mm² | ALU | VA

HHW

Design
TiN coating for good sliding properties.
With lubrication grooves for optimum lubrication effects.
Up to M 10 DIN 371.
From M 12 DIN 376.
Applications
For through holes and blind holes.

Note:
For all materials with a minimum expansion of 8%. Highly compressible cutting oils should be used for shaping.

14365



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14365 ...	DIN 376 14365 ...
M 2	1.83	0.40	8	45	2.8 x 2.1	101	
M 2.5	2.30	0.45	9	50	2.8 x 2.1	102	
M 3	2.80	0.50	11	56	3.5 x 2.7	103	
M 3.5	3.25	0.60	11	56	4.0 x 3.0	104	
M 4	3.70	0.70	13	63	4.5 x 3.4	105	
M 5	4.65	0.80	16	70	6.0 x 4.9	106	
M 6	5.55	1.00	19	80	6.0 x 4.9	107	
M 8	7.40	1.25	22	90	8.0 x 6.2	108	
M 10	9.30	1.50	24	100	10.0 x 8.0	109	
M 12	11.10	1.75	28	110	9.0 x 7.0		110
M 14	13.00	2.00	30	110	11.0 x 9.0		111
M 16	15.00	2.00	32	110	12.0 x 9.0		112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
45–60	20–80	10–20	8–60	8–45	8–36	5–20	-	-	-	-	-	-	8–30	8–30	-	-	-

Machine thread moulds | Through-hole nut taps

14367 Solid carbide machine thread mould

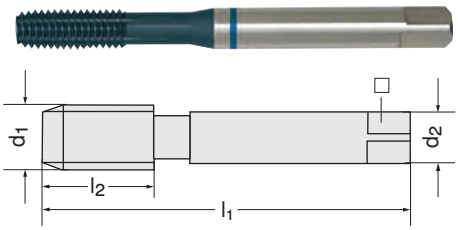
M | 6HX | DIN 371 | DIN 376 | 2-3 C | ≤ 2xD | ≤ 2xD | VHM TiAlN+C | Uni

ATORN®

Design
h6 shank for fitting in **shrink-fit chucks.**
Up to M 10 DIN 371.
From M 12 DIN 376.
Applications
For through holes and blind holes.
Quality
Solid carbide ultra-fine grain for the highest machining performance. **TiAlN+C-coated** for significant reduction in torque and lower tendency for build-up of material deposits.

Note:
For all materials with a minimum expansion of 8%. Highly compressible cutting oils should be used for shaping.
An extremely long service life for series production.
High level of process reliability.

14367



						DIN 371		DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14367	...	14367	...
M 3	2.80	0.50	10	56	6.0 x 4.9		103		
M 4	3.70	0.70	12	63	6.0 x 4.9		104		
M 5	4.65	0.80	14	70	6.0 x 4.9		105		
M 6	5.55	1.00	16	80	6.0 x 4.9		106		
M 8	7.40	1.25	18	90	8.0 x 6.2		108		
M 10	9.30	1.50	20	100	10.0 x 8.0		110		
M 12	11.10	1.75	24	110	12.0 x 9.0				112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
40–70	30–60	30–50	40–70	30–65	25–60	20–55	20–50	-	-	-	-	-	20–25	-	-	-	-

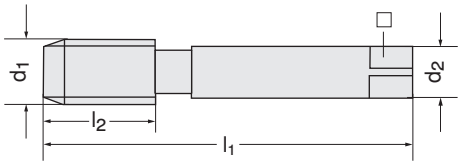
14368 Through-hole nut tap

M | 6H | DIN 357 | ca. 20 | ≤ 2xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
- With extra-long spiral point and long shank

14368



						DIN 357	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14368	...
M 3	2.50	0.50	22	70	2.2 x -		103
M 4	3.30	0.70	25	90	2.8 x 2.1		104
M 5	4.20	0.80	28	100	3.5 x 2.7		105
M 6	5.00	1.00	32	110	4.5 x 3.4		106
M 8	6.80	1.25	40	125	6.0 x 4.9		108
M 10	8.50	1.50	45	140	7.0 x 5.5		110
M 12	10.20	1.75	50	180	9.0 x 7.0		112
M 16	14.00	2.00	63	200	12.0 x 9.0		116
M 20	17.50	2.50	70	250	16.0 x 12.0		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14373 Machine thread mould Uni

M | 6GX | DIN 371 | DIN 376 | 2-3 C | ≤ 3xD | ≤ 3xD | HSS-Co8 TiCN | Uni

NEW

ATORN®

Design
- Innovative mould geometry according to DIN 2174
- With lubrication grooves for optimum lubrication effect even in deeper threads

Up to M 10 DIN 371.
From M 12 DIN 376.

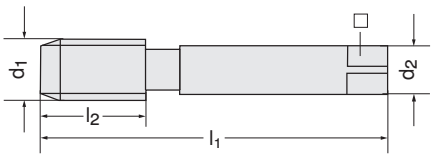
Applications
For through holes and blind holes.
For producing metric threads on CNC and conventional machines. For the material groups steel, stainless steel and non-ferrous metals. Also suitable for materials up to 1300 N/mm².
For workpieces that are retrofitted with a galvanic coating.

Quality
Finished **TiCN coating** for the best sliding properties.

Note:
For all materials with a minimum expansion of 8%.

14373 103-110

14373 112-116



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	14373	...
M 3	2.83	0.50	8	56	3.5 x 2.7	371		103
M 4	3.73	0.70	11	63	4.5 x 3.4	371		104
M 5	4.68	0.80	12	70	6.0 x 4.9	371		105
M 6	5.60	1.00	10	80	6.0 x 4.9	371		106
M 8	7.45	1.25	12	90	8.0 x 6.2	371		108
M 10	9.35	1.50	15	100	10.0 x 8.0	371		110
M 12	11.20	1.75	17	110	9.0 x 7.0	376		112
M 16	15.00	2.00	20	110	12.0 x 9.0	376		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–40	20–40	15–22	20–30	20–30	20–30	8–15	8–15	8–15	-	-	-	-	8–10	-	-	-	-

14374 Machine thread mould Uni

MF | 6HX | DIN 374 | 2-3 C | ≤ 3xD | ≤ 3xD | HSS-Co8 TiCN | Uni

NEW

ATORN®

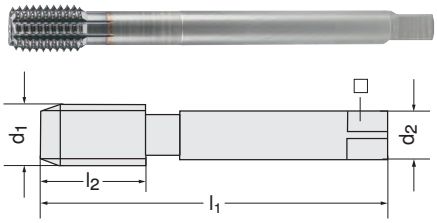
Design
- Innovative mould geometry according to DIN 2174
- With lubrication grooves for optimum lubrication effect even in deeper threads

Applications
For through holes and blind holes.
For producing fine metric threads on CNC and conventional machines. For the material groups steel, stainless steel and non-ferrous metals. Also suitable for materials up to 1300 N/mm².

Quality
Finished **TiCN coating** for the best sliding properties.

Note:
For all materials with a minimum expansion of 8%.

14374



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	14374	...
M 8 x 1	7.55	1.00	10	90	8.0 x 6.2	374		101
M 10 x 1	9.55	1.00	12	90	10.0 x 8.0	374		102
M 12 x 1	11.55	1.00	15	100	9.0 x 7.0	374		103
M 12 x 1.5	11.30	1.50	15	100	11.0 x 9.0	374		104
M 16 x 1.5	15.30	1.50	15	110	14.0 x 11.0	374		105
M 18 x 1.5	17.30	1.50	15	125	16.0 x 12.0	374		106
M 20 x 1.5	19.30	1.50	15	125	18.0 x 14.5	374		107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–40	20–40	15–22	20–30	20–30	20–30	8–15	8–15	8–15	-	-	-	-	8–10	-	-	-	-

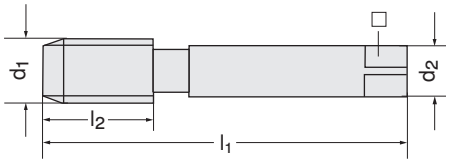
Through-hole screw taps | Blind-hole screw taps

14372 Through-hole screw tap, left cutting

M | 6H | DIN 371 | DIN 376 | 3.5–5 B | ≤ 2xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
With strong spiral point.
Up to M 10 DIN 371.
From M 12 DIN 376.



14372

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14372	DIN 371 ...	DIN 376 14372	DIN 376 ...
M 4	3.30	0.70	12	63	4.5 x 3.4		104		
M 5	4.20	0.80	14	70	6.0 x 4.9		105		
M 6	5.00	1.00	16	80	6.0 x 4.9		106		
M 8	6.80	1.25	18	90	8.0 x 6.2		108		
M 10	8.50	1.50	20	100	10.0 x 8.0		110		
M 12	10.20	1.75	22	110	9.0 x 7.0				112
M 14	12.00	2.00	25	110	11.0 x 9.0				114
M 16	14.00	2.00	28	110	12.0 x 9.0				116
M 20	17.50	2.50	32	140	16.0 x 12.0				120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

14392 - 14394 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 15° | 2–3 C | ≤ 2xD

ATORN®

Design
With larger chip space.
Up to M 10 DIN 371.
From M 12 DIN 376.

14392
Applications
For steels
up to 800 N/mm².

HSS-E | ≤ 800 N/mm²

14393
Applications
Low build-up of material deposits thanks to TiN coating. For steels
up to 850 N/mm².

HSS-E TiN | ≤ 850 N/mm²

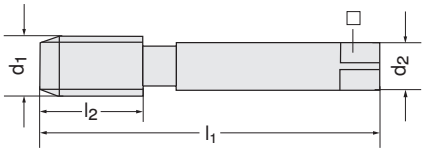
14394
Applications
Excellent emergency running properties and the highest demands on the performance thanks to special TiCN coating.
For steels **up to 1000 N/mm².**

HSS-E TiCN | ≤ 1000 N/mm²

14392

14393

14394



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	HSS-E 14392	HSS-E ...	HSS-E/TiN 14393	HSS-E/TiN ...	HSS-E/TiCN 14394	HSS-E/TiCN ...
M 2	1.60	0.40	8	45	2.8 x 2.1	371		098				
M 2.3	1.90	0.40	8	45	2.8 x 2.1	371		099				
M 2.5	2.05	0.45	9	50	2.8 x 2.1	371		100				
M 2.6	2.10	0.45	9	50	2.8 x 2.1	371		101				
M 3	2.50	0.50	6	56	3.0 x 2.7	371		102		102		102
M 3.5	2.90	0.60	7	56	4.0 x 3.0	371		103				
M 4	3.30	0.70	7	63	4.5 x 3.4	371		104		104		104
M 5	4.20	0.80	8	70	6.0 x 4.9	371		105		105		105
M 6	5.00	1.00	10	80	6.0 x 4.9	371		106		106		106
M 7	6.00	1.00	10	80	7.0 x 5.5	371		107				
M 8	6.80	1.25	13	90	8.0 x 6.2	371		108		108		108
M 10	8.50	1.50	15	100	10.0 x 8.0	371		110		110		110
M 12	10.20	1.75	18	110	9.0 x 7.0	376		112		112		112
M 14	12.00	2.00	20	110	11.0 x 9.0	376		114				
M 16	14.00	2.00	20	110	12.0 x 9.0	376		116		116		116
M 18	15.50	2.50	25	125	14.0 x 11.0	376		118				
M 20	17.50	2.50	25	140	16.0 x 12.0	376		120		120		120
M 24	21.00	3.00	30	160	18.0 x 14.5	376		124				
M 30	26.50	3.50	35	180	22.0 x 18.0	376		130				

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14392-14393																	
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	8–20	-
14394																	
30–40	10–60	10–20	5–40	5–30	3–24	5–18	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14396 - 14404 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | 2-3 C | ≤2.5xD

ATORN®

Design
With larger chip space and strong twist.
Up to M 10 DIN 371.
From M 12 DIN 376.

≈ 40° | HSS-E | ≤ 800 N/mm²

14396
Applications
For steels **up to 800 N/mm².**

14397
Applications
Low build-up of material deposits thanks to TiN coating. For steels **up to 850 N/mm².**

14398
Applications
Excellent emergency running properties and performs well for the most demanding applications thanks to special TiCN coating.
For steels **up to 1000 N/mm².**

14404
Applications
Also suitable for synchro chucks. For steels **up to 1000 N/mm².**

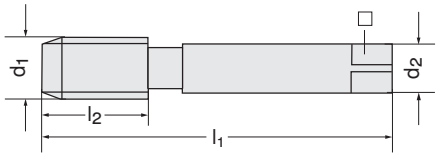
14396 300

≈ 40° | HSS-E | ≤ 800 N/mm² — 14396

≈ 40° | HSS-E TiN | ≤ 850 N/mm² — 14397

≈ 40° | HSS-E TiCN | ≤ 1000 N/mm² — 14398

≈ 50° | HSS-E-PM TiN | ≤ 1000 N/mm² — 14404



Set contents	HSS-E 14396	...
7 pieces M 3–M 12		300

d_1 Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	HSS-E 14396	...	HSS-E/TiN 14397	...	HSS-E/TiCN 14398	...	HSS-E-PM/TiN 14404	...
M 2	1.60	0.40	8	45	2.8 x 2.1	371		101		101		101		
M 2.5	2.05	0.45	9	50	2.8 x 2.1	371		102		102		102		
M 3	2.50	0.50	6	56	3.5 x 2.7	371		103		103		103		101
M 4	3.30	0.70	7	63	4.5 x 3.4	371		104		104		104		102
M 5	4.20	0.80	8	70	6.0 x 4.9	371		105		105		105		103
M 6	5.00	1.00	10	80	6.0 x 4.9	371		106		106		106		104
M 8	6.80	1.25	13	90	8.0 x 6.2	371		108		108		108		105
M 10	8.50	1.50	15	100	10.0 x 8.0	371		110		110		110		106
M 12	10.20	1.75	18	110	9.0 x 7.0	376		112		112		112		107
M 14	12.00	2.00	20	110	11.0 x 9.0	376		114				114		108
M 16	14.00	2.00	20	110	12.0 x 9.0	376		116		116		116		109
M 18	15.50	2.50	25	125	14.0 x 11.0	376		118						
M 20	17.50	2.50	25	140	16.0 x 12.0	376		120		120		120		110
M 24	21.00	3.00	30	160	18.0 x 14.5	376		124		124				
M 30	26.50	3.50	35	180	22.0 x 18.0	376		130		130				

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14396 + 14397																	
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-
14398																	
30–40	10–60	10–20	5–40	5–30	5–24	5–18	-	-	-	-	-	-	-	-	-	-	-
14404																	
-	-	-	5–40	5–30	5–24	2–22	-	-	-	-	-	-	5–20	5–20	-	8–30	-

Blind-hole screw tap

14410 Blind-hole screw tap Hyper Z

M | 6H | DIN 371 | DIN 376 | 2-3 C | ≈ 43° | HSS-E | ≤ 2xD | ≤ 1200 N/mm² | GGG | ALU | CU

NACHI

Design
- Metric thread
- Blind hole thread
- Right cutting
- Without point
- Spiral-fluted 43°
- Up to M 10 DIN 371
- From M 12 DIN 376

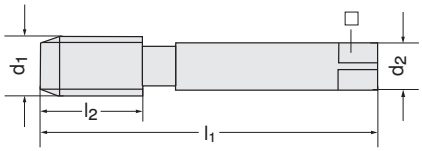
Note:
UNI High Performance screw taps with optimum cutting geometry, long service life and process reliability!

Applications
For steels up to 1200 N/mm².

Quality
HSS-E.

14410

NEW



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Z	DIN	14410	...
M 3	2.50	0.50	5.6	56	3.5 x 2.7	3	371		005
M 4	3.30	0.70	8.1	63	4.5 x 3.4	3	371		006
M 5	4.20	0.80	9.4	70	6.0 x 4.9	3	371		007
M 6	5.00	1.00	12.0	80	6.0 x 4.9	3	371		008
M 8	6.80	1.25	15.4	90	8.0 x 6.2	3	371		009
M 10	8.50	1.50	18.9	100	10.0 x 8.0	3	371		010
M 12	10.20	1.75	22.4	110	9.0 x 7.0	3	376		011
M 14	12.00	2.00	25.9	110	11.0 x 9.0	3	376		012
M 16	14.00	2.00	25.9	110	12.0 x 9.0	3	376		013
M 18	15.50	2.50	32.6	125	14.0 x 11.0	4	376		014
M 20	17.50	2.50	32.6	140	16.0 x 12.0	4	376		015
M 22	19.50	2.50	32.6	140	18.0 x 14.5	4	376		016
M 24	21.00	3.00	38.8	160	18.0 x 14.5	4	376		017

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–25	10–25	6–20	15–50	15–50	15–50	15–50	15–50	5–10	-	-	-	-	-	-	-	15–30	10–20

14399 Blind-hole screw tap

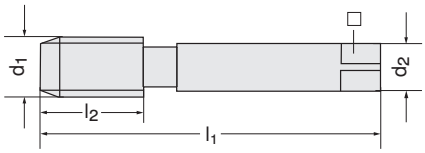
M | 6H | DIN 371 | ≈ 40° | 1,5-2 E | ≤2,5xD | HSS-E | ≤ 1000 N/mm²

ATORN®

Design
Extremely short notch **(1.5–2 speed)**.

Applications
For threaded holes with very short thread run-out.

14399



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14399	...
M 3	2.50	0.50	6.0	56	3.5 x 2.7		103
M 4	3.30	0.70	7.5	63	4.5 x 3.4		104
M 5	4.20	0.80	8.5	70	6.0 x 4.9		105
M 6	5.00	1.00	11.0	80	6.0 x 4.9		106
M 8	6.80	1.25	14.0	90	8.0 x 6.2		108
M 10	8.50	1.50	16.0	100	10.0 x 8.0		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–20	5–15	5–12	4–10	-	-	-	-	-	-	-	-	-	-	-

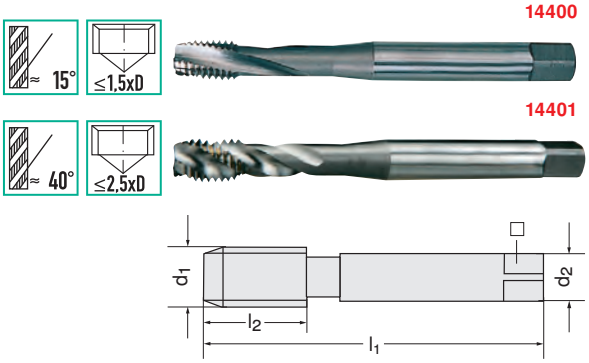
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14400 - 14401 Blind-hole screw tap

M | 6H | DIN 371 | 2-3 C | HSS-E | ≤ 800 N/mm²

14400
Design
Right-hand spiral grooves approx. 15°.

14401
Design
Right-hand spiral grooves approx. 40°.



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	15° 14400	...	40° 14401	...
M 2	1.60	0.40	8	45	2.8 x 2.1		101		101
M 2.5	2.05	0.45	9	50	2.8 x 2.1		103		103
M 3	2.50	0.50	5	56	3.5 x 2.7		104		104
M 4	3.30	0.70	7	63	4.5 x 3.4		106		106
M 5	4.20	0.80	8	70	6.0 x 4.9		107		107
M 6	5.00	1.00	10	80	6.0 x 4.9		108		108
M 8	6.80	1.25	13	90	8.0 x 6.2		109		109
M 10	8.50	1.50	15	100	10.0 x 8.0		110		110

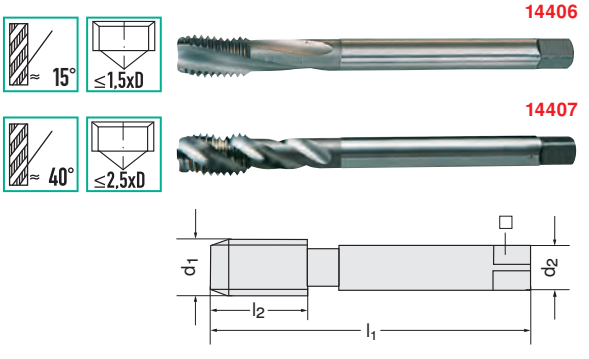
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-	20–30

14406 - 14407 Blind-hole screw tap

M | 6H | DIN 376 | 2-3 C | HSS-E | ≤ 800 N/mm²

14406
Design
Right-hand spiral grooves approx. 15°.

14407
Design
Right-hand spiral grooves approx. 40°.



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	15° 14406	...	40° 14407	...
M 3	2.50	0.50	5	56	2.2 x –		101		101
M 4	3.30	0.70	7	63	2.8 x 2.1		103		103
M 5	4.20	0.80	8	70	3.5 x 2.7		104		104
M 6	5.00	1.00	10	80	4.5 x 3.4		105		105
M 8	6.80	1.25	13	90	6.0 x 4.9		106		106
M 10	8.50	1.50	15	100	7.0 x 5.5		107		107
M 12	10.20	1.75	18	110	9.0 x 7.0		108		108
M 14	12.00	2.00	20	110	11.0 x 9.0		109		109
M 16	14.00	2.00	20	110	12.0 x 9.0		110		110
M 18	15.50	2.50	25	125	14.0 x 11.0		111		111
M 20	17.50	2.50	25	140	16.0 x 12.0		112		112
M 22	19.50	2.50	25	140	18.0 x 14.5		113		113
M 24	21.00	3.00	30	160	18.0 x 14.5		114		114
M 27	24.00	3.00	30	160	20.0 x 16.0		115		115
M 30	26.50	3.50	35	180	22.0 x 18.0		116		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-	20–30

Blind-hole screw tap

14402 - 14403 Blind-hole screw tap

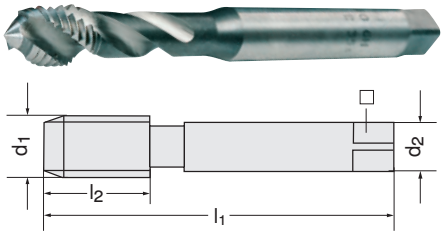
M | 6H | DIN 371 | DIN 376 | ≈ 35° | 2-3 C | ≤ 2xD | HSS-E | ≤ 800 N/mm²

Note:
Cost-effective design.

14402
M 3–M 10, DIN 371.

14403
M 3–M 24, DIN 376.

14402



d1	Core hole Ø mm	Pitch mm	l2 mm	l1 mm	d2 x ⏍ mm	DIN 371 14402 ...
M 3	2.50	0.50	6	56	3.5 x 2.7	104
M 4	3.30	0.70	7	63	4.5 x 3.4	106
M 5	4.20	0.80	8	70	6.0 x 4.9	107
M 6	5.00	1.00	10	80	6.0 x 4.9	108
M 8	6.80	1.25	13	90	8.0 x 6.2	109
M 10	8.50	1.50	15	100	10.0 x 6.2	110

d1	Core hole Ø mm	Pitch mm	l2 mm	l1 mm	d2 x ⏍ mm	DIN 376 14403 ...
M 3	2.50	0.50	5	56	2.2 x –	204
M 4	3.30	0.70	7	63	2.8 x 2.1	206
M 5	4.20	0.80	8	70	3.5 x 2.7	207
M 6	5.00	1.00	10	80	4.5 x 3.4	208
M 8	6.80	1.25	13	90	6.0 x 4.9	209
M 10	8.50	1.50	15	100	7.0 x 5.5	210
M 12	10.20	1.75	18	110	9.0 x 7.0	211
M 14	12.00	2.00	20	110	11.0 x 9.0	212
M 16	14.00	2.00	20	110	12.0 x 9.0	213
M 20	17.50	2.50	25	140	16.0 x 12.0	214
M 24	21.00	3.00	30	160	18.0 x 14.5	215

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-	20-25

14408 - 14409 Blind-hole screw tap

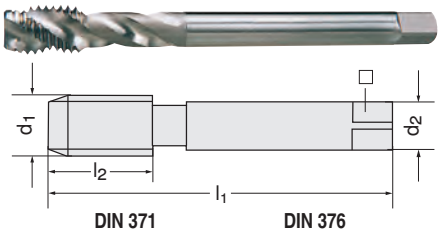
M | 6G | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤ 2xD | HSS-E | ≤ 800 N/mm²

HHW

Design
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
For workpieces that are retrofitted with a galvanic coating.

14408



d1	Core hole Ø mm	Pitch mm	l2 mm	l1 mm	d2 x ⏍ mm	DIN 371 14408 ...	DIN 376 14409 ...
M 3	2.50	0.50	5	56	3.5 x 2.7	204	
M 4	3.30	0.70	7	63	4.5 x 3.4	206	
M 5	4.20	0.80	8	70	6.0 x 4.9	207	
M 6	5.00	1.00	10	80	6.0 x 4.9	208	
M 8	6.80	1.25	13	90	8.0 x 6.2	209	
M 10	8.50	1.50	15	100	10.0 x 8.0	210	
M 12	10.20	1.75	18	110	9.0 x 7.0		108
M 14	12.00	2.00	20	110	11.0 x 9.0		109
M 16	14.00	2.00	20	110	12.0 x 9.0		110
M 18	15.50	2.50	25	125	14.0 x 11.0		111
M 20	17.50	2.50	25	140	16.0 x 12.0		112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

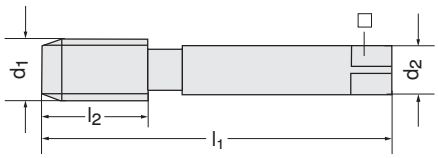
14412 - 14413 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤ 2xD | HSS-E OX | ≤ 800 N/mm²

Design
Special OX treatment for soft and lubricated steels (St 33/St 37).
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Especially suitable for use on machines with non-forcibly actuated working spindle. Using special cutting geometry an accurate thread is created.

14412



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14412 ...	DIN 376 14413 ...
M 3	2.50	0.50	5	56	3.5 x 2.7	101	
M 4	3.30	0.70	7	63	4.5 x 3.4	103	
M 5	4.20	0.80	8	70	6.0 x 4.9	104	
M 6	5.00	1.00	10	80	6.0 x 4.9	105	
M 8	6.80	1.25	13	90	8.0 x 6.2	106	
M 10	8.50	1.50	15	100	10.0 x 8.0	107	
M 12	10.20	1.75	18	110	9.0 x 7.0		108
M 14	12.00	2.00	20	110	11.0 x 9.0		109
M 16	14.00	2.00	20	110	12.0 x 9.0		110
M 18	15.50	2.50	25	125	14.0 x 11.0		111
M 20	17.50	2.50	25	140	16.0 x 12.0		112
M 22	19.50	2.50	25	140	18.0 x 14.5		113
M 24	21.00	3.00	30	160	18.0 x 14.5		114

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-	-

14420 - 14421 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 39° | 2-3 C | ≤2,5xD | HSS-E | ≤ 900 N/mm²

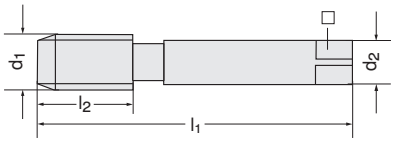
EMUGE

Design
Up to M 10 DIN 371.
From M 12 DIN 376.

14420
1 Enorm.

14421
2 Enorm.

14420



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14420 ...	DIN 376 14421 ...
M 3	2.50	0.50	11	56	3.5 x 2.7	101	
M 4	3.30	0.70	13	63	4.5 x 3.4	103	
M 5	4.20	0.80	15	70	6.0 x 4.9	104	
M 6	5.00	1.00	17	80	6.0 x 4.9	105	
M 7	6.00	1.00	17	80	7.0 x 5.5	108	
M 8	6.80	1.25	20	90	8.0 x 6.2	106	
M 10	8.50	1.50	22	100	10.0 x 8.0	107	
M 12	10.20	1.75	18	110	9.0 x 7.0		108
M 14	12.00	2.00	20	110	11.0 x 9.0		109
M 16	14.00	2.00	22	110	12.0 x 9.0		110
M 20	17.50	2.50	25	140	16.0 x 12.0		112
M 24	21.00	3.00	30	160	18.0 x 14.5		114

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	10–12	5–25	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-

Blind-hole screw tap

14425 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2–3 C | ≤ 3xD | ≤ 1200 N/mm²

ATORN®

Design
Minimum thread radial relief.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Very well suited for machining VA.

14425 101-120+300
Design
Reduced build-up of material deposits due to vaporisation.
Quality
HSS-E, vaporised.

14425 203-216
Design
TiN-coated for an even longer service life.
Quality
HSS-E/TiN-coated.

14425 300

HSS-E

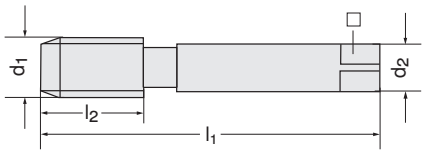
Set contents		Vaporised 14425 ...
7 pieces	M3–M 12	300

HSS-E

14425 101-120

HSS-E TiN

14425 203-216



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏃ mm	DIN	Vaporised 14425 ...	TiN-coated 14425 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	371	101	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	371	102	
M 3	2.50	0.50	6	56	3.5 x 2.7	371	103	203
M 4	3.30	0.70	7	63	4.5 x 3.4	371	104	204
M 5	4.20	0.80	8	70	6.0 x 4.9	371	105	205
M 6	5.00	1.00	10	80	6.0 x 4.9	371	106	206
M 8	6.80	1.25	13	90	8.0 x 6.2	371	108	208
M 10	8.50	1.50	15	100	10.0 x 8.0	371	110	210
M 12	10.20	1.75	18	110	9.0 x 7.0	376	112	212
M 16	14.00	2.00	20	110	11.0 x 9.0	376	116	216
M 20	17.50	2.50	25	140	16.0 x 12.0	376	120	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14425 101-120 + 300																	
20–25	-	-	-	-	5–12	-	-	-	-	-	-	-	5–12	5–12	2–6	-	-
14425 203-216																	
-	-	-	-	-	5–12	-	-	-	-	-	-	-	5–20	5–20	2–6	-	-

14429 - 14430 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 35° | 2–3 C | ≤ 2xD | HSS-E TiCN | ≤ 1000 N/mm²

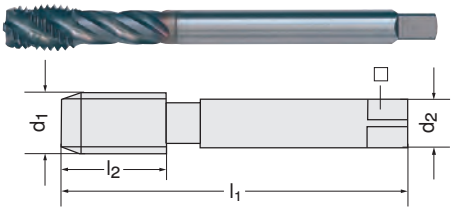
Design
Long service life thanks to TiCN coating.

Note:
Cost-effective design.

14429
M 3–M 10, DIN 371.

14430
M 3–M 24, DIN 376.

14429



DIN 371

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏃ mm	14429 ...
M 3	2.50	0.50	11	56	3.5 x 2.7	201
M 4	3.30	0.70	13	63	4.5 x 3.4	202
M 5	4.20	0.80	15	70	6.0 x 4.9	203
M 6	5.00	1.00	17	80	6.0 x 4.9	204
M 8	6.80	1.25	20	90	8.0 x 6.2	205
M 10	8.50	1.50	22	100	10.0 x 8.0	206

DIN 376

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏃ mm	14430 ...
M 3	2.50	0.50	11	56	2.2 x –	201
M 4	3.30	0.70	13	63	2.8 x 2.1	202
M 5	4.20	0.80	15	70	3.5 x 2.7	203
M 6	5.00	1.00	17	80	4.5 x 3.4	204
M 8	6.80	1.25	20	90	6.0 x 4.9	205
M 10	8.50	1.50	22	100	7.0 x 5.5	206
M 12	10.20	1.75	24	110	9.0 x 7.0	207
M 14	12.00	2.00	30	110	11.0 x 9.0	208
M 16	14.00	2.00	32	110	12.0 x 9.0	209
M 20	17.50	2.50	34	140	16.0 x 12.0	210
M 24	21.00	3.00	38	160	18.0 x 14.5	211

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–40	5–30	5–24	5–24	-	-	-	-	-	-	5–20	5–20	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

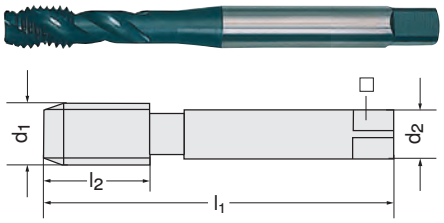
14436 - 14437 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤ 2xD | HSS-E | VA-OX | Uni | ≤ 1200 N/mm²

Design
Increased wear resistance thanks to the OX coating.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Very well suited for machining VA.

14436



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14436 ...	DIN 376 14437 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	101	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	103	
M 3	2.50	0.50	5	56	3.5 x 2.7	104	
M 3.5	2.90	0.60	6	56	4.0 x 3.0	105	
M 4	3.30	0.70	7	63	4.5 x 3.4	106	
M 5	4.20	0.80	8	70	6.0 x 4.9	107	
M 6	5.00	1.00	10	80	6.0 x 4.9	108	
M 8	6.80	1.25	13	90	8.0 x 6.2	109	
M 10	8.50	1.50	15	100	10.0 x 8.0	110	
M 12	10.20	1.75	18	110	9.0 x 7.0		111
M 14	12.00	2.00	20	110	11.0 x 9.0		112
M 16	14.00	2.00	20	110	12.0 x 9.0		113
M 18	15.50	2.50	25	125	14.0 x 11.0		114
M 20	17.50	2.50	25	140	16.0 x 12.0		115
M 22	19.50	2.50	25	140	18.0 x 14.5		116
M 24	21.00	3.00	30	160	18.0 x 14.5		117
M 30	26.50	3.50	35	180	22.0 x 18.0		118

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	5–12	2–8	-	-	-	-	-	5–12	5–12	-	-	-

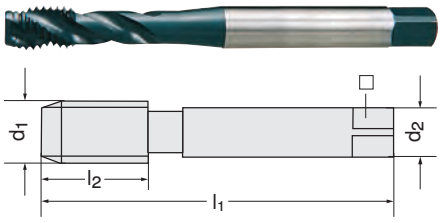
14438 Blind-hole screw tap

M | 6G | DIN 371 | ≈ 40° | 2-3 C | ≤ 2xD | HSS-E | VA-OX | Uni | ≤ 1200 N/mm²

Design
Increased wear resistance thanks to the OX coating.

Note:
For workpieces that are retrofitted with a galvanic coating.
Very well suited for machining VA.

14438



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14438 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	101
M 2.5	2.05	0.45	9	50	2.8 x 2.1	103
M 3	2.50	0.50	5	56	3.5 x 2.7	104
M 4	3.30	0.70	7	63	4.5 x 3.4	106
M 5	4.20	0.80	8	70	6.0 x 4.9	107
M 6	5.00	1.00	10	80	6.0 x 4.9	108
M 8	6.80	1.25	13	90	8.0 x 6.2	109
M 10	8.50	1.50	15	100	10.0 x 8.0	110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	5–12	2–8	-	-	-	-	-	5–12	5–12	-	-	-

Through-hole screw taps | Blind-hole screw taps

14414 Through-hole screw tap Hyper Z (VA)

M | 6H | DIN 371 | DIN 376 | 3.5-5 B | HSS-E

≤ 2xD | ≤ 1100 N/mm² | ≤ 1100 N/mm² | ALU | CU

NACHI

Design
- Metric thread
- Through-hole thread
- Right cutting with spiral point
- Up to M 10 DIN 371
- From M 12 DIN 376

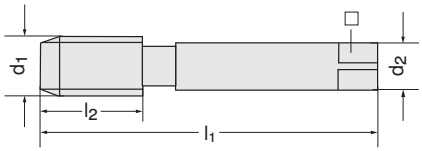
Applications
- For rust-free material up to 1100 N/mm²

Quality
HSS-E.

Note:
UNI High Performance screw taps with optimum cutting geometry, long service life and process reliability!

NEW

14414



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Z	DIN	14414	...
M 3	2.50	0.50	10	46	3.5 x 2.7	3	371		200
M 4	3.30	0.70	12.5	52	4.5 x 3.4	3	371		201
M 5	4.20	0.80	14.5	60	6.0 x 4.9	3	371		202
M 6	5.00	1.00	17	62	6.0 x 4.9	3	371		203
M 8	6.80	1.25	22	70	8.0 x 6.2	3	371		204
M 10	8.50	1.50	27	75	10.0 x 8.0	3	371		205
M 12	10.20	1.75	32	82	9.0 x 7.0	3	376		206

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–25	10–25	6–11	5–10	5–10	5–10	5–10	5–10	-	-	-	-	-	5–10	5–10	-	-	10–20

14411 Blind-hole screw tap Hyper Z (VA)

M | 6H | DIN 371 | DIN 376 | 2-3 C | ≈ 51°

HSS-E | ≤ 2xD | ≤ 1100 N/mm² | ≤ 1100 N/mm² | ALU | CU

NACHI

Design
- Metric thread
- Blind hole thread
- Right cutting
- Without point
- Spiral-fluted 51°
- Up to M 10 DIN 371
- From M 12 DIN 376

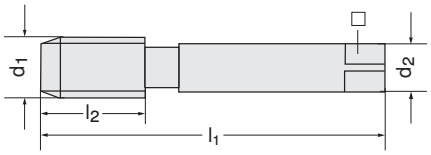
Applications
For rust-free material up to 1100 N/mm²

Quality
HSS-E.

Note:
UNI High Performance screw taps with optimum cutting geometry, long service life and process reliability!

NEW

14411



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Z	DIN	14411	...
M 3	2.50	0.50	5.6	56	3.5 x 2.7	3	371		005
M 4	3.30	0.70	8.1	63	4.5 x 3.4	3	371		006
M 5	4.20	0.80	9.4	70	6.0 x 4.9	3	371		007
M 6	5.00	1.00	12.0	80	6.0 x 4.9	3	371		008
M 8	6.80	1.25	15.4	90	8.0 x 6.2	3	371		009
M 10	8.50	1.50	18.9	100	10.0 x 8.0	3	371		010
M 12	10.20	1.75	22.4	110	9.0 x 7.0	3	376		011

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–25	10–25	6–11	5–10	5–10	5–10	5–10	5–10	-	-	-	-	-	5–10	5–10	-	-	10–20

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14439 - 14440 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 39° | 2-3 C | ≤2,5xD | HSS-E | ≤ 1100 N/mm²

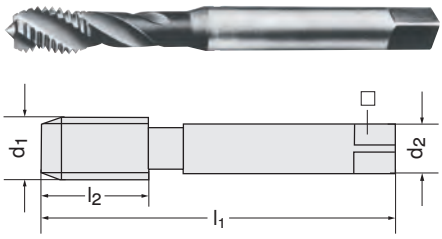
EMUGE

Design
Up to M 10 DIN 371.
From M 12 DIN 376.

14439
1 Enorm-VA.

14440
2 Enorm-VA.

14439



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14439	...	DIN 376 14440	...
M 3	2.50	0.50	6	56	3.5 x 2.7		104		
M 4	3.30	0.70	7	63	4.5 x 3.4		106		
M 5	4.20	0.80	8	70	6.0 x 4.9		107		
M 6	5.00	1.00	10	80	6.0 x 4.9		108		
M 8	6.80	1.25	14	90	8.0 x 6.2		109		
M 10	8.50	1.50	16	100	10.0 x 8.0		110		
M 12	10.20	1.75	18	110	9.0 x 7.0				111
M 14	12.00	2.00	20	110	11.0 x 9.0				112
M 16	14.00	2.00	22	110	12.0 x 9.0				113
M 20	17.50	2.50	25	140	16.0 x 12.0				115
M 24	21.00	3.00	30	160	18.0 x 14.5				117

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–25	5–20	5–15	5–12	5–10	-	-	-	-	-	5–15	2–10	-	-	-

14443 - 14444 Blind-hole screw tap

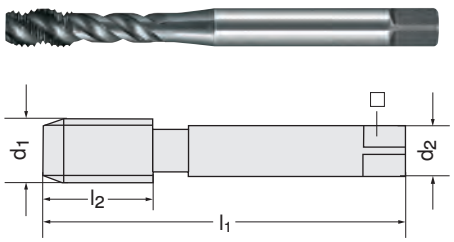
M | 6H | DIN 371 | DIN 376 | ≈ 45° | 2-3 C | ≤ 3xD | HSS-E | VA-OX | ≤ 1200 N/mm² | Uni

HHW

Design
Special right-hand spiral grooves approx. 45°.
Increased wear resistance thanks to the OX coating.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
For particularly deep blind holes.

14443



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14443	...	DIN 376 14444	...
M 3	2.50	0.50	5	56	3.5 x 2.7		101		
M 4	3.30	0.70	7	63	4.5 x 3.4		102		
M 5	4.20	0.80	8	70	6.0 x 4.9		103		
M 6	5.00	1.00	10	80	6.0 x 4.9		104		
M 8	6.80	1.25	13	90	8.0 x 6.2		105		
M 10	8.50	1.50	15	100	10.0 x 8.0		106		
M 12	10.20	1.75	18	110	9.0 x 7.0				107
M 16	14.00	2.00	20	110	12.0 x 9.0				109
M 20	17.50	2.50	25	140	16.0 x 12.0				110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	5–12	2–8	-	-	-	-	-	5–12	5–12	-	-	-

Blind-hole screw tap

14445 Blind-hole screw tap

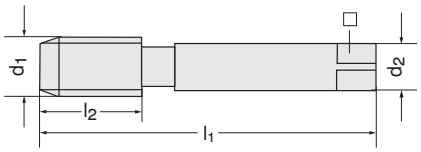
M | 6H | DIN 371 | DIN 376 | ≈ 15° | 2-3 C | ≤ 2xD | HSS-E | ≤ 1200 N/mm²

ATORN®

Design
Spiral-fluted with offset teeth to reduce the torque and for better distribution of the lubricant.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
Particularly suitable for materials that tend to jam and thin-walled parts, since there is no material deformation thanks to the reduced frictional resistance.

14445



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14445 ...	DIN 376 14445 ...
M 3	2.50	0.50	6.0	56	3.5 x 2.7	103	
M 4	3.30	0.70	7.5	63	4.5 x 3.4	104	
M 5	4.20	0.80	8.5	70	6.0 x 4.9	105	
M 6	5.00	1.00	11.0	80	6.0 x 4.9	106	
M 8	6.80	1.25	14.0	90	8.0 x 6.2	108	
M 10	8.50	1.50	16.0	100	10.0 x 8.0	110	
M 12	10.20	1.75	18.5	110	9.0 x 7.0		112
M 16	14.00	2.00	20.0	110	12.0 x 9.0		116
M 20	17.50	2.50	25.0	140	16.0 x 12.0		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	5–12	5–12	-	-	-

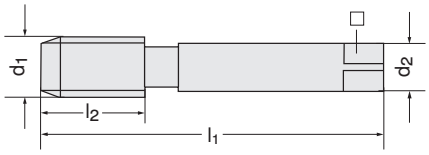
14447 - 14448 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤ 2xD | HSS-E TiN | ≤ 1200 N/mm²

HHW

Design
Improved wear characteristics thanks to TiN coating.
Up to M 10 DIN 371.
From M 12 DIN 376.

14447



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14447 ...	DIN 376 14448 ...
M 3	2.50	0.50	5	56	3.5 x 2.7	101	
M 4	3.30	0.70	7	63	4.5 x 3.4	102	
M 5	4.20	0.80	8	70	6.0 x 4.9	103	
M 6	5.00	1.00	10	80	6.0 x 4.9	104	
M 8	6.80	1.25	13	90	8.0 x 6.2	105	
M 10	8.50	1.50	15	100	10.0 x 8.0	106	
M 12	10.20	1.75	18	110	9.0 x 7.0		107
M 16	14.00	2.00	20	110	12.0 x 9.0		109
M 20	17.50	2.50	25	140	16.0 x 12.0		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–40	5–30	5–24	5–20	2–12	-	-	-	-	-	5–20	5–20	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

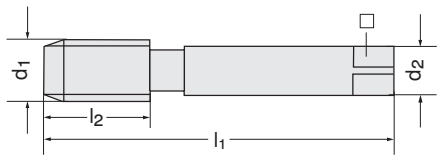
14451 - 14452 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤ 2xD | HSS-E | ≤ 1200 N/mm²

Design
With offset teeth to reduce the torque and for better distribution of the lubricant.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
Particularly suitable for materials that tend to jam and thin-walled parts, since there is no material deformation thanks to the reduced frictional resistance.

14451



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN 371 14451 ...	DIN 376 14452 ...
M 3	2.50	0.50	5	56	3.5 x 2.7	104	
M 4	3.30	0.70	7	63	4.5 x 3.4	106	
M 5	4.20	0.80	8	70	6.0 x 4.9	107	
M 6	5.00	1.00	10	80	6.0 x 4.9	108	
M 8	6.80	1.25	13	90	8.0 x 6.2	109	
M 10	8.50	1.50	15	100	10.0 x 8.0	110	
M 12	10.20	1.75	18	110	9.0 x 7.0		111
M 16	14.00	2.00	20	110	12.0 x 9.0		113
M 20	17.50	2.50	25	140	16.0 x 12.0		114

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–20	5–15	5–12	5–12	2–8	-	-	-	-	-	5–12	-	-	-	-

14449 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤2,5xD | ≤ 1400 N/mm²

ATORN®

Design
Up to M 10 DIN 371.
From M 12 DIN 376.
Applications
Special grinding for steels **up to 1400 N/mm².**

Note:
The problem solver for high-strength materials.

14449 103-120
Quality
HSS-E.

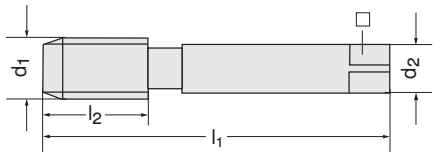
14449 203-220
Quality
HSS-E/TiCN.

HSS-E

14449 103-120

HSS-E TiCN

14449 203-220



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⊓ mm	DIN	HSS-E 14449 ...	HSS-E/TiCN 14449 ...
M 3	2.50	0.50	6	56	3.5 x 2.7	371	103	203
M 4	3.30	0.70	7	63	4.5 x 3.4	371	104	204
M 5	4.20	0.80	8	70	6.0 x 4.9	371	105	205
M 6	5.00	1.00	10	80	6.0 x 4.9	371	106	206
M 8	6.80	1.25	13	90	8.0 x 6.2	371	108	208
M 10	8.50	1.50	15	100	10.0 x 8.0	371	110	210
M 12	10.20	1.75	18	110	9.0 x 7.0	376	112	212
M 16	14.00	2.00	20	110	12.0 x 9.0	376	116	216
M 20	17.50	2.50	25	140	16.0 x 12.0	376	120	220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	5–15	5–12	4–10	2–8	2–5	-	-	-	-	-	-	-	-	-

Blind-hole screw tap

14446 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 15° | 3–4 | ≤ 3xD | HSS-E PM | Ti/Ni

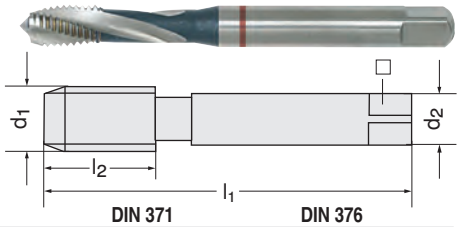
ATORN®

Design
Light chip transport to the rear.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
For an especially long service life.
For titanium, titanium alloys and super alloys.

Note:
For difficult-to-machine materials.

14446



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14446	...	DIN 376 14446	...
M 3	2.50	0.50	10	56	3.5 x 2.7		103		
M 4	3.30	0.70	12	63	4.5 x 3.4		104		
M 5	4.20	0.80	14	70	6.0 x 4.9		105		
M 6	5.00	1.00	16	80	6.0 x 4.9		106		
M 8	6.80	1.25	18	90	8.0 x 6.2		108		
M 10	8.50	1.50	20	100	10.0 x 8.0		110		
M 12	10.20	1.75	22	110	9.0 x 7.0				112
M 16	14.00	2.00	28	110	12.0 x 9.0				116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	Ni alloy	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2–6	2–6	-

14431 - 14432 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤ 2xD | HSS-E OX | VA | Uni

ATORN®

Design
- Vaporised
- For minimised wear
- Improved coolant transport

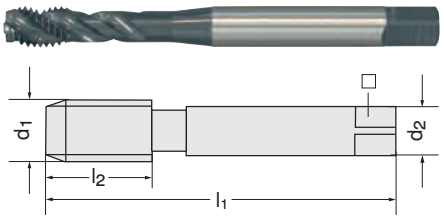
Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

Note:
Outstanding value for money.
High profitability.

14431
M 2–M 10, DIN 371.

14432
M 3–M 36, DIN 376.

14431



DIN 371

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14431	...
M 2	1.60	0.40	8	45	2.8 x 2.1		101
M 2.5	2.05	0.45	9	50	2.8 x 2.1		102
M 3	2.50	0.50	5	56	3.5 x 2.7		103
M 3.5	2.90	0.60	6	56	4.0 x 3.0		104
M 4	3.30	0.70	7	63	4.5 x 3.4		105
M 5	4.20	0.80	8	70	6.0 x 4.9		106
M 6	5.00	1.00	10	80	6.0 x 4.9		107
M 8	6.80	1.25	13	90	8.0 x 6.2		108
M 10	8.50	1.50	15	100	10.0 x 8.0		109

DIN 376

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14432	...
M 3	2.50	0.50	5	56	2.2 x -		103
M 4	3.30	0.70	7	63	2.8 x 2.1		105
M 5	4.20	0.80	8	70	3.5 x 2.7		106
M 6	5.00	1.00	10	80	4.5 x 3.4		107
M 8	6.80	1.25	13	90	6.0 x 4.9		108
M 10	8.50	1.50	15	100	7.0 x 5.5		109
M 12	10.20	1.75	18	110	9.0 x 7.0		110
M 14	12.00	2.00	20	110	11.0 x 9.0		111
M 16	14.00	2.00	20	110	12.0 x 9.0		112
M 18	15.50	2.50	25	125	14.0 x 11.0		113
M 20	17.50	2.50	25	140	16.0 x 12.0		114
M 22	19.50	2.50	25	140	18.0 x 14.5		115
M 24	21.00	3.00	30	160	18.0 x 14.5		116
M 27	24.00	3.00	30	160	20.0 x 16.0		117
M 30	26.50	3.50	35	180	22.0 x 18.0		118
M 33	29.50	3.50	35	180	25.0 x 20.0		119
M 36	32.00	4.00	40	200	28.0 x 22.0		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	5–12	2–8	-	-	-	-	-	5–12	5–12	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14433 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 45° | 2-3 C | ≤ 3xD | HSS-E OX | VA | Uni

ATORN®

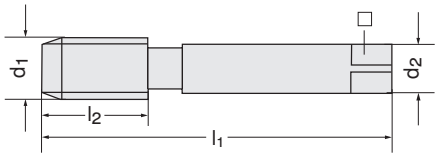
Design
- Vaporised
- For minimised wear
- Improved coolant transport

Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
Suitable for blind holes up to 3xD.
All-rounder for universal machining.
Also very well suited to the machining of VA.

Note:
Outstanding value for money.
High profitability.

14433



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14433 ...	DIN 376 14433 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	099 NEW	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	100 NEW	
M 3	2.50	0.50	5	56	3.5 x 2.7	101	
M 4	3.30	0.70	7	63	4.5 x 3.4	102	
M 5	4.20	0.80	8	70	6.0 x 4.9	103	
M 6	5.00	1.00	10	80	6.0 x 4.9	104	
M 8	6.80	1.25	13	90	8.0 x 6.2	105	
M 10	8.50	1.50	15	100	10.0 x 8.0	106	
M 12	10.20	1.75	18	110	9.0 x 7.0		107
M 14	12.00	2.00	20	110	11.0 x 9.0		110 NEW
M 16	14.00	2.00	20	110	12.0 x 9.0		108
M 18	15.50	2.50	25	125	14.0 x 11.0		111 NEW
M 20	17.50	2.50	25	140	16.0 x 12.0		109
M 22	19.50	2.50	25	140	18.0 x 14.5		112 NEW
M 24	21.00	3.00	30	160	18.0 x 14.5		113 NEW
M 27	24.00	3.00	30	160	20.0 x 16.0		114 NEW
M 30	26.50	3.50	35	180	22.0 x 18.0		115 NEW
M 33	29.50	3.50	35	180	25.0 x 20.0		116 NEW
M 36	32.00	4.00	40	200	28.0 x 22.0		117 NEW

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	5–12	2–8	-	-	-	-	-	5–12	5–12	-	-	-

Blind-hole screw tap

14455 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤2,5xD | Uni

ATORN®

Spiral-fluted.
Up to M10 DIN 371.
From M 12 DIN 376.
Applications
Special geometry for universal use.

14455 098-130
Quality
HSS-E, vaporised.

14455 203-220
Quality
HSS-E/TiN-coated.

14455 300

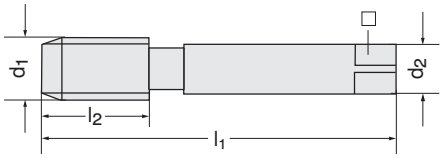
HSS-E

HSS-E

HSS-E TiN

14455 098-130

14455 203-220



Set contents		Vaporised 14455	...
7 pieces	M 3 - M 12		300

d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x 凵 mm	DIN	Vaporised 14455	...	HSS-E/TiN 14455	...
M 2	1.60	0.40	8	45	2.8 x 2.1	371		098		
M 2.3	1.90	0.40	8	45	2.8 x 2.1	371		100		
M 2.5	2.05	0.45	9	50	2.8 x 2.1	371		101		
M 3	2.50	0.50	6	56	3.5 x 2.7	371		103		203
M 4	3.30	0.70	7	63	4.5 x 3.4	371		104		204
M 5	4.20	0.80	8	70	6.0 x 4.9	371		105		205
M 6	5.00	1.00	10	80	6.0 x 4.9	371		106		206
M 8	6.80	1.25	13	90	8.0 x 6.2	371		108		208
M 10	8.50	1.50	15	100	10.0 x 8.0	371		110		210
M 12	10.25	1.75	18	110	9.0 x 7.0	376		112		212
M 16	14.00	2.00	20	110	12.0 x 9.0	376		116		216
M 20	17.50	2.5	25	140	16.0 x 12.0	376		120		220
M 24	21.00	3.00	30	110	18.0 x 14.5	376		124		
M 27	24.00	3.00	30	110	20.0 x 16.0	376		127		
M 30	26.50	3.50	30	125	22.0 x 18.0	376		130		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14455 098-130 + 300																	
10–15	-	10–15	5–15	5–15	5–15	5–15	-	-	-	-	-	-	4–6	4–6	-	5–8	-
14455 203-220																	
10-20	-	10–20	10–20	10–20	5–20	5–20	-	-	-	-	-	-	5–8	5–8	-	8–12	-

14450 Blind-hole screw tap Uni

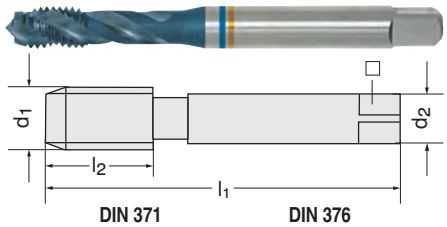
M | 6H | DIN 371 | DIN 376 | ≈ 45° | 2-3 C | ≤2,5xD | HSS-E-PM TiCN | Uni

ATORN®

Design
Extra-robust PM screw taps with 45° spiral.
Up to M 10 DIN 371.
From M 12 DIN 376.
Applications
For **universal use,** for example, in VA, case-hardening, heat-treated and tool steel, aluminium, copper and cast metal.

Note:
Outstanding value for money.
Maximum profitability.

14450



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x 凵 mm	DIN 371 14450	...	DIN 376 14450	...
M 3	2.50	0.50	6	56	3.5 x 2.7		101		
M 4	3.30	0.70	7	63	4.5 x 3.4		102		
M 5	4.20	0.80	8	70	6.0 x 4.9		103		
M 6	5.00	1.00	10	80	6.0 x 4.9		104		
M 8	6.80	1.25	13	90	8.0 x 6.2		106		
M 10	8.50	1.50	15	100	10.0 x 8.0		108		
M 12	10.20	1.75	18	110	9.0 x 7.0				110
M 16	14.00	2.00	20	110	12.0 x 9.0				112

Al<10% Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–25	5–20	5–12	4–10	2–8	-	-	-	-	-	8–20	8–20	-	-	-

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14453 Blind-hole screw tap Unimaxx

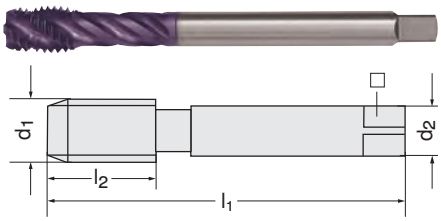
M | 6HX | DIN 371 | DIN 376 | ≈ 50° | 2-3 C | ≤ 3xD | HSS-E-PM HARDLUBE | Uni

UNIMAXX

Design
HSS-E-PM steel and HARDLUBE coating for particularly high wear resistance and minimised surface friction.
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
50% higher cutting values and service life possible.
All-rounder suitable for a wide variety of materials.
Excellent value for money, higher profitability.

14453



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14453 ...	DIN 376 14453 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	099	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	100	
M 3	2.50	0.50	5	56	3.5 x 2.7	101	
M 4	3.30	0.70	7	63	4.5 x 3.4	102	
M 5	4.20	0.80	8	70	6.0 x 4.9	103	
M 6	5.00	1.00	10	80	6.0 x 4.9	104	
M 8	6.80	1.25	13	90	8.0 x 6.2	106	
M 10	8.50	1.50	15	100	10.0 x 8.0	108	
M 12	10.20	1.75	18	110	9.0 x 7.0		110
M 16	14.00	2.00	20	110	12.0 x 9.0		112
M 20	17.50	2.50	25	140	16.0 x 12.0		114
M 24	21.00	3.00	30	160	18.0 x 14.5		116
M 27	24.00	3.00	30	160	20.0 x 16.0		117
M 30	26.50	3.50	35	180	22.0 x 18.0		118

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–50	10–40	15–50	15–40	15–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

14456 Blind-hole screw tap

M | 6HX | DIN 371 | DIN 376 | ≈ 50° | 2-3 C | ≤ 3xD | PM HARDLUBE | VA | Uni

ATORN®

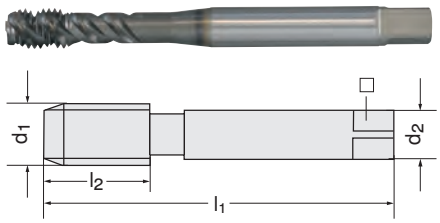
Design
- Powder-metallurgical steel (PM) with HARDLUBE coating
- High edge stability for particularly high wear resistance and minimised surface friction

Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

Note:
Outstanding value for money.
Maximum profitability.

14456



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN 371 14456 ...	DIN 376 14456 ...
M 2	1.60	0.40	8	45	2.8 x 2.1	101	
M 2.5	2.05	0.45	9	50	2.8 x 2.1	102	
M 3	2.50	0.50	5	56	3.5 x 2.7	103	
M 4	3.30	0.70	7	63	4.5 x 3.4	104	
M 5	4.20	0.80	8	70	6.0 x 4.9	105	
M 6	5.00	1.00	10	80	6.0 x 4.9	106	
M 8	6.80	1.25	13	90	8.0 x 6.2	107	
M 10	8.50	1.50	15	100	10.0 x 8.0	108	
M 12	10.20	1.75	18	110	9.0 x 7.0		109
M 14	12.00	2.00	20	110	11.0 x 9.0		110
M 16	14.00	2.00	20	110	12.0 x 9.0		111
M 20	17.50	2.50	25	140	16.0 x 12.0		112
M 24	21.00	3.00	30	160	18.0 x 14.5		113
M 27	24.00	3.00	30	160	20.0 x 16.0		114
M 30	26.50	3.50	35	180	22.0 x 18.0		115

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–50	10–40	15–50	15–40	15–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

Blind-hole screw tap

14457 - 14458 Blind-hole screw tap

M | DIN 371 | DIN 376 | ≈ 50° | 2-3 C | ≤ 3xD | PM HARDLUBE | VA | Uni

ATORN®

Design
- Powder-metallurgical steel (PM) with HARDLUBE coating
- High edge stability for particularly high wear resistance and minimised surface friction

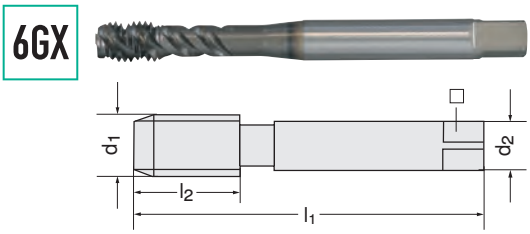
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

Note:
Outstanding value for money.
Maximum profitability.

14457

14458



							6HX with internal cooling supply		6GX	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN	14457	...	14458	...
M 3	2.50	0.50	11	56	3.5 x 2.7	371				101
M 4	3.30	0.70	13	63	4.5 x 3.4	371				102
M 5	4.20	0.80	16	70	6.0 x 4.9	371				103
M 6	5.00	1.00	19	80	6.0 x 4.9	371		104		104
M 8	6.80	1.25	22	90	8.0 x 6.2	371		105		105
M 10	8.50	1.50	24	100	10.0 x 8.0	371		106		106
M 12	10.20	1.75	28	110	9.0 x 7.0	376		107		107
M 16	14.00	2.00	32	110	12.0 x 9.0	376		108		108
M 20	17.50	2.50	34	140	16.0 x 12.0	376		109		109

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–50	10–40	15–50	15–40	15–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

14467 Blind-hole screw tap Uni

M | 6HX | DIN 371 | DIN 376 | ≈ 45° | 2-3 C | ≤ 2xD | PM TiCN | Uni

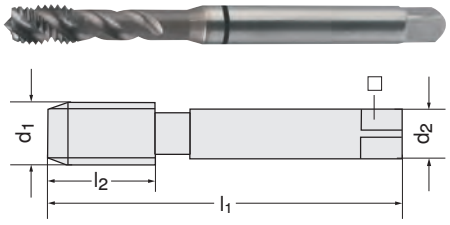
ATORN®

Design
Spiral-fluted.
Up to M 10 DIN 371.
From M 12 DIN 376.

Applications
Synchro tool for CNC machines (clamp rigidly or with minimal length compensation).

Note:
Synchro chuck, see art. no. 21453, 21457 and 21837. Suitable inserts, see art. no. 21465–21466.

14467



						DIN 371		DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14467	...	14467	...
M 3	2.50	0.50	5	56	3.5 x 2.7		103		
M 4	3.30	0.70	6	63	4.5 x 3.4		104		
M 5	4.20	0.80	7	70	6.0 x 4.9		105		
M 6	5.00	1.00	8	80	6.0 x 4.9		106		
M 8	6.80	1.25	10	90	8.0 x 6.2		108		
M 10	8.50	1.50	12	100	10.0 x 8.0		110		
M 12	10.20	1.75	18	110	9.0 x 7.0				112
M 16	14.00	2.00	20	110	12.0 x 9.0				116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–30	-	10–25	15–35	15–30	15–30	10–25	5–15	2–10	-	-	-	-	5–15	5–15	-	10–15	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14422 Blind-hole screw tap SGSP (PM)

M | 6H | DIN 371 | DIN 376 | 2-3 C | ≈ 45° | NEW | HSS PM-SG | ≤ 3xD | Uni

NACHI

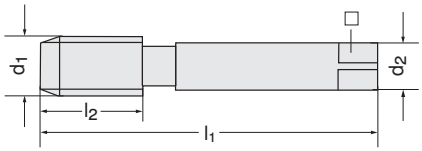
Design
- Metric thread
- Blind hole thread
- Right cutting
- Spiral-fluted 45°
- Up to M 10 DIN 371
- From M 12 DIN 376

Note:
Screw tap for the most demanding applications.
For a long service life and process reliability!

Applications
For universal use.

Quality
High-quality HSS-PM with SG coating (TiCN multi-layer coating).

14422



								HSS-PM-SG	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	Z	DIN	14422	...
M 3	2.50	0.50	5.6	56	3.5 x 2.7	3	371		005
M 4	3.30	0.70	8.1	63	4.5 x 3.4	3	371		006
M 5	4.20	0.80	9.4	70	6.0 x 4.9	3	371		007
M 6	5.00	1.00	12.0	80	6.0 x 4.9	3	371		008
M 8	6.80	1.25	15.4	90	8.0 x 6.2	3	371		009
M 10	8.50	1.50	18.9	100	10.0 x 8.0	3	371		010
M 12	10.20	1.75	22.4	110	9.0 x 7.0	3	376		011
M 14	12.00	2.00	25.9	110	11.0 x 9.0	3	376		012
M 16	14.00	2.00	25.9	110	12.0 x 9.0	3	376		013
M 18	15.50	2.50	32.6	125	14.0 x 11.0	4	376		014
M 20	17.50	2.50	32.6	140	16.0 x 12.0	4	376		015
M 22	19.50	2.50	32.6	140	18.0 x 14.5	4	376		016
M 24	21.00	3.00	38.8	160	18.0 x 14.5	4	376		017

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–50	15–20	6–15	15–30	15–30	8–30	8–30	8–30	5–20	-	-	-	-	5–10	5–10	-	10–30	-

14466 Blind-hole screw tap Synchro

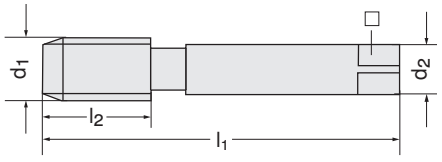
M | 6HX | DIN 371 | DIN 376 | ≈ 50° | 2-3 C | ≤2,5xD | HSS-E-PM TiCN | Uni

HW

Design
Extra-robust PM screw taps **with h6 shank for shrinking and with clamping surface** for fitting in the surface chuck. Special geometry for **universal use** on machines with **synchronised spindle drive.**
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
The emulsion ratio should be min. 8%.
To increase the service life of the screw tap, we recommend the use of the Synchro tapping chuck (see art. no. 21449 ff.).

14466



						DIN 371		DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	14466	...	14466	...
M 2	1.60	0.40	4	70	6.0 x 4.9		101		
M 2.5	2.05	0.45	5	70	6.0 x 4.9		102		
M 3	2.50	0.50	5	70	6.0 x 4.9		103		
M 4	3.30	0.70	7	70	6.0 x 4.9		104		
M 5	4.20	0.80	8	70	6.0 x 4.9		105		
M 6	5.00	1.00	10	80	6.0 x 4.9		106		
M 8	6.80	1.25	13	90	8.0 x 6.2		108		
M 10	8.50	1.50	15	100	10.0 x 8.0		110		
M 12	10.20	1.75	18	110	12.0 x 9.0				112
M 14	12.00	2.00	20	110	14.0 x 11.0				114
M 16	14.00	2.00	20	110	16.0 x 12.0				116
M 20	17.50	2.50	25	140	16.0 x 12.0				120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
60–80	40–50	25–70	50–60	40–50	30–40	20–30	20–30	20–30	-	-	-	-	10–20	10–20	10–25	-	40–50

Blind-hole screw tap

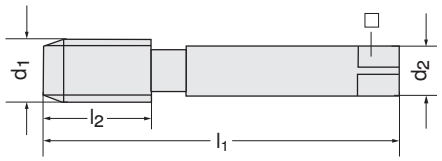
14454 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤2,5xD | HSS-E PM | ≤ 1400 N/mm²

ATORN®

Design
HSS-E-PM screw taps for increased service life.
Shortened threaded part, larger radial relief, narrow blades.
Up to M 10 DIN 371.
From M 12 DIN 376.
Applications
For steels **up to 1400 N/mm².**

14454



						DIN 371		DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14454	...	14454	...
M 3	2.50	0.50	6	56	3.5 x 2.7		103		
M 4	3.30	0.70	7	63	4.5 x 3.4		104		
M 5	4.20	0.80	8	70	6.0 x 4.9		105		
M 6	5.00	1.00	10	80	6.0 x 4.9		106		
M 8	6.80	1.25	13	90	8.0 x 6.2		108		
M 10	8.50	1.50	15	100	10.0 x 8.0		110		
M 12	10.20	1.75	18	110	9.0 x 7.0				112
M 14	12.00	2.00	20	110	11.0 x 9.0				114
M 16	14.00	2.00	20	110	12.0 x 9.0				116
M 20	17.50	2.50	25	140	16.0 x 12.0				120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	4–10	2–8	2–5	-	-	-	-	-	-	-	-	-

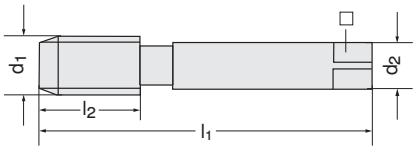
14462 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤2,5xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
With extra-long shank.
With minimal radial relief.
Up to M 10 DIN 371.
From M 12 DIN 376.
Applications
Very well suited for thread cutting in hard-to-reach places.

14462



						DIN 371		DIN 376	
d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14462	...	14462	...
M 3	2.50	0.50	6	112	3.5 x 2.7		103		
M 4	3.30	0.70	7	126	4.5 x 3.4		104		
M 5	4.20	0.80	8	140	6.0 x 4.9		105		
M 6	5.00	1.00	10	160	6.0 x 4.9		106		
M 8	6.80	1.25	13	180	8.0 x 6.2		108		
M 10	8.50	1.50	15	200	10.0 x 8.0		110		
M 12	10.20	1.75	18	220	9.0 x 7.0				112
M 14	12.00	2.00	20	220	9.0 x 7.0				114
M 16	14.00	2.00	20	220	12.0 x 9.0				116
M 20	17.50	2.50	25	280	16.0 x 12.0				120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14459 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 39° | 2-3 C | ≤2,5xD | HSS-E | ≤ 900 N/mm²

EMUGE

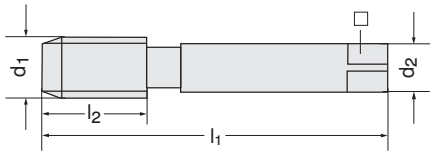
Design
With extra-long shank.
Up to M 5 DIN 371.
From M 6 DIN 376.
Applications
Very well suited for thread cutting in hard-to-reach places.

Note:
Screw tap deviating from the ATORN colour system (yellow ring: here for low-alloy steels).

14459 201-203
1-Enorm-LS.

14459 204-209
2-Enorm-LS.

14459



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14459	DIN 371 ...	DIN 376 14459	DIN 376 ...
M 3	2.50	0.50	6	100	3.5 x 2.7		201		
M 4	3.30	0.70	7	125	4.5 x 3.4		202		
M 5	4.20	0.80	8	140	6.0 x 4.9		203		
M 6	5.00	1.00	10	160	4.5 x 3.4				204
M 8	6.80	1.25	14	180	6.0 x 4.9				205
M 10	8.50	1.50	16	200	7.0 x 5.5				206
M 12	10.20	1.75	18	224	9.0 x 7.0				207
M 16	14.00	2.00	22	224	12.0 x 9.0				208
M 20	17.50	2.50	25	280	16.0 x 12.0				209

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–25	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-

14463 Blind-hole screw tap

M | 6H | DIN 371 | DIN 376 | ≈ 45° | 2-3 C | ≤2,5xD | ALU

ATORN®

Design
- With strong spiral point and larger chip space
- Up to M 10 DIN 371
- From M 12 DIN 376

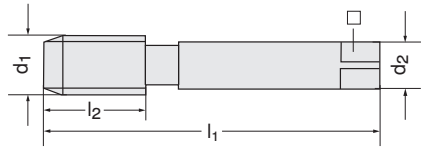
Applications
For through-hole threads in long-chipping non-ferrous metals.

HSS-E

14463 102-112

HSS-E-PM CrN

14463 203-216



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN	HSS-E/polished 14463	HSS-E/polished ...	HSS-E/PM-CrN 14463	HSS-E/PM-CrN ...
M 2	1.60	0.40	8	45	2.8 x 2.1	371		102		
M 3	2.50	0.50	10	56	3.5 x 2.7	371		103		203
M 4	3.30	0.70	12	63	4.5 x 3.4	371		104		204
M 5	4.20	0.80	14	70	6.0 x 4.9	371		105		205
M 6	5.00	1.00	16	80	6.0 x 4.9	371		106		206
M 8	6.80	1.25	18	90	8.0 x 6.2	371		108		208
M 10	8.50	1.50	20	100	10.0 x 8.0	371		110		210
M 12	10.20	1.75	22	110	9.0 x 7.0	376		112		212
M 16	14.00	2.00	28	110	12.0 x 9.0	376				216

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	-	-	-	-	-	-	-	-	-	-	-	-	-	20–30

Blind-hole screw taps | Combi screw taps | Through-hole screw taps

14473 Blind-hole screw tap, left cutting

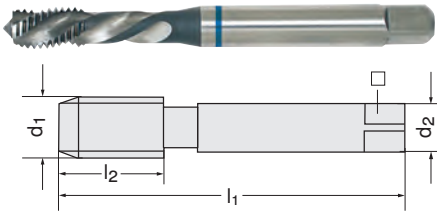
M | 6H | DIN 371 | DIN 376 | ≈ 40° | 2-3 C | ≤2,5xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
Up to M 10 DIN 371.
From M 12 DIN 376.

Note:
Strong backwards chip transport especially suitable for long-chipping materials but also for steel materials.

14473



d_1	Core hole Ø mm	Pitch mm	l_2 mm	l_1 mm	d_2 x □ mm	DIN 371 14473	DIN 371 ...	DIN 376 14473	DIN 376 ...
M 3	2.50	0.50	6	56	3.5 x 2.7		103		
M 4	3.30	0.70	7	63	4.5 x 3.4		104		
M 5	4.20	0.80	8	70	6.0 x 4.9		105		
M 6	5.00	1.00	10	80	6.0 x 4.9		106		
M 8	6.80	1.25	13	90	8.0 x 6.2		108		
M 10	8.50	1.50	15	100	10.0 x 8.0		110		
M 12	10.20	1.75	18	110	9.0 x 7.0				112
M 16	14.00	2.00	20	110	12.0 x 9.0				116
M 20	17.50	2.50	25	140	16.0 x 12.0				120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

14468 - 14469 Combi screw taps

M | HSS | ≤ 600 N/mm²

Design
With 1/4-inch-bit hexagonal shank in accordance with DIN 3126.

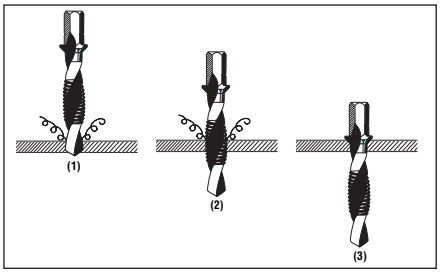
Applications
For core hole drilling **(1),** thread cutting and deburring **(2) (3)** in a single action.
For steel and non-ferrous metals up to 1 x nominal diameter.

Note:
Select speeds in accordance with the cutting speeds of the individual tool.

Set		HSS 14468	...
Set contents			
7 pieces	M 3 - M 10		101

14468
7 pieces in set.
Contents: 1 piece each of: M 3/M 4/M 5/M 6/M 8/M 10 and 1 bit universal holder in box.

14469
Combi screw tap, individual.



14468

14469

individual Nominal Ø	Pitch mm	Twist drill Ø mm	Total length mm	Rotation speed max. rpm	HSS 14469	...
M 3	0.50	2.5	36	1600		101
M 4	0.70	3.3	39	1200		102
M 5	0.80	4.2	41	950		103
M 6	1.00	5.0	44	800		104
M 8	1.25	6.8	50	600		105
M 10	1.50	8.5	59	450		106

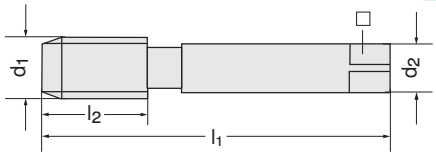
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14498 Through-hole screw tap

MF | 6H | DIN 374 | 2-3 C | ≤2,5xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
Without spiral point.



14498

HSS-E

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	...
M 3 x 0.35	2.65	6	56	2.2 x -	101
M 4 x 0.50	3.50	8	63	2.8 x 2.1	103
M 5 x 0.50	4.50	9	70	3.5 x 2.7	104
M 6 x 0.75	5.20	12	80	4.5 x 3.4	106
M 8 x 0.75	7.20	14	80	6.0 x 4.9	108
M 8 x 1.00	7.00	16	90	6.0 x 4.9	109
M 10 x 1.00	9.00	16	90	7.0 x 5.5	112
M 10 x 1.25	8.80	20	100	7.0 x 5.5	113
M 12 x 0.75	11.20	22	100	9.0 x 7.0	114
M 12 x 1.00	11.00	16	100	9.0 x 7.0	115
M 12 x 1.25	10.80	22	100	9.0 x 7.0	116
M 12 x 1.50	10.50	22	110	9.0 x 7.0	117
M 14 x 1.00	13.00	22	100	11.0 x 9.0	118
M 14 x 1.25	12.80	22	100	11.0 x 9.0	119
M 14 x 1.50	12.50	22	100	11.0 x 9.0	120
M 15 x 1.00	14.00	22	100	12.0 x 9.0	121

HSS-E

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14498	...
M 16 x 1.50	14.50	22	100	12.0 x 9.0		124
M 18 x 1.00	17.00	25	110	14.0 x 11.0		125
M 18 x 1.50	16.50	25	110	14.0 x 11.0		126
M 20 x 1.00	19.00	18	125	16.0 x 12.0		128
M 20 x 2.00	18.00	32	140	16.0 x 12.0		130
M 22 x 1.50	20.50	25	125	18.0 x 14.5		132
M 24 x 1.50	22.50	25	125	18.0 x 14.5		135
M 24 x 2.00	22.00	28	140	18.0 x 14.5		136
M 26 x 1.00	25.00	28	140	18.0 x 14.5		137
M 27 x 1.50	25.50	28	140	20.0 x 16.0		138
M 27 x 2.00	25.00	28	140	20.0 x 16.0		139
M 30 x 1.00	29.00	28	150	22.0 x 18.0		141
M 30 x 1.50	28.50	28	150	22.0 x 18.0		142
M 30 x 2.00	28.00	28	150	22.0 x 18.0		143
M 33 x 1.50	31.50	28	160	25.0 x 20.0		145

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

14499 - 14500 Through-hole screw tap

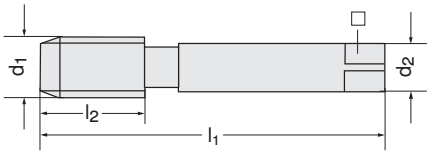
MF | 6H | DIN 374 | 3,5-5 B | ≤ 3xD | ≤ 800 N/mm²

ATORN®

Design
With spiral point for strong chip transport forwards.

14499
Applications
For steels **up to 800 N/mm².**

14500
Applications
Low build-up of material deposits thanks to the TiN coating.



HSS-E

14499

HSS-E TiN

14500

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	HSS-E 14499	...	HSS-E/TiN 14500	...
M 4 x 0.50	3.50	8	63	2.8 x 2.1		103		103
M 5 x 0.50	4.50	9	70	3.5 x 2.7		104		104
M 6 x 0.75	5.20	12	80	4.5 x 3.4		106		106
M 8 x 0.75	7.20	14	80	6.0 x 4.9		108		108
M 8 x 1.00	7.00	16	90	6.0 x 4.9		109		109
M 10 x 0.75	8.20	16	90	7.0 x 5.5		111		111
M 10 x 1.00	9.00	16	90	7.0 x 5.5		112		112
M 10 x 1.25	8.80	20	100	7.0 x 5.5		113		113
M 12 x 1.00	11.00	16	100	9.0 x 7.0		115		115
M 12 x 1.25	10.80	22	100	9.0 x 7.0		116		116
M 12 x 1.50	10.50	22	100	9.0 x 7.0		117		117
M 14 x 1.00	13.00	22	100	11.0 x 9.0		118		118
M 14 x 1.50	12.50	22	100	11.0 x 9.0		120		120
M 16 x 1.00	15.00	22	100	12.0 x 9.0		123		123
M 16 x 1.50	14.50	22	100	12.0 x 9.0		124		124
M 18 x 1.00	17.00	25	100	14.0 x 11.0		125		125
M 18 x 1.50	16.50	25	110	14.0 x 11.0		126		126
M 20 x 1.00	19.00	25	125	16.0 x 12.0		128		128
M 20 x 1.50	18.50	25	125	16.0 x 12.0		129		129
M 22 x 1.50	20.50	25	125	18.0 x 14.5		132		132
M 24 x 1.50	22.50	25	140	18.0 x 14.5		135		135

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

Blind-hole screw taps | Machine taps

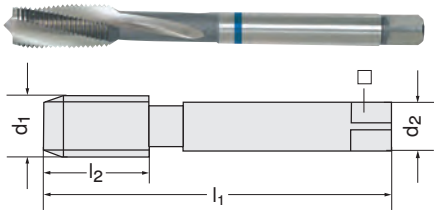
14507 Blind-hole screw tap

MF | 6H | DIN 374 | ≈ 15° | 2-3 C | ≤2,5xD | HSS-E | ≤ 800 N/mm²

ATORN®

Applications
For light chip transport backwards.

14507



d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	HSS-E 14507	...
M 5 x 0.50	4.50	9	70	6.0 x 4.9		104
M 6 x 0.75	5.20	12	80	6.0 x 4.9		106
M 7 x 0.75	6.20	14	80	7.0 x 5.5		107
M 8 x 0.75	7.20	14	80	6.0 x 4.9		108
M 8 x 1.00	7.00	16	90	6.0 x 4.9		109
M 10 x 1.00	9.00	16	90	7.0 x 5.5		112
M 10 x 1.25	8.80	20	100	7.0 x 5.5		113
M 12 x 1.00	11.00	16	100	9.0 x 7.0		115
M 12 x 1.25	10.80	22	100	9.0 x 7.0		116
M 12 x 1.50	10.50	22	110	9.0 x 7.0		117
M 14 x 1.00	13.00	16	100	11.0 x 9.0		118
M 14 x 1.50	12.50	22	100	11.0 x 9.0		120
M 16 x 1.00	15.00	22	100	12.0 x 9.0		123

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	HSS-E 14507	...
M 16 x 1.50	14.50	22	100	12.0 x 9.0		124
M 18 x 1.50	16.50	25	110	14.0 x 11.0		126
M 20 x 1.50	18.50	25	125	16.0 x 12.0		129
M 22 x 1.00	21.00	25	125	18.0 x 14.5		131
M 22 x 1.50	20.50	25	125	18.0 x 14.5		132
M 24 x 1.50	22.50	25	140	18.0 x 14.5		135
M 24 x 2.00	22.00	25	140	18.0 x 14.5		136
M 26 x 1.50	24.50	28	140	18.0 x 14.5		137
M 27 x 1.50	25.50	28	140	20.0 x 16.0		138
M 27 x 2.00	25.00	28	140	20.0 x 16.0		139
M 28 x 1.50	26.50	28	140	20.0 x 16.0		140
M 30 x 1.50	28.50	28	150	22.0 x 18.0		142
M 30 x 2.00	28.00	28	150	22.0 x 18.0		143

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

14508 - 14509 Blind-hole screw tap

MF | 6H | DIN 374 | ≈ 40° | 2-3 C | ≤2,5xD | ≤ 800 N/mm²

ATORN®

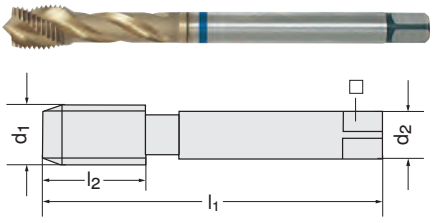
Design
Minimum thread radial relief.
Applications
Strong chip transport backwards.

HSS-E

14508

HSS-E TiN

14509



d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	HSS-E 14508	...	HSS-E/TiN 14509	...
M 6 x 0.75	5.20	12	80	4.5 x 3.4		106		106
M 8 x 1.00	7.00	16	90	6.0 x 4.9		109		109
M 10 x 1.00	9.00	16	90	7.0 x 5.5		112		112
M 10 x 1.25	8.80	20	100	7.0 x 5.5		113		113
M 12 x 1.25	10.80	22	100	9.0 x 7.0		116		116
M 12 x 1.50	10.50	22	100	9.0 x 7.0		117		117
M 14 x 1.50	12.50	22	100	11.0 x 9.0		120		120
M 16 x 1.50	14.50	22	100	12.0 x 9.0		124		124
M 18 x 1.50	16.50	25	100	14.0 x 11.0		126		126
M 20 x 1.50	18.50	25	125	16.0 x 12.0		129		129

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14501 - 14504 Machine tap

MF | 6H | DIN 374 | HSS-E | ≤ 800 N/mm²

14501

Design
With spiral point. Up to and including M 32 x 1.5 notch shape B. In addition, notch shape C.
Applications
For through-hole thread.

14502

Design
40° right-hand spiral with notch shape C.
Applications
For blind-hole thread.

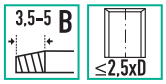
14504

Design
With spiral point, notch shape B.
Applications
For through-hole thread.

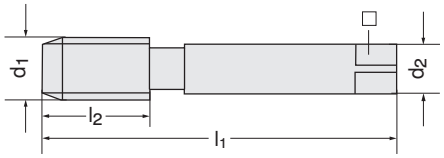
Note:
Cost-effective design.

14501

14502



14504



		14501 + 14504	14502			straight/B+C		40°/C		straight/B	
d_1 x pitch	Core hole Ø mm	l_2 mm	l_2 mm	l_1 mm	d_2 x □ mm	14501	...	14502	...	14504	...
M 3 x 0.35	2.65	8	4	56	2.2 x –		101		101		
M 4 x 0.50	3.50	10	6	63	2.8 x 2.1		103				
M 5 x 0.50	4.50	12	7	70	3.5 x 2.7		104		104		104
M 6 x 0.50	5.50	14	8	80	4.5 x 3.4		105				
M 6 x 0.75	5.25	14	8	80	4.5 x 3.4		106		106		106
M 7 x 0.75	6.25	14	–	80	5.5 x 4.3		107				
M 8 x 0.75	7.25	18	10	80	6.0 x 4.9		108		108		108
M 8 x 1.00	7.00	22	10	90	6.0 x 4.9		109		109		109
M 9 x 1.00	8.00	22	–	90	7.0 x 5.5		110				
M 10 x 0.75	9.25	20	–	90	7.0 x 5.5		111				
M 10 x 1.00	9.00	20	12	90	7.0 x 5.5		112		112		112
M 10 x 1.25	8.75	24	12	100	7.0 x 5.5		113		113		113
M 11 x 1.00	10.00	20	–	90	8.0 x 6.2		114				
M 12 x 1.00	11.00	22	14	100	9.0 x 7.0		115		115		115
M 12 x 1.25	10.75	22	14	100	9.0 x 7.0		116		116		116
M 12 x 1.50	10.50	22	14	100	9.0 x 7.0		117		117		117
M 14 x 1.00	13.00	22	16	100	11.0 x 9.0		118		118		
M 14 x 1.25	12.75	22	16	100	11.0 x 9.0		119		119		
M 14 x 1.50	12.50	22	16	100	11.0 x 9.0		120		120		120
M 16 x 1.00	15.00	22	16	100	12.0 x 9.0		123		123		
M 16 x 1.50	14.50	22	16	100	12.0 x 9.0		124		124		124
M 18 x 1.00	17.00	25	20	110	14.0 x 11.0		125		125		
M 18 x 1.50	16.50	25	20	110	14.0 x 11.0		126		126		126
M 20 x 1.00	19.00	25	20	125	16.0 x 12.0				128		
M 20 x 1.50	18.50	25	20	125	16.0 x 12.0		129		129		129
M 22 x 1.50	20.50	25	20	125	18.0 x 14.5		132		132		132
M 22 x 2.00	20.00	34	–	140	18.0 x 14.5		133				
M 24 x 1.50	22.50	28	24	140	18.0 x 14.5				135		135
M 24 x 2.00	22.00	28	–	140	18.0 x 14.5		136				
M 25 x 1.50	23.50	–	24	140	18.0 x 14.5				151		
M 26 x 1.50	24.50	28	–	140	18.0 x 14.5		137				
M 27 x 2.00	25.00	28	24	140	20.0 x 16.0				139		
M 28 x 1.50	26.50	28	–	140	20.0 x 16.0		140				
M 30 x 1.50	28.50	28	28	150	22.0 x 18.0		142		142		
M 30 x 2.00	28.00	28	28	150	22.0 x 18.0		143		143		
M 32 x 1.50	30.50	28	–	150	22.0 x 18.0		144				
M 35 x 1.50	33.50	30	–	170	28.0 x 22.0		146				
M 36 x 1.50	34.50	30	–	170	28.0 x 22.0		147				
M 38 x 1.50	36.50	30	–	170	28.0 x 22.0		148				
M 40 x 1.50	38.50	30	–	170	32.0 x 24.0		149				
M 42 x 1.50	40.50	30	–	170	32.0 x 24.0		150				

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
14501+14504																	
15–22	15–18	12–18	8–12	8–12	-	-	-	-	-	-	-	-	-	-	-	-	-
14502																	
12–18	12–15	12–18	8–10	8–10	-	-	-	-	-	-	-	-	-	-	-	-	-

( ) = Items with prices in brackets partly available from stock.

Through-hole screw taps | Blind-hole screw taps

14505 Through-hole screw tap

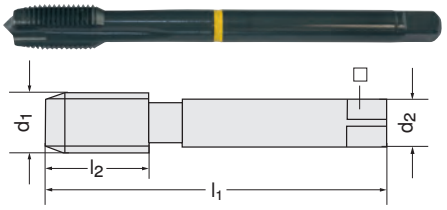
MF | 6H | DIN 374 | 3,5–5 B | ≤ 3xD | HSS-E | ≤ 1200 N/mm²

ATORN®

Design
Reduced build-up of material deposits due to vaporisation.

Note:
Very well suited for machining VA.

14505



d1 x pitch	Core hole Ø mm	l2 mm	l1 mm	d2 x □ mm	Vaporised 14505	...
M 4 x 0.50	3.50	8	63	2.8 x 2.1		101
M 5 x 0.50	4.50	9	70	3.5 x 2.7		102
M 6 x 0.50	5.50	14	80	4.5 x 3.4		103
M 6 x 0.75	5.20	12	80	4.5 x 3.4		104
M 7 x 0.75	6.20	14	80	5.5 x 4.3		105
M 8 x 0.50	7.50	14	80	6.0 x 4.9		106
M 8 x 0.75	7.20	14	80	6.0 x 4.9		107
M 8 x 1.00	7.00	16	90	6.0 x 4.9		108
M 9 x 1.00	8.00	22	90	7.0 x 5.5		109
M 10 x 0.75	9.20	16	90	7.0 x 5.5		110
M 10 x 1.00	9.00	16	90	7.0 x 5.5		111
M 10 x 1.25	8.80	20	100	7.0 x 5.5		112
M 11 x 1.00	10.00	20	90	8.0 x 6.2		113
M 12 x 1.00	11.00	16	100	9.0 x 7.0		114
M 12 x 1.25	10.80	22	100	9.0 x 7.0		115
M 12 x 1.50	10.50	22	100	9.0 x 7.0		116
M 14 x 1.00	13.00	22	100	11.0 x 9.0		117
M 14 x 1.25	12.80	22	100	11.0 x 9.0		118
M 14 x 1.50	12.50	22	100	11.0 x 9.0		119
M 15 x 1.00	14.00	22	100	12.0 x 9.0		120
M 16 x 1.00	15.00	22	100	12.0 x 9.0		122

d1 x pitch	Core hole Ø mm	l2 mm	l1 mm	d2 x □ mm	Vaporised 14505	...
M 16 x 1.50	14.50	22	100	12.0 x 9.0		123
M 18 x 1.00	17.00	25	110	14.0 x 11.0		124
M 18 x 1.50	16.50	25	110	14.0 x 11.0		125
M 20 x 1.00	19.00	25	125	16.0 x 12.0		126
M 20 x 1.50	18.50	25	125	16.0 x 12.0		127
M 20 x 2.00	18.00	32	140	16.0 x 12.0		128
M 22 x 1.00	21.00	25	125	18.0 x 14.5		129
M 22 x 1.50	20.50	25	125	18.0 x 14.5		130
M 24 x 1.00	23.00	25	140	18.0 x 14.5		131
M 24 x 1.50	22.50	25	140	18.0 x 14.5		132
M 24 x 2.00	22.00	28	140	18.0 x 14.5		133
M 26 x 1.50	24.50	28	140	18.0 x 14.5		134
M 30 x 1.50	28.50	28	150	22.0 x 18.0		135
M 30 x 2.00	28.00	28	150	22.0 x 18.0		136
M 33 x 1.50	31.50	28	160	25.0 x 20.0		137
M 33 x 2.00	31.00	28	160	25.0 x 20.0		138
M 35 x 1.50	33.50	30	170	28.0 x 22.0		139
M 36 x 1.50	34.50	30	170	28.0 x 22.0		140
M 36 x 2.00	34.00	30	170	28.0 x 22.0		141
M 38 x 1.50	36.50	30	170	28.0 x 22.0		142
M 42 x 1.50	40.50	30	170	32.0 x 24.0		143

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	5–12	5–12	-	-	-

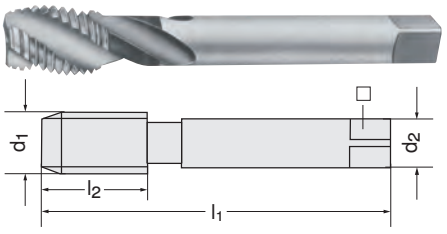
14506 Blind-hole screw tap

MF | 6H | DIN 374 | ≈ 39° | 2–3 C | ≤2,5xD | HSS-E | ≤ 1100 N/mm²

EMUGE

Design
2 Enorm-VA.

14506



d1 x pitch	Core hole Ø mm	l2 mm	l1 mm	d2 x □ mm	HSS-E 14506	...
M 6 x 0.75	5.20	8	80	4.5 x 3.4		101
M 8 x 0.75	7.20	8	80	6.0 x 4.9		102
M 8 x 1.00	7.00	10	90	6.0 x 4.9		103
M 10 x 0.75	9.20	10	90	7.0 x 5.5		104
M 10 x 1.00	9.00	10	90	7.0 x 5.5		105
M 12 x 1.00	11.00	11	100	9.0 x 7.0		106
M 12 x 1.50	10.50	15	100	9.0 x 7.0		107
M 14 x 1.50	12.50	15	100	11.0 x 9.0		108
M 16 x 1.50	14.50	15	100	12.0 x 9.0		109
M 18 x 1.50	16.50	17	110	14.0 x 11.0		110
M 22 x 1.50	20.50	17	125	18.0 x 14.5		111
M 24 x 1.50	22.50	20	140	18.0 x 14.5		112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–25	5–20	5–15	5–12	5–10	-	-	-	-	-	5–15	2–10	-	5–20	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14518 Through-hole screw tap Hyper Z

MF | 6H | DIN 374 | 3.5–5 B | HSS-E | ≤ 2xD

ALU | CU | ≤ 1200 N/mm² | GGG

NACHI

Design
- Metric fine thread
- Through-hole thread
- Right cutting with spiral point

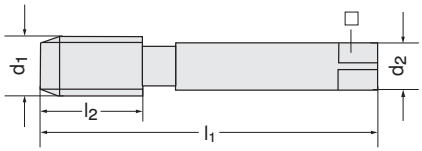
Note:
UNI High Performance screw taps with optimum cutting geometry, long service life and process reliability!

Applications
For steels up to 1200 N/mm².

Quality
HSS-E.

NEW

14518



d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x 凸 mm	Z	DIN	14518	...
M 6 x 0.75	5.20	14	80	6.0 x 3.4	3	374		005
M 8 x 0.75	7.20	14	80	8.0 x 4.9	3	374		006
M 8 x 1.00	7.00	17	90	8.0 x 4.9	3	374		007
M 10 x 1.00	9.00	17	90	10.0 x 5.5	3	374		008
M 10 x 1.25	8.80	22	100	10.0 x 5.5	3	374		009
M 12 x 1.00	11.00	23	100	9.0 x 7.0	3	374		010
M 12 x 1.25	10.80	28	100	9.0 x 7.0	3	374		011
M 12 x 1.50	10.50	32	100	9.0 x 7.0	3	374		012
M 14 x 1.50	12.50	32	100	11.0 x 9.0	4	374		013
M 16 x 1.50	14.50	32	100	12.0 x 9.0	4	374		014
M 18 x 1.50	16.50	37.5	110	14.0 x 11.0	4	374		015
M 20 x 1.50	18.50	37.5	125	16.0 x 12.0	4	374		016

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–25	10–25	15–50	15–50	15–50	15–50	15–50	5–10	-	-	-	-	-	-	-	-	15–30	10–20

14519 Blind-hole screw tap Hyper Z

MF | 6H | DIN 374 | 2–3 C | ≈ 43° | HSS-E | ≤ 2xD

ALU | CU | ≤ 1200 N/mm² | GGG

NACHI

Design
Metric fine thread
- Blind hole thread
- Right cutting
- Spiral-fluted 43°

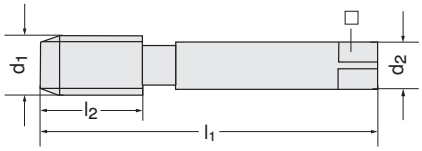
Note:
UNI High Performance screw taps with optimum cutting geometry, long service life and process reliability!

Applications
For steels up to 1200 N/mm².

Quality
HSS-E.

NEW

14519



d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x 凸 mm	Z	DIN	14519	...
M 6 x 0.75	5.20	9.2	80	6.0 x 3.4	3	374		005
M 8 x 0.75	7.20	9.2	90	8.0 x 4.9	3	374		006
M 8 x 1.00	7.00	12.4	90	8.0 x 4.9	3	374		007
M 10 x 1.00	9.00	12.4	90	10.0 x 5.5	3	374		008
M 10 x 1.25	8.80	15.7	100	10.0 x 5.5	3	374		009
M 12 x 1.25	10.80	17.2	100	9.0 x 7.0	3	374		010
M 12 x 1.50	10.50	20.9	100	9.0 x 7.0	3	374		011
M 14 x 1.50	12.50	20.9	100	11.0 x 9.0	3	374		012
M 16 x 1.50	14.50	20.9	100	12.0 x 9.0	3	374		013
M 18 x 1.50	16.50	20.9	110	14.0 x 11.0	4	374		014
M 20 x 1.50	18.50	20.9	125	16.0 x 12.0	4	374		015

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–25	10–25	6–20	15–50	15–50	15–50	15–50	15–50	5–10	-	-	-	-	-	-	-	15–30	10–20

Machine taps | Through-hole screw taps

14516 - 14517 Machine tap

MF | 6H | DIN 374 | HSS-E OX | VA | Uni

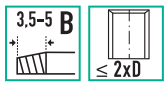
ATORN®

Design
- Vaporised
- For minimal wear
- Improved coolant transport

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

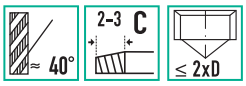
Note:
Outstanding value for money.
High profitability.

14516
Applications
For through-hole thread.

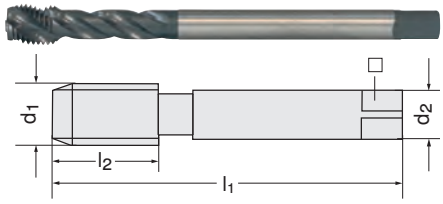


14516

14517
Applications
For blind-hole thread.



14517



		14516	14517			straight		40°	
d_1 x pitch	Core hole Ø mm	l_2 mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14516	...	14517	...
M 3 x 0.35	2.65	8	4	56	2.2 x -		101		101
M 4 x 0.50	3.50	10	6	63	2.8 x 2.1		102		102
M 5 x 0.50	4.50	12	7	70	3.5 x 2.7		103		103
M 6 x 0.50	5.50	14	8	80	4.5 x 3.4		104		104
M 6 x 0.75	5.25	14	8	80	4.5 x 3.4		105		105
M 8 x 0.75	7.25	18	10	80	6.0 x 4.9		106		106
M 8 x 1.00	7.00	22	10	90	6.0 x 4.9		107		107
M 10 x 1.00	9.00	20	12	90	7.0 x 5.5		108		108
M 12 x 1.00	11.00	22	14	100	9.0 x 7.0		109		109
M 12 x 1.50	10.50	22	14	100	9.0 x 7.0		110		110
M 14 x 1.50	12.50	22	16	100	11.0 x 9.0		111		111
M 16 x 1.50	14.50	22	16	100	12.0 x 9.0		112		112
M 18 x 1.50	16.50	25	20	110	14.0 x 11.0		113		113
M 20 x 1.50	18.50	25	20	125	16.0 x 12.0		114		114
M 22 x 1.50	20.50	25	20	125	18.0 x 14.5		115		115
M 24 x 1.50	22.50	28	24	140	18.0 x 14.5		116		116
M 27 x 1.50	25.50	-	24	140	20.0 x 16.0				117
M 30 x 1.50	28.50	-	28	150	22.0 x 18.0				118

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
18–25	10–25	10–15	5–25	5–20	5–15	5–15	5–10	-	-	-	-	-	5–15	5–12	-	-	-

14510 - 14511 Machine tap Unimaxx

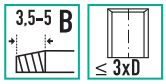
MF | 6HX | DIN 374 | HSS-E-PM HARDLUBE | Uni

UNIMAXX

Design
HSS-E-PM steel and HARDLUBE coating for particularly high wear resistance and minimised surface friction.

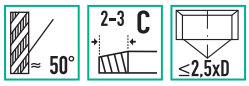
Note:
50% higher cutting values and service life possible.
All-rounder suitable for a wide variety of materials.
Excellent value for money, higher profitability.

14510
Design
With spiral point.
Applications
For through-hole thread.

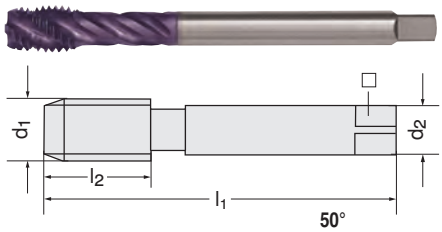


14510

14511
Applications
For blind-hole thread.



14511



					straight		
d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14510	...	
M 8 x 1.00	7.00	22	90	6.0 x 4.9		109	
M 10 x 1.00	9.00	20	90	7.0 x 5.5		112	
M 10 x 1.25	8.80	24	100	7.0 x 5.5		113	
M 12 x 1.00	11.00	22	100	9.0 x 7.0		115	
M 12 x 1.25	10.80	22	100	9.0 x 7.0		116	
M 12 x 1.50	10.50	22	100	9.0 x 7.0		117	
M 14 x 1.50	12.50	22	100	11.0 x 9.0		120	
M 16 x 1.50	14.50	22	100	12.0 x 9.0		124	
M 18 x 1.50	16.50	25	110	14.0 x 11.0		126	
M 20 x 1.50	18.50	25	125	16.0 x 12.0		129	

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	14511	...
M 8 x 1.00	7.00	10	90	6.0 x 4.9		109
M 10 x 1.00	9.00	12	90	7.0 x 5.5		112
M 10 x 1.25	8.80	12	100	7.0 x 5.5		113
M 12 x 1.00	11.00	14	100	9.0 x 7.0		115
M 12 x 1.25	10.80	14	100	9.0 x 7.0		116
M 12 x 1.50	10.50	14	100	9.0 x 7.0		117
M 14 x 1.50	12.50	16	100	11.0 x 9.0		120
M 16 x 1.50	14.50	16	100	12.0 x 9.0		124
M 18 x 1.50	16.50	20	110	14.0 x 11.0		126
M 20 x 1.50	18.50	20	125	16.0 x 12.0		129

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–45	10–45	15–40	10–40	10–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14512 - 14513 Machine tap

MF | 6HX | DIN 374 | PM HARDLUBE | VA | Uni

ATORN®

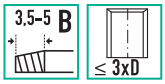
Design
- Powder-metallurgical steel (PM) with HARDLUBE coating
- High edge stability for particularly high wear resistance and minimised surface friction

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

Note:
Outstanding value for money.
Maximum profitability.

14512
Design
- With spiral point

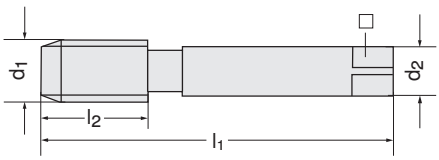
Applications
For through-hole thread.



14512

14513
Applications
For blind-hole thread.

14513



d_1 x pitch	Core hole Ø mm	14512 l_2 mm	14513 l_2 mm	l_1 mm	d_2 x ⏍ mm	straight 14512	...	50° 14513	...
M 8 x 1.00	7.00	22	10	90	6.0 x 4.9		101		101
M 10 x 1.00	9.00	20	12	90	7.0 x 5.5		102		102
M 10 x 1.25	8.80	24	12	100	7.0 x 5.5		103		103
M 12 x 1.00	11.00	22	14	100	9.0 x 7.0		104		104
M 12 x 1.25	10.80	22	14	100	9.0 x 7.0		105		105
M 12 x 1.50	10.50	22	14	100	9.0 x 7.0		106		106
M 14 x 1.50	12.50	22	16	100	11.0 x 9.0		107		107
M 16 x 1.50	14.50	22	16	100	12.0 x 9.0		108		108
M 18 x 1.50	16.50	25	20	110	14.0 x 11.0		109		109
M 20 x 1.50	18.50	25	20	125	16.0 x 12.0		110		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–45	10–45	15–40	10–40	10–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

14513 Through-hole screw tap SGPO (PM)

MF | 6H | DIN 374 | 3,5–5 B | HSS PM-SG | ≤ 3xD | Uni

NACHI

Design
- Metric fine thread
- Through-hole thread
- Right cutting with spiral point

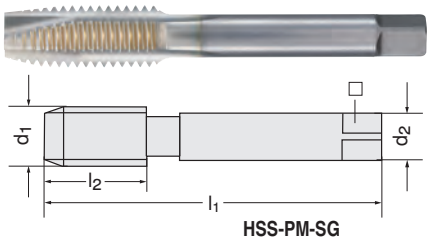
Applications
For universal use.

Quality
High-quality HSS-PM with SG coating (TiCN multi-layer coating)

Note:
Screw tap for the most demanding applications.
For a long service life and process reliability!

NEW

14513



HSS-PM-SG

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⏍ mm	Z	DIN	14513	...
M 6 x 0.75	5.20	14	80	4.5 x 3.4	3	374		005
M 8 x 0.75	7.20	14	80	6.0 x 4.9	3	374		006
M 8 x 1.00	7.00	17	90	6.0 x 4.9	3	374		007
M 10 x 1.00	9.00	17	90	7.0 x 5.5	3	374		008
M 10 x 1.25	8.80	22	100	7.0 x 5.5	3	374		009
M 12 x 1.00	11.00	19	100	9.0 x 7.0	3	374		010
M 12 x 1.25	10.80	22	100	9.0 x 7.0	3	374		011
M 12 x 1.50	10.50	22	100	9.0 x 7.0	3	374		012
M 14 x 1.50	12.50	22	100	11.0 x 9.0	3	374		013
M 16 x 1.50	14.50	22	100	12.0 x 9.0	3	374		014
M 18 x 1.50	16.50	25	110	14.0 x 11.0	3	374		015
M 20 x 1.50	18.50	25	125	16.0 x 12.0	3	374		016

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–50	15–20	6–15	15–30	15–30	8–30	8–30	8–30	5–10	-	-	-	-	5–10	5–10	-	10–30	-

Blind-hole screw taps | Through-hole screw taps

14520 Blind-hole screw tap SGSP (PM)

MF | 6H | DIN 374 | 2-3 C | ≈ 45° | HSS PM-SG | ≤ 3xD | Uni

NEW

NACHI

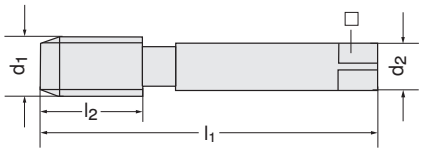
Design
- Metric fine thread
- Blind hole thread
- Right cutting
- Spiral-fluted approx. 45°

Note:
Screw tap for the most demanding applications.
For a long service life and process reliability!

Applications
For universal use.

Quality
High-quality HSS-PM with SG coating (TiCN multi-layer coating).

14520



HSS-PM-SG

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⌑ mm	Z	DIN	14520	...
M 6 x 0.75	5.20	8	80	4.5 x 3.4	3	374		005
M 8 x 0.75	7.20	8	80	6.0 x 4.9	3	374		006
M 8 x 1.00	7.00	10	90	6.0 x 4.9	3	374		007
M 10 x 1.25	8.80	12	100	7.0 x 5.5	3	374		008
M 12 x 1.25	10.80	12	100	9.0 x 7.0	3	374		009
M 12 x 1.50	10.50	14	100	9.0 x 7.0	3	374		010
M 14 x 1.50	12.50	16	100	11.0 x 9.0	3	374		011
M 16 x 1.50	14.50	16	100	12.0 x 9.0	3	374		012
M 18 x 1.50	16.50	16	110	14.0 x 11.0	4	374		013
M 20 x 1.50	18.50	16	125	16.0 x 12.0	4	374		014

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
15–50	15–20	6–15	15–30	15–30	8–30	8–30	8–30	5–10	-	-	-	-	5–10	5–10	-	10–30	-

14514 Through-hole screw tap

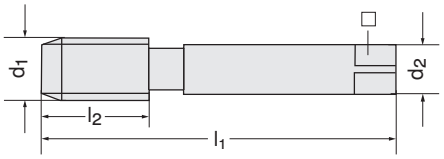
MF | 6HX | DIN 374 | 2-3 C | ≤ 3xD | HSS-E | GG(G)

ATORN®

Design
Nitrided.

Applications
For high machining performance in grey cast iron.

14514



HSS-E nitrided

d_1 x pitch	Core hole Ø mm	l_2 mm	l_1 mm	d_2 x ⌑ mm	14514	...
M 8 x 1.00	7.00	16	90	6.0 x 4.9		109
M 10 x 1.00	9.00	16	90	7.0 x 5.5		112
M 12 x 1.50	8.50	22	100	9.0 x 7.0		117
M 14 x 1.50	12.50	22	100	11.0 x 9.0		120
M 16 x 1.50	14.50	22	100	12.0 x 9.0		124
M 18 x 1.50	16.50	25	110	14.0 x 11.0		126
M 20 x 1.50	18.50	25	125	16.0 x 12.0		129
M 22 x 1.50	20.50	25	125	18.0 x 14.5		132
M 24 x 1.50	22.50	25	140	18.0 x 14.5		135
M 30 x 1.50	28.50	28	150	22.0 x 18.0		142

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	< 45 HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8–20	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

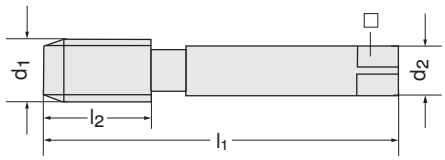
14560 Through-hole screw tap

UNC | DIN 371 | DIN 376 | 3,5–5 B | ≤ 3xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
Up to 3/8 inch DIN 371.
From 7/16 inch DIN 376.

14560



d_1 inch	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x 中 mm	DIN 371 14560 ...	DIN 376 14560 ...
1/4	5.20	20	16	80	7.0 x 5.5	110	
5/16	6.60	18	18	90	8.0 x 6.2	111	
3/8	8.00	16	20	100	9.0 x 7.0	112	
7/16	9.40	14	20	100	8.0 x 6.2		113
1/2	10.80	13	22	110	9.0 x 7.0		114
9/16	12.20	12	24	110	11.0 x 9.0		115
5/8	13.50	11	26	110	12.0 x 9.0		116
3/4	16.50	10	32	140	16.0 x 12.0		117

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-

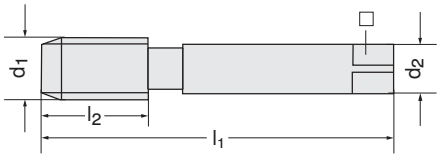
14565 Blind-hole screw tap

UNC | DIN 371 | DIN 376 | ≈ 40° | 3,5–5 B | ≤2,5xD | HSS-E | ≤ 800 N/mm²

ATORN®

Design
Up to 3/8 inch DIN 371.
From 7/16 inch DIN 376.

14565



d_1 inch	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x 中 mm	DIN 371 14565 ...	DIN 376 14565 ...
1/4	5.20	20	16	80	7.0 x 5.5	110	
5/16	6.60	18	18	90	8.0 x 6.2	111	
3/8	8.00	16	20	100	9.0 x 7.0	112	
7/16	9.40	14	20	100	8.0 x 6.2		113
1/2	10.80	13	22	110	9.0 x 7.0		114
9/16	12.20	12	24	110	11.0 x 9.0		115
5/8	13.50	11	26	110	12.0 x 9.0		116
3/4	16.50	10	32	140	16.0 x 12.0		117

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	< 45 HRC	<55HRC	<60HRC	<67HRC	VA < 900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

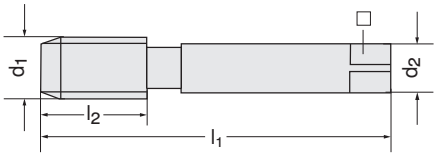
14570 - 14571 Blind-hole screw tap

UNC | DIN 2184-1 | ≈ 40° | 2–3 C | ≤2,5xD | HSS-E | ≤ 800 N/mm²

HW

Applications
For blind-hole thread.

14570



d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x 中 mm	HSS-E 14570 ...	HSS-E 14571 ...
No. 2	1.85	56	9	50	2.8 x 2.1	201	
No. 3	2.10	48	9	50	2.8 x 2.1	202	
No. 4	2.35	40	11	56	3.5 x 2.7	203	
No. 5	2.65	40	7	56	3.5 x 2.7	204	
No. 6	2.85	32	8	56	4.0 x 3.0	205	
No. 8	3.50	32	8	63	4.5 x 3.4	206	
No. 10	3.90	24	11	70	6.0 x 4.9	207	
No. 12	4.50	24	11	80	6.0 x 4.9	208	
1/4	5.10	20	13	80	7.0 x 5.5	209	
5/16	6.60	18	15	90	8.0 x 6.2	210	
3/8	8.00	16	16	90	9.0 x 7.0	211	
7/16	9.40	14	22	100	8.0 x 6.2		212
1/2	10.80	13	23	110	9.0 x 7.0		213
9/16	12.25	12	25	110	11.0 x 9.0		214
5/8	13.50	11	28	110	12.0 x 9.0		215
3/4	16.50	10	30	125	14.0 x 11.0		216
7/8	19.50	9	34	140	18.0 x 14.5		217
1.	22.25	8	38	160	18.0 x 14.5		218

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
12-18	12-15	10-15	8-10	8-10	-	-	-	-	-	-	-	-	-	-	-	-	-

Machine taps | Blind-hole screw taps | Through-hole screw taps

14577 - 14578 Machine tap

UNF | DIN 371 | DIN 376 | HSS-E | ≤ 800 N/mm²

ATORN®

Design
Up to 3/8 inch DIN 371.
From 7/16 inch DIN 376.

14577
Applications
For through-hole thread.

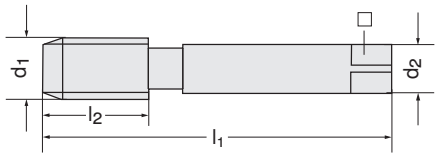
14578
Applications
For blind-hole thread.

3,5–5 B | ≤ 3xD

≈ 40° | 2–3 C | ≤ 3xD

14577

14578



d_1 inch	Core hole Ø mm	Pitch speed/inch	l_2 mm	l_1 mm	d_2 x ⏍ mm	DIN	straight 14577	...	40° 14578	...
1/4	5.50	28	16	80	7.0 x 5.5	371		111		111
5/16	6.90	24	18	90	8.0 x 6.2	371		112		112
3/8	8.50	24	20	100	10.0 x 8.0	371		113		113
7/16	9.90	20	20	100	8.0 x 6.2	376		114		114
1/2	11.50	20	20	100	9.0 x 7.0	376		115		115
9/16	13.00	18	22	100	11.0 x 9.0	376		116		116
5/8	14.50	18	22	100	12.0 x 9.0	376		117		117
3/4	17.50	16	25	110	14.0 x 11.0	376		118		118

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	< 45 HRC	<55HRC	<60HRC	<67HRC	VA < 900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	-	-	-	-	-	-	-	-	-	-	-	-

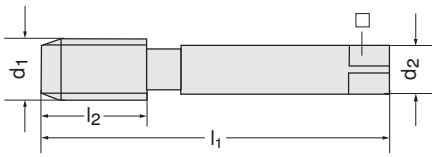
14582 Blind-hole screw tap

UNF | DIN 2184-1 | ≈ 40° | 2–3 C | ≤2,5xD | HSS-E | ≤ 800 N/mm²

HHW

Applications
For blind-hole thread.

14582



d_1	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	HSS-E 14582	...
No. 4	2.40	48	7	56	2.2 x –		205
No. 5	2.70	44	7	56	2.2 x –		206
No. 6	3.00	40	7	56	2.5 x 2.1		207
No. 8	3.50	36	7	63	2.8 x 2.1		208
No. 10	4.10	32	9	70	3.5 x 2.7		209
No. 12	4.60	28	9	80	4.0 x 3.0		210
1/4	5.50	28	11	80	4.5 x 3.4		211
5/16	6.90	24	12	90	6.0 x 4.9		212
3/8	8.50	24	13	90	7.0 x 5.5		213
7/16	9.90	20	15	100	8.0 x 6.2		214
1/2	11.50	20	16	100	9.0 x 7.0		215
9/16	12.90	18	17	100	11.0 x 9.0		216
5/8	14.50	18	19	100	12.0 x 9.0		217
3/4	17.50	16	21	110	14.0 x 11.0		218
7/8	20.40	14	23	125	18.0 x 14.5		219
1.	23.25	12	25	125	18.0 x 14.5		220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
12–18	12–15	-	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14594 - 14595 Machine tap

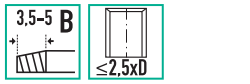
G | DIN 5156 | HSS-E | ≤ 1200 N/mm²

ATORN®

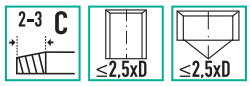
Design
DIN 5156-DIN ISO 228.

14594
Applications
For through-hole thread.

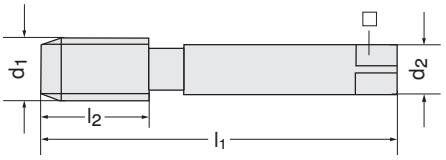
14595
Applications
For through-hole and blind-hole threads.



14594



14595



d_1 inch	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⊓ mm	Shape B 14594 ...	Shape C 14595 ...
G 1/8	8.80	28	20	90	7.0 x 5.5	101	101
G 1/4	11.80	19	22	100	11.0 x 9.0	102	102
G 3/8	15.30	19	22	100	12.0 x 9.0	103	103
G 1/2	19.00	14	25	125	16.0 x 12.0	104	104
G 3/4	24.50	14	28	140	20.0 x 16.0	106	106
Thread 1.	30.50	11	30	160	25.0 x 16.0	108	108

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	5–20	5–15	5–12	4–10	2–8	-	-	-	-	-	-	-	-	-	-

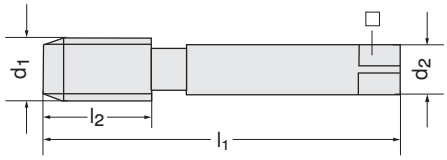
14596 Through-hole screw tap

G | DIN 5156 | 2–3 C | ≤2,5xD | HSS-E | GG(G)

ATORN®

Design
DIN 5156-DIN ISO 228. Nitrided.
Applications
For high machining performance in grey cast iron.

14596



d_1 inch	Core hole Ø mm	Pitch speed/inch	l_2 mm	l_1 mm	d_2 x ⊓ mm	HSS-E nitrided 14596 ...
G 1/16	6.80	28	20	90	6.0 x 4.9	100
G 1/8	8.80	28	20	90	7.0 x 5.5	101
G 1/4	11.80	19	22	100	11.0 x 9.0	102
G 3/8	15.30	19	22	100	12.0 x 9.0	103
G 1/2	19.00	14	25	125	16.0 x 12.0	104
G 5/8	21.00	14	25	125	18.0 x 14.5	105
G 3/4	24.50	14	28	140	20.0 x 16.0	106
G 7/8	28.30	14	28	150	22.0 x 18.0	107
Thread 1.	30.50	11	30	160	25.0 x 20.0	108
G 1.1/4	39.50	11	30	170	32.0 x 24.0	110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	< 45 HRC	<55HRC	<60HRC	<67HRC	VA < 900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8–20	-

Machine taps | Blind-hole screw taps

14598 - 14599 Machine tap

G | DIN 5156 | 2-3 C | HSS-E | ≤ 800 N/mm²

ATORN®

Design
DIN 5156-DIN ISO 228.

14598
Applications
For through-hole and blind-hole threads.

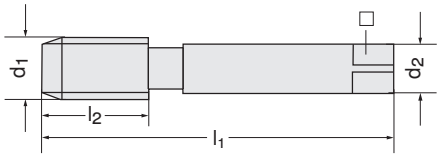
14599
Applications
For blind-hole thread.

≈ 15° | ≤2,5xD | ≤2,5xD

14598

≈ 40° | ≤2,5xD

14599



d_1 inch	Core hole Ø mm	Pitch TPI	l_2 mm	l_1 mm	d_2 x ⏍ mm	15° 14598 ...	40° 14599 ...
G 1/8	8.80	28	20	90	7.0 x 5.5	101	101
G 1/4	11.80	19	22	100	11.0 x 9.0	102	102
G 3/8	15.30	19	22	100	12.0 x 9.0	103	103
G 1/2	19.00	14	25	125	16.0 x 12.0	104	104
G 3/4	24.50	14	28	140	20.0 x 16.0	106	106
Thread 1.	30.50	11	30	160	25.0 x 20.0	108	108
G 1.1/4	39.50	11	30	170	32.0 x 24.0	110	
G 1.1/2	45.00	11	32	190	36.0 x 29.0	112	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	< 45 HRC	<55HRC	<60HRC	<67HRC	VA < 900N	VA>900N	Ti alloy	GG(G)	Plastic
14598																	
20–25	10–40	10–12	5–20	5–15	5–12	4–10	-	-	-	-	-	-	5–12	5–12	-	-	-
14599																	
20–25	10–40	10–12	5–20	5–15	5–12	4–10	-	-	-	-	-	-	5–12	5–12	-	-	-

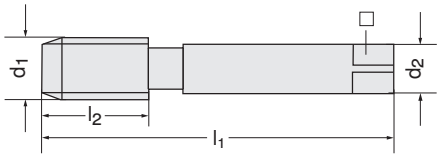
14601 Blind-hole screw tap

G | DIN 5156 | ≈ 40° | 2-3 C | ≤2,5xD | HSS-E | VA-OX | ≤ 1200 N/mm²

HW

Design
DIN 5156-DIN ISO 228.
Increased wear
resistance thanks to OX coating.

14601



HSS-E VA-OX

d_1 inch	Core hole Ø mm	Pitch speed/inch	l_2 mm	l_1 mm	d_2 x ⏍ mm	14601 ...
G 1/8	8.80	28	11	90	7 x 5.5	101
G 1/4	11.80	19	16	100	11 x 9.0	102
G 3/8	15.25	19	16	100	12 x 9.0	103
G 1/2	19.00	14	22	125	16 x 12.0	104
G 5/8	21.00	14	22	125	18 x 14.5	105
G 3/4	24.50	14	22	140	20 x 16.0	106
G 7/8	28.25	14	22	150	22 x 18.0	107
Thread 1.	30.75	11	28	160	25 x 20.0	108
G 1.1/8	35.50	11	30	170	28 x 22.0	109
G 1.1/4	39.25	11	30	170	32 x 24.0	110
G 1.1/2	45.25	11	32	190	36 x 29.0	112

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	4–10	2–8	-	-	-	-	-	5–12	5–12	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14604 - 14606 Machine tap

G | DIN 5156 | PM HARDLUBE | VA | Uni

ATORN®

Design
- Powder-metallurgical steel (PM) with HARDLUBE coating
- High edge stability for particularly high wear resistance and minimised surface friction

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

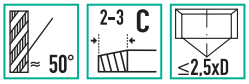
Note:
Outstanding value for money.
Maximum profitability.

14604
Design
- With spiral point

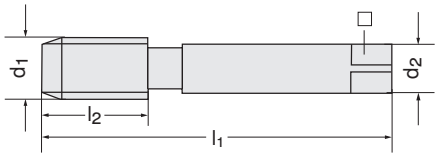
Applications
For through-hole thread.

14606
Applications
For blind-hole thread.

14604



14606



d_1 inch	Core hole Ø mm	Pitch speed/inch	14604 l_2 mm	14606 l_2 mm	l_1 mm	d_2 x ⏍ mm	straight 14604	...	50° 14606	...
G 1/8	8.80	28	20	12	90	7.0 x 5.5		101		101
G 1/4	11.80	19	21	15	100	11.0 x 9.0		102		102
G 3/8	15.25	19	21	15	100	12.0 x 9.0		103		103
G 1/2	19.00	14	24	18	125	16.0 x 12.0		104		104
G 5/8	21.00	14	24	18	125	18.0 x 14.5		105		105
G 3/4	24.50	14	26	20	140	20.0 x 16.0		106		106
Thread 1.	30.75	11	28	22	160	25.0 x 20.0		107		107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–50	10–40	15–50	15–40	15–35	10–30	10–25	8–20	-	-	-	-	-	8–20	5–15	-	15–40	-

14607 - 14608 Machine tap

G | DIN 5156 | HSS-E OX | VA | Uni

ATORN®

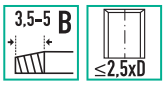
Design
- Vaporised
- For minimised wear
- Improved coolant transport

Applications
All-rounder for universal machining.
Also very well suited to the machining of VA.

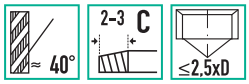
Note:
Outstanding value for money.
High profitability.

14607
Applications
For through-hole thread.

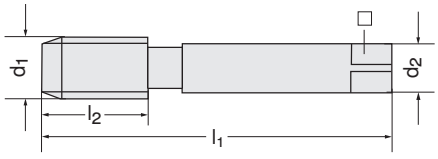
14608
Applications
For blind-hole thread.



14607



14608



d_1 inch	Core hole Ø mm	Pitch speed/inch	14607 l_2 mm	14608 l_2 mm	l_1 mm	d_2 x ⏍ mm	straight 14607	...	40° 14608	...
G 1/8	8.80	28	20	11	90	7.0 x 5.5		101		101
G 1/4	11.80	19	22	16	100	11.0 x 9.0		102		102
G 3/8	15.25	19	22	16	100	12.0 x 9.0		103		103
G 1/2	19.00	14	25	22	125	16.0 x 12.0		104		104
G 5/8	21.00	14	25	22	125	18.0 x 14.5		105		105
G 3/4	24.50	14	28	22	140	20.0 x 16.0		106		106
G 7/8	28.25	14	28	22	150	22.0 x 18.0		107		107
Thread 1.	30.75	11	30	28	160	25.0 x 20.0		108		108

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
20–25	10–40	10–12	5–20	5–15	5–12	4–10	2–8	-	-	-	-	-	5–12	5–12	-	-	-

Machine taps | Blind-hole screw taps | Thread milling cutters

14602 - 14603 Machine tap

G | DIN 5156 | 2-3 C | HSS-E | ≤ 800 N/mm²

Design
DIN 5156-DIN ISO 228.

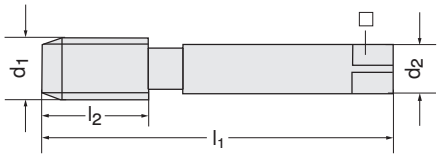
Note:
Cost-effective design.

14602
Applications
For through-hole and blind-hole threads.

14603
Applications
For blind-hole thread.

14602

14603



d_1 inch	Core hole Ø mm	Pitch speed/inch	l_2 mm	l_1 mm	d_2 x ⊓ mm	straight 14602	...	35° 14603	...
G 1/8	8.80	28	20	90	7 x 5.5		101		101
G 1/4	11.80	19	22	100	11 x 9.0		102		102
G 3/8	15.25	19	22	100	12 x 9.0		103		103
G 1/2	19.00	14	25	125	16 x 12.0		104		104
G 3/4	24.50	14	28	140	20 x 16.0		106		106
Thread 1.	30.75	11	30	160	25 x 20.0		108		108

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
10–15	12–15	5–12	8–12	8–12	8–12	-	-	-	-	-	-	-	-	-	-	-	-

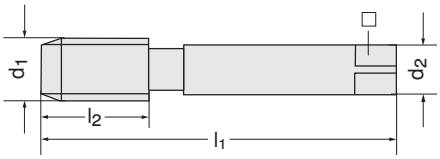
14605 Blind-hole screw tap

G | DIN 5156 | ≈ 39° | 2-3 C | ≤2,5xD | HSS-E | ≤ 900 N/mm²

EMUGE

Design
2 Enorm.
DIN 5156-DIN ISO 228.

14605



d_1 inch	Core hole Ø mm	Pitch speed/inch	l_2 mm	l_1 mm	d_2 x ⊓ mm	HSS-E 14605	...
G 1/8	8.80	28	10	90	7 x 5.5		101
G 1/4	11.80	19	15	100	11 x 9.0		102
G 3/8	15.25	19	15	100	12 x 9.0		103
G 1/2	19.00	14	17	125	16 x 12.0		104
G 3/4	24.50	14	20	140	20 x 16.0		106
Thread 1.	30.75	11	24	160	25 x 20.0		108

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	10–40	5–25	5–20	5–15	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14610 Solid carbide thread milling cutter

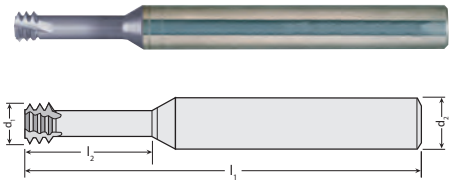
M | VHM TiAlN | ≈ 15° | DIN 6535 HA | Z 3–5 | ≤ 2xD | DIN 13 | IR/IL | Uni

ATORN®

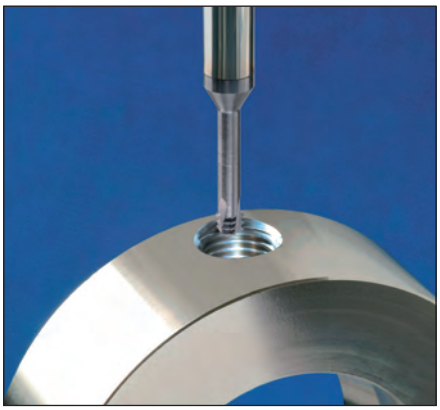
Design
- **Fixed size design**
- **Corrected thread profile** for milling **precise female threads** (ensure stable clamping)

Note:
Designs for up to 3xD thread depth and designs for hard machining up to 62 HRC deliverable on request.

14610



Size	Pitch mm	d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	14610	...
M 1	0.25	0.72	2.5	39	3	3		101
M 2	0.40	1.53	4.5	58	6	3		102
M 2.2	0.45	1.65	5.0	58	6	3		103
M 2.5	0.45	1.95	5.5	58	6	3		104
M 3	0.50	2.37	6.5	58	6	3		105
M 3.5	0.60	2.75	7.5	58	6	3		106
M 4	0.70	3.10	9.0	58	6	3		107
M 5	0.80	3.80	12.5	58	6	3		108
M 6	1.00	4.65	14.0	58	6	3		109
M 8	1.25	6.00	18.0	58	6	3		110
M 10	1.50	7.80	23.0	64	8	3		111
M 12	1.75	9.00	26.0	73	10	3		112
M 16	2.00	11.80	35.0	84	12	4		113
M 20	2.50	15.00	43.0	105	16	5		114



Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–400	200–350	200–400	100–180	80–160	70–140	55–110	50–100	60–80	-	-	-	-	50–100	60–80	40–60	80–160	-

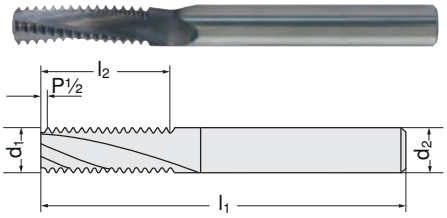
14611 Solid carbide thread milling cutter

M | VHM TiAlN | ≈ 15° | DIN 6535 HA | Z 2–4 | ≤ 2xD | DIN 13 | IR/IL | Uni

Design
- **Fixed size design**
- **Corrected thread profile** for milling **precise female threads** (ensure stable clamping)

Note:
Designs for up to 3xD thread depth and designs for hard machining up to 62 HRC deliverable on request.

14611



Size	Pitch mm	d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	IC	14611	...
M 3	0.50	2.40	7.0	42	4	2	-		101
M 4	0.70	3.15	9.8	55	6	3	-		102
M 5	0.80	4.00	12.0	55	6	3	-		103
M 6	1.00	4.80	14.0	55	6	3	-		104
M 8	1.25	5.95	18.75	60	6	3	x		105
M 10	1.50	7.95	22.5	70	8	3	x		106
M 12	1.75	9.90	28.0	75	10	4	x		107
M 14	2.00	11.60	32.0	85	12	4	x		108
M 16	2.00	12.00	36.0	85	12	4	x		109
M 18	2.50	14.00	42.5	90	14	4	x		110
M 20	2.50	16.00	42.5	90	16	4	x		111

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
200–400	200–350	200–400	100–180	80–160	70–140	55–110	50–100	60–80	-	-	-	-	50–100	60–80	40–60	80–160	-

Thread milling cutters

14615 Solid carbide thread milling cutter HARDCUT

VHM TiAlN | DIN 6535 HA | M | MF | ≤ 2xD | ≤ 2xD | 62 HRC

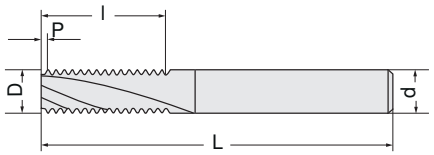
ATORN®

Design
- Solid carbide ultra-fine grain
- TiAlN coating with high abrasion resistance

Applications
For thread milling and countersinking.

Advantages:
- Reduced machining time
- Smaller chips for increased process reliability
- Shorter machining time
- Higher productivity

14615



Pitch mm	M coarse	M fine	d1 mm	D mm	Df mm	Z	l mm	lf mm	L mm	14615	...
0.5	M 3	Ø > 4	6	2.4	3.6	3	5.3	5.9	58		101
0.7	M 4	Ø > 5	6	3.1	4.3	3	7.4	8.0	58		102
0.8	M 5	Ø > 6	6	4.0	5.2	3	9.2	9.8	58		103
1.0	M 6	Ø > 7	8	4.8	6.4	4	10.5	11.3	64		104
1.0	-	Ø > 9	8	6.0	7.6	4	13.5	14.3	64		105
1.0	-	Ø > 10	8	8.0	9.6	4	16.5	17.3	73		106
1.25	M 8	Ø > 10	8	6.0	7.6	4	14.4	15.2	64		107
1.5	M 10	Ø > 12	10	8.0	9.8	4	17.3	18.2	73		108
1.5	-	Ø > 14	12	10.0	11.8	4	21.8	22.7	84		109
1.75	M 12	Ø > 12	12	9.5	11.5	4	20.1	21.1	84		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	70–80	60–70	50–60	40–50	-	-	-	-	-

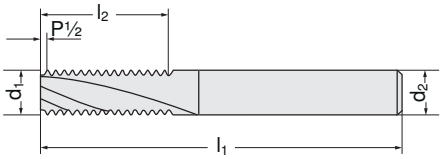
14612 Solid carbide thread milling cutter

MF | VHM TiAlN | ≈ 15° | DIN 6535 HA | Z 3–4 | ≤ 2xD | DIN 13 | IR/IL | Uni

Design
- **Fixed size design**
- **Corrected thread profile** for milling **precise female threads** (ensure stable clamping)

Note:
Designs for up to 3xD thread depth and designs for hard machining up to 62 HRC deliverable on request.

14612



Size	Pitch mm	d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	IC	14612	...
M 5	0.50	4.00	11.50	55	6	3	-		101
M 6	0.75	4.80	14.25	55	6	3	-		102
M 8	1.00	5.95	19.00	60	6	3	-		103
M 10	1.25	7.95	21.50	70	8	3	x		104
M 12	1.00	9.90	27.00	75	10	4	x		105
M 12	1.25	9.90	27.50	75	10	4	x		106
M 12	1.50	9.90	27.00	75	10	4	x		107
M 14	1.00	11.60	31.00	85	12	4	x		108
M 14	1.50	11.60	31.50	85	12	4	x		109
M 16	1.50	11.85	34.50	85	12	4	x		110
M 18	1.50	14.00	42.00	90	14	4	x		111
M 20	1.50	16.00	42.00	90	16	4	x		112

Al < 10% Si	Al > 10% Si	Cu	St < 520 N	St < 750 N	St < 900 N	St < 1100 N	St <1200 N	St > 1400 N	< 45 HRC	< 55 HRC	< 60 HRC	< 67 HRC	VA < 900 N	VA > 900 N	Ti	GG(G)	Plastic
200–400	200–350	200–400	100–180	80–160	70–140	55–110	50–100	60–80	-	-	-	-	50–100	60–80	40–60	80–160	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

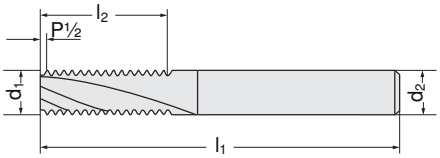
14613 Solid carbide thread milling cutter

MF | VHM TiAlN | ≈ 15° | DIN 6535 HA | Z 3–5 | ≤ 2xD | DIN 13 | IR/IL | Uni

Design
- Universal design
- **Corrected thread profile** for milling **precise female threads** (ensure stable clamping)

Note:
Designs for up to 3xD thread depth and designs for hard machining up to 62 HRC deliverable on request.

14613



Size	Pitch mm	d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	IC	14613	...
> M 10	0.50	8.00	12	70	8	3	x		**101**
> M 11	0.75	8.00	12	70	8	3	x		**102**
> M 12	1.00	10.00	16	75	10	4	x		**103**
> M 14	1.00	12.00	20	85	12	4	x		**104**
> M 18	1.00	16.00	25	90	16	5	x		**105**
> M 22	1.00	20.00	32	105	20	5	x		**106**
> M 14	1.50	10.00	16	75	10	4	x		**107**
> M 16	1.50	12.00	20	85	12	4	x		**108**
> M 20	1.50	16.00	25	90	16	5	x		**109**
> M 24	1.50	20.00	32	105	20	5	x		**110**
> M 16	2.00	12.00	20	85	12	4	x		**111**
> M 20	2.00	16.00	25	90	16	5	x		**112**
> M 24	2.00	20.00	32	105	20	5	x		**113**
> M 24	3.00	16.00	25	90	16	5	x		**114**
> M 27	3.00	20.00	32	105	20	5	x		**115**

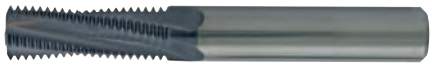
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–400	200–350	200–400	100–180	80–160	70–140	55–110	50–100	60–80	-	-	-	-	50–100	60–80	40–60	80–160	-

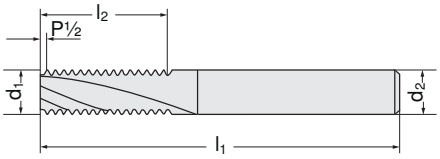
14614 Solid carbide thread milling cutter

G | VHM TiAlN | ≈ 15° | DIN 6535 HA | Z 3–4 | ≤ 2xD | DIN 228/1 | IR/IL | Uni

Design
- **Fixed size design**
- **Corrected thread profile** for milling **precise female threads** (ensure stable clamping)

14614





Size inch	Pitch mm	d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	IC	14614	...
G 1/8	28.0	8.00	20.80	70	8	3	x		**101**
G 1/4	19.0	9.90	28.00	75	10	4	x		**102**
G 3/8	19.0	14.00	41.45	90	14	4	x		**103**
G 1/2	14.0	16.00	43.50	90	16	4	x		**104**

Al <10% Si	Al >10% Si	Cu	St <520 N	St <750 N	St <900 N	St <1100 N	St <1200 N	St >1400 N	<45 HRC	<55 HRC	<60 HRC	< 67 HRC	VA < 900 N	VA >900 N	Ti	GG(G)	Plastic
200–400	200–300	200–400	100–180	80–100	70–140	55–110	50–100	60–80	-	-	-	-	50–100	60–80	40–60	80–160	-

Indexable insert thread milling cutters | Thread milling plates

14625 - 14628 Indexable insert thread milling cutter with internal cooling supply

ATORN®

Applications
For cylindrical **female and male threads.**
For **through-bores and blind holes.** Can be used universally for **left-hand and right-hand threads**.
Low cutting pressure, no chipping problems as only short chips are produced.

Scope of delivery:
Incl. spanner and clamping screw.

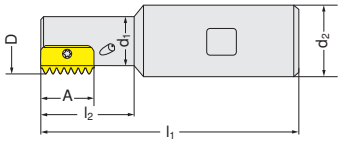
Note:
Indexable inserts see art. no. 14630–14631.

14625
Design
Holder made of special steel.

14626
Design
Holder made of solid carbide.

14627
Design
Holder made of special steel **with two insert seats** for higher feeds and, in particular, for harder materials.

14628
Replacement clamping screws

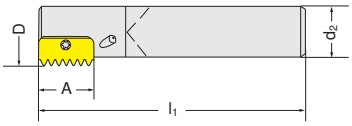


14625

Holder made of special steel — **Clamping screw**

Designation	A mm	D mm	d_2 mm	d_1 mm	l_1 mm	l_2 mm	14625 ...	14628 ...
SR009H12	12	9.5	20	7.5	85	14	101	101
SR0012F14	14	12.0	20	8.9	75	20	103	102
SR0014H14	14	14.5	20	11.2	85	25	104	102
SR0017H14	14	17.0	20	13.4	85	30	105	102
SR0021H21	21	21.0	20	16.5	94	40	107	103
SR0029J30	30	29.0	25	22.4	110	50	109	104

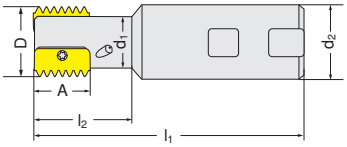
14626



Holder made of solid carbide — **Clamping screw**

Designation	A mm	D mm	d_2 mm	l_1 mm	14626 ...	14628 ...
SR0010K12C	12	9.9	8	125	101	101
SR0013J14C	14	13.2	10	150	103	102
SR0015K14C	14	15.2	12	175	104	102
SR0021M21C	21	21.0	16	200	106	103
SR0027S30C	30	27	20	270	107	104

14627



Holder made of special steel (2 insert seats) — **Clamping screw**

Designation	A mm	D mm	d_2 mm	d_1 mm	l_1 mm	l_2 mm	14627 ...	14628 ...
SR0020H14-2	14	20	20	16	93	41	101	101
SR0030J21-2	21	30	25	24	108	52	102	103
SR0040L30-2	30	40	32	30	130	70	103	104

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14630 - 14631 Thread milling plates

M MF

ATORN®

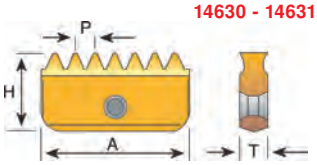
Design
Robust, full-profile indexable insert **can be used 2 ways**.
Applications
For universal use in many materials.
Quality
Solid carbide/AMT7 TiAlN-coated.

Note:
14630 101-105 single-sided cutting.

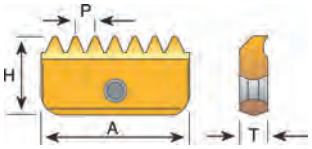
14630
Design
Full profile 60° female.
Applications
For bores.

14631
Design
Full profile 60° male.
Applications
For shoulders.

14630 - 14631



14630 101-105



Designation	P mm	A mm	H mm	T mm	Female 14630 ...	Male 14631 ...
12 I 0.5 ISO	0.50	12	6.3	2.9	101	
12 I 0.75 ISO	0.75	12	6.3	2.9	102	
12 I 1.0 ISO	1.00	12	6.3	2.9	103	
12 I 1.25 ISO	1.25	12	6.3	2.9	104	
12 I 1.5 ISO	1.50	12	6.3	2.9	105	
14 I 0.5 ISO	0.50	14	7.5	3.1	106	
14 I/E 0.75 ISO	0.75	14	7.5	3.1	107	107
14 I/E 1.0 ISO	1.00	14	7.5	3.1	108	108
14 I/E 1.25 ISO	1.25	14	7.5	3.1	109	109
14 I/E 1.5 ISO	1.50	14	7.5	3.1	110	110
14 I/E 1.75 ISO	1.75	14	7.5	3.1	111	111
14 I/E 2.0 ISO	2.00	14	7.5	3.1	112	112
14 I/E 2.5 ISO	2.50	14	7.5	3.1	113	113
21 I/E 1.0 ISO	1.00	21	12	4.7	114	114
21 I/E 1.5 ISO	1.50	21	12	4.7	115	115
21 I 1.75 ISO	1.75	21	12	4.7	116	
21 I/E 2.0 ISO	2.00	21	12	4.7	117	117
21 I/E 2.5 ISO	2.50	21	12	4.7	118	118
21 I/E 3.0 ISO	3.00	21	12	4.7	119	119
21 I 3.5 ISO	3.50	21	12	4.7	120	
30 I/E 1.5 ISO	1.50	30	16	5.5	121	121
30 I/E 2.0 ISO	2.00	30	16	5.5	122	122
30 I/E 3.0 ISO	3.00	30	16	5.5	123	123
30 I/E 3.5 ISO	3.50	30	16	5.5	124	124
30 I/E 4.0 ISO	4.00	30	16	5.5	125	125
30 I 4.5 ISO	4.50	30	16	5.5	126	
30 I 5.0 ISO	5.00	30	16	5.5	127	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
180–460	180–460	115–460	130–280	120–240	115–200	110–190	105–180	105–180	-	-	-	-	130–190	130–190	25–80	60–170	115–460

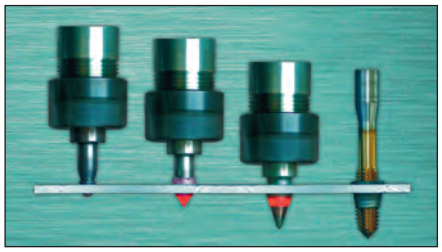
Flow drills

14751 - 14753 FLOWDRILL – starter set and tool set

Design
Flow drills generate frictional heat through the polygonal cemented carbide contour, which makes the metallic materials flow. Chip-free holes for threaded connections, sealing surfaces, bearings and joints and soldering and welding connections can therefore be made very quickly.
The tool diameter can be between 1 and 40 mm and the wall thickness to be machined between 0.5 and 10 mm.

Advantage:
- Saves considerable time and money compared to conventional methods
- Solid basis for threads in thin-walled parts
- In many cases, replaces weld nuts, rivet nuts and press nuts

Requirements:
For flow drilling, we recommend the use of a column-type drill with adjustable speed range and sufficient performance. The requirements vary with the tool diameter and the wall thickness. **Hand drills are not suitable for flow drilling.**



14751 101-106
Starter sets
Scope of delivery:
- 1 special chuck MK2 with cooling ring
- 1 hook wrench and open-end spanner
- 1 collet chuck ER25 in the appropriate size
- 1 flow drill in the selected thread size
- 1 thread mould in the selected thread size
- 1 FDKS release agent for flow drilling including brass brush
- 1 FTMZ thread-cutting oil including bristle brush
- 1 system case with quick start guide

14753 101
Tool set
Scope of delivery:
- 1 flow drill Ø 4.5 mm long/flat for M5
- 1 flow drill Ø 5.4 mm long/flat for M6
- 1 flow drill Ø 7.3 mm long/flat for M8
- 1 thread mould for M5 x 0.80, HSS TIN with lubrication groove
- 1 thread mould for M6 x 1.00, HSS TIN with lubrication groove
- 1 thread mould for M8 x 1.25, HSS TIN with lubrication groove
- 1 tool box with foam inserts

Note:
Other assortments including for special applications on request. ***For suitable thread moulds, see art. no. 14365 and 14758.***

14751 101-106

14753 101

Technical data:		M4	M5	M6	M8	M10	M12
Recommended rotation speed for flow drilling:	**rpm**	**2600**	**2500**	**2400**	**2200**	**2000**	**1800**
Recommended drive output:	**kW**	**0.7**	**0.8**	**1.0**	**1.3**	**1.5**	**1.7**
Shank Ø:	**mm**	6.0	6,0	6.0	8.0	10.0	12.0
Core hole Ø:	**mm**	3.7	4.5	5.4	7.3	9.2	10.9
Maximum material thickness:	**mm**	2.3–4.2	2.5–4.6	2.6–5.0	3.0–5.9	3.3–6.6	3.6–7.2
Recommended rotation speed, thr. moulding:	**rpm**	1000	800	650	500	400	330

Speed values in the table apply for 2.0 mm material thickness and ST37. For stainless steel, approximately 15% lower rotation speed applies for flow drilling and 0.1 mm larger core hole diameter from M6. For aluminium and non-ferrous base metals, approximately 50% higher rotation speed applies for flow drilling!

Type	Flow drill	14751 ...	14753 ...
Starter set M4	long/flat	**101**	
Starter set M5	long/flat	**102**	
Starter set M6	long/flat	**103**	
Starter set M8	long/flat	**104**	
Starter set M10	long/flat	**105**	
Starter set M12	long/flat	**106**	
Tool set M5/M6/M8	long/flat		**101**

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14756 - 14757 Flowdrill – flow drills

VHM M

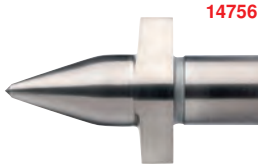
Design
- A Flowdrill is a cemented carbide tool used to generate increased wall thickness by displacing raw material
- This locally produced extra material thickness can be used for a load-bearing thread, as a soldering and welding zone, sealing surfaces or as a bearing
- The tool diameter can be between 1 and 40 mm and the wall thickness to be machined between 0.5 and 10 mm

Applications
The flow drill can be used in all common materials, such as steel, stainless steel, aluminium, copper, brass, as well as in high-strength special materials.

Advantages:
- Local increase in wall thickness
- Sufficient thread length
- Faster process cycle
- High accuracy
- Long service life
- Suitable for series production, e.g. on CNC
- Chipless

14756 101-112
Flat
Design
- Short
- Without collar (flow drilling without collar)
- For metric core holes

14756



Technical data: 14756 ...		101	102	103	104	105	106	107	108	109	110	111	112
Thread Ø		2 x 0.40	3 x 0.50	4 x 0.70	5 x 0.80	6 x 1.00	8 x 1.25	10 x 1.50	12 x 1.75	14 x 2.00	16 x 2.00	18 x 2.50	20 x 2.50
Core hole Ø	mm	1.8	2.7	3.7	4.5	5.4	7.3	9.2	10.9	13.0	14.8	16.7	18.7
Min./max. material thickness	mm	1.0–1.8	1.0–2.0	1.0–2.2	1.0–2.4	1.0–2.5	1.0–2.9	1.0–3.2	1.0–3.5	1.0–3.9	1.0–4.2	1.0–4.6	1.0–5.0
Shank Ø	mm	6.0	6.0	6.0	6.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	18.0
Work mandrel length	mm	5.8	6.7	8.2	9.3	10.5	13.4	16.9	19.7	23.3	26.6	30.4	34.4
Parameters for flow drilling													
Parameters are based on													
Material thickness	mm	1.5	1.5	2.0	2.0	2.0	2.0	2.5	2.5	2.5	3.0	3.0	3.0
Rotation speed (steel/stainless steel)	(RPM)	3400/2900	3200/2700	2600/2200	2500/2100	2400/2000	2200/-	2000/-	1800/-	1600/-	1400/-	1400/-	1200/-
Feed (steel/stainless steel)	mm/min	80	100	120	150	150	150/-	150/-	150/-	150/-	150/-	150/-	150/-
Spindle performance (steel/stainless steel)	kW	0.5	0.6	0.7	0.8	1.0	1.3/-	1.5/-	1.7/-	2.0/-	2.2/-	2.5/-	2.7/-

14757 101-112
Flat
Design
- Long
- Without collar (flow drilling without collar)
- For metric core holes

14757

Technical data: 14757 ...		101	102	103	104	105	106	107	108	109	110	111	112
Thread Ø		2 x 0,40	3 x 0,50	4 x 0,70	5 x 0,80	6 x 1,00	8 x 1,25	10 x 1,50	12 x 1,75	14 x 2,00	16 x 2,00	18 x 2,50	20 x 2,50
Core hole Ø	mm	1,8	2,7	3,7	4,5	5,4	7,3	9,2	10,9	13,0	14,8	16,7	18,7
Min./max. material thickness	mm	1,9 - 3,2	2,1 - 3,7	2,3 - 4,2	2,5 - 4,6	2,6 - 5,0	3,0 - 5,9	3,3 - 6,6	3,6 - 7,2	4,0 - 7,9	4,3- 8,5	4,7 - 9,2	5,1 - 9,9
Shank Ø	mm	6,0	6,0	6,0	6,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	18,0
Work mandrel length	mm	7,8	8,7	10,4	11,9	13,8	18,0	22,6	26,3	31,1	35,1	39,7	44,6
Parameters for flow drilling													
Parameters are based on													
Material thickness	mm	2,5	2,5	3,0	3,5	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,5
Rotation speed (steel/stainless steel)	(RPM)	3200/2700	3000/2600	2600/2200	2400/2000	2200/1900	2000/-	1800/-	1600/-	1400/-	1200/-	1200/-	1000/-
Feed (steel/stainless steel)	mm/min	80	100	120	120	150	120/-	120/-	120/-	100/-	100/-	100/-	80/-
Spindle performance (steel/stainless steel)	kW	00,6	0,6	0,8	1,0	1,3	1,5/-	2,0/-	3,0/-	3,0/-	3,0/-	3,5/-	4,0/-

	Short/flat 14756 ...	Long/flat 14757 ...
M2	101	101
M3	102	102
M4	103	103
M5	104	104
M6	105	105
M8	106	106

	Short/flat 14756 ...	Long/flat 14757 ...
M10	107	107
M12	108	108
M14	109	109
M16	110	110
M18	111	111
M20	112	112

14759 FDKS release agent

Design
- Reduced FDKS build-up of material deposits on the flow drill. Also leads to a significant extension of service life as well as a homogeneous and smooth surface of the passage

Applications
Apply to the tool at least every five holes for use in steel or before every hole in stainless steel or aluminium.

14759 102

Content	14759 ...
100 g	101
1 kg	102

Thread repair kits

14800 HELICOIL® plus repair kit

HELICOIL® plus made by BOLLHOFF

Applications
The record holder for fast thread repairs:
- For scrap recovery and thread repair
- For repair of damaged or worn threads
- For thread reinforcement, where low-shear-strength materials, e.g. aluminium, are used (mechanical engineering, automotive, electrical and medical technology, etc.)
- Absolutely secure positioning, even under the most extreme loads, abrasion-resistant thread insert made of corrosion-resistant, wear-resistant and heat-resistant CrNi steel, ideal power transmission and increased load capacity of nut and bolt threads

230 pieces, set contents:
20 each of thread inserts
M 5 x 5/M 5 x 7.5/M 5 x 10/M 6 x 6/M 6 x 9/ M 6 x 12,
10 each of thread inserts
M 8 x 8/M 8 x 12/M 8 x 16/M 10 x 10/M 10 x 15/ M 10 x 20/M 12 x 12/M 12 x 18/M 12 x 24,
5 twist drills,
5 hand taps,
5 installation mandrels,
5 tang break mandrels.

14800

Set contents	Set size	14800	...
230 pieces	M 5 - M 12		202

14810 HELICOIL® plus repair packs

HELICOIL® plus made by BOLLHOFF

Applications
For standard metric ISO thread DIN 13.
Quality
Thread inserts made of stainless steel.

14810 103-106
Design
Set contents:
60 thread inserts (20 per nominal length),
1 twist drills,
1 hand taps,
1 installation mandrel,
1 tang break mandrel.

14810 107-112
Design
Set contents:
30 thread inserts (10 per nominal length),
1 twist drills,
1 hand taps,
1 installation mandrel,
1 tang break mandrel.

14810 113-114
Design
Set contents:
30 thread inserts (10 per nominal length),
1 hand taps,
1 installation mandrel.

14810 103-106

14810 107-112

14810 113

14810 114

d mm	Nominal length mm	Core hole Ø mm	Number of inserts	14810	...
M 3	3/4.5/6	3.2	60		103
M 4	4/6/8	4.2	60		104
M 5	5/7.5/10	5.2	60		105
M 6	6/9/12	6.3	60		106
M 7	7/10.5/14	7.3	30		107
M 8	8/12/16	8.4	30		108

d mm	Nominal length mm	Core hole Ø mm	Number of inserts	14810	...
M 9	9/13.5/18	9.4	30		109
M 10	10/15/20	10.5	30		110
M 11	11/17.5/22	11.5	30		111
M 12	12/18/24	12.5	30		112
M 14	14/21/28	14.5	30		113
M 16	16/24/32	16.5	30		114

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14802 - 14808 Individual parts for HELICOIL® plus art. no. 14800 + 14810

HELICOIL® plus made by BOLLHOFF

14802
Thread inserts
M 3–M 6, pack = 20 pieces,
M 8–M 12, pack = 10 pieces.

14804
Short screw tap, HSS.

14806
Installation mandrel.

14808
Tang break-off tool.

14802

14804

14806

14808

		Thread inserts		Screw tap		Installation mandrel		Tang break-off tool	
Size	Core hole Ø mm	14802	...	14804	...	14806	...	14808	...
M 3 x 3	3.2		114		102		102		102
M 3 x 4.5	3.2		115		102		102		102
M 3 x 6	3.2		116		102		102		102
M 4 x 4	4.2		120		104		104		103
M 4 x 6	4.2		121		104		104		103
M 4 x 8	4.2		122		104		104		103
M 5 x 5	5.2		126		106		106		104
M 5 x 7.5	5.2		127		106		106		104
M 5 x 10	5.2		128		106		106		104
M 6 x 6	6.3		130		107		107		104
M 6 x 9	6.3		131		107		107		104
M 6 x 12	6.3		132		107		107		104
M 8 x 8	8.4		141		109		109		105
M 8 x 12	8.4		142		109		109		105
M 8 x 16	8.4		143		109		109		105
M 10 x 10	10.5		156		112		112		106
M 10 x 15	10.5		157		112		112		106
M 10 x 20	10.5		158		112		112		106
M 12 x 12	12.5		176		116		116		107
M 12 x 18	12.5		177		116		116		107
M 12 x 24	12.5		178		116		116		107

Tap destroying tools | Screw tap extractors | Bolt extractors

11069 Solid-carbide tap removal tools

VHM TiN | DIN 6535 HA

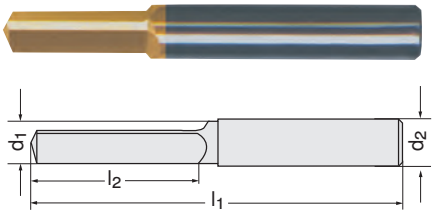
Design
With straight shank, self-centring.

Applications
For drilling out broken-off HSS and HSS-E screw taps.

Quality
Solid-carbide micro-fine grain/TiN-coated.

Note:
Stable clamping is required. Hole dry and free from cutting oil.

11069



d_1 h9 mm	l_2 mm	l_1 mm	d_2 h6 mm	11069	...
3.3	15	50	6		101
4.2	15	50	6		103

d_1 h9 mm	l_2 mm	l_1 mm	d_2 h6 mm	11069	...
5.0	15	50	6		105
6.8	20	60	8		107

d_1 h9 mm	l_2 mm	l_1 mm	d_2 h6 mm	11069	...
8.5	25	70	10		109
10.2	30	75	12		111

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	35–45	-	-	-	-	-

14900 - 14904 Screw tap extractors

14900-14903
Applications
For broken screw taps. The fingers are guided into the grooves of the broken screw tap by moving the upper **retaining ring (1)** and secured with the **guide bush (2)**. The broken screw tap piece is moved back and forth using a tap wrench until it loosens and can be unscrewed.

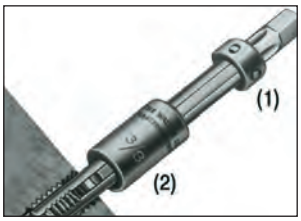
14900 102-104
Screw tap extractor sets
Applications
For screw taps with **3 flutes.** Complete delivery in a case.

14900 106-108
Screw tap extractor sets
Applications
For screw taps with **4 flutes.** Complete delivery in a case.

14902
Screw tap extractor, individual
Applications
For screw taps with **3 flutes.**

14904
Replacement fingers
For extractors in **3-flute** design.

14900



Sets		3 flutes		4 flutes	
Set contents	**Extractor**	**14900**	**...**	**14900**	**...**
6 pieces	M 4/5/6/8/10/12		102		106
10 pieces	M 3/4/5/6/8/10/12/14/16/20		104		
10 pieces	M 4/5/6/8/10/12/14/16/20/22				108

Individual	3 flutes		3 replacement fingers	
for screw tap Metric/Whitworth	**14902**	**...**	**14904**	**...**
M 3/1/8		102		102
M 4/5/32		104		104
M 5/3/16		105		105
M 6/1/4		107		107
M 8/5/16		109		109
M 10/3/8		111		111
M 12/1/2		113		113
M 14/9/16		114		114
M 16/5/8		115		115
M 20/3/4		117		117

14902 14904

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14929 Screw tap extractor sets

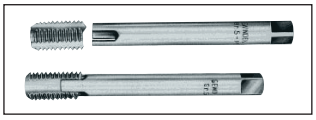
Applications
For extracting broken screw taps.

14929 101
Design
- **6 pieces**
- Size 1-4 three-fluted
- Size 5-6 four-fluted

14929 102
Design
- **9 pieces**
- Size 2-4 three-fluted
- Size 5-10 four-fluted

14929 101

Set contents	14929 ...
6 pieces	101
9 pieces	102



14930 - 14931 Screw tap extractor

Applications
For extracting broken screw taps.

14930
For **three-fluted** screw taps.

14931
For **four-fluted** screw taps.

14930

14931

Size	for screw tap metric/Whitworth	Total length mm	Square mm	14930 ...	14931 ...
1	M 4/5/32	55	3.0	101	
2	M 5/3/16	60	3.5	102	
3	M 6/1/4	60	3.8	103	103
4	M 8/5/16	60	5.0	104	104
5	M 10/3/8	70	6.0	105	105
6	M 12/1/2	70	7.5	106	106
7	M 14/9/16	70	8.5	107	107
8	M 16/5/8	80	10.5	108	108
9	M 20/3/4	80	13.0	109	109

14933 Bolt extractor set

Applications
Enables broken bolts and stud bolts to be professionally extracted.
Quality
HSS steel.

14933

	Set contents:
5	HSS drills 3.2/4.8/6.4/8.0/8.7 mm
10	drill guide bushes
5	extractor pins
5	extractor adapters

Set contents	for stud bolt Ø mm	Design	14933 ...
25 pieces	5–16	in box	201

Erosion drills and accessories

14934 - 14935 Erosion drills eromobil®

The new eromobil®

More compact, more functional, more practical
Since it was invented in 1972, the **eromobil®** has been, and remains to this day, the most effective solution for tool breakage. Broken-off screw taps, twist drills, reamers, etc. can be eroded in minutes. The device can be used quickly on column, radial and magnetic drills, milling machines, drilling equipment, as well as CNC machines. This minimises production downtimes and avoids damage to workpieces and additional costs. With its new design, the **eromobil®** is more compact and functional. The new intelligent design integrates all components in a clear and space-saving way, handling is easy and comfortable.

Functional principle
The hollow electrode is clamped in the oscillating head. Its diameter is smaller than the broken-off tool. The centre of the broken-off tool is dismantled during erosion. The cutting edges then loosen and can be removed easily. The electrode does not come into contact with the workpiece meaning the thread remains undamaged. The drilling emulsion usual in operation is used as a cooling lubricant.

Generator in the robust, compact housing with ergonomic handles for easy lifting and transporting

Supply hose 2 m from the generator to the oscillating head (up to 7.5 m deliverable)

Oscillating head with ergonomic handles, LED indicator light and straight-shank mount 12 mm

Magnetic stands (optional)

Earthing cable 2 m with workpiece clamp (up to 7.5 m deliverable)

Front view

14935 103
WiFi inspection camera
- For smartphone and tablet, for Android and IOS devices
- Diameter of camera 8 mm
- Length: 80 mm
- Bending radius 45 mm
- Includes 3 interchangeable magnetic tips

14935 105
Oscillating head mount:
MK2 directly into the sleeve of a machine tool.

Two models are available

eromobil®-er 230 s-ND
- For threads from M2 up to approx. M20
- 220/230 V
- 50 Hz alternating current
- 3.6 kVA
- 16 amp

eromobil®-er 400 t-ND
- For threads from M2 up to approx. M40
- Ideally suited for deep drilled holes and cemented carbide tools
- 380/400 V
- 50 Hz three-phase current
- 6.0 kVA
- 16 amp

Supplied as standard
- Generator in the trolley
- Oscillating head
- Supply hose
- Earthing cable
- Coolant pump
- Coolant tank
- 1 each of open-ended spanner sizes 19 and 24
- 10 splash guard bags

Storage compartment for oscillating head, supply hose and earthing cable

Open cover housing compartment with oscillating head and supply hose

Trolley with footprint for coolant pump and tank, with smooth-running locking rollers

Coolant tank with two chambers for intake and return, with practical carrying handles

Rear view

Tool drawer with internal compartment settings for electrodes, collet chucks, open-ended spanners, splash guard bags and accessories that can be pulled out on smooth-running profile rails

Coolant pump for effective rinsing with approx. 3.4 bar pressure including 2-m intake hose with foot valve and 2-m pressure hose with quick-action coupling (hoses up to 5 m deliverable)

Erosion drill	14934 ...
er 230 s-ND	201
er 400 t-ND	202

Special accessories	14935 ...
WiFi inspection camera	103
Oscillating head mount, MK 2	105

Continued

14936 - 14937 Electrodes and collet chucks for eromobil®

Continued

14936
Copper electrodes
Applications
For tools made of HSS.

Note:
Special electrodes up to a diameter of 30 mm and 1000 mm in length, as well as electrodes made of graphite and tungsten-copper for machining of cemented carbide tools and square copper hollow electrodes from 3 x 3 mm to 30 x 30 mm are deliverable on request.

14937
Collet chucks

14936

14937

Electrode Ø x length mm	for thread M	14936 ...
1.0 x 250	2–2.6	101
1.5 x 250	3	102
2.0 x 250	4	103
2.5 x 250	5	104
3.0 x 250	5–6	105
3.5 x 250	6	106
4.0 x 250	6–8	107
4.5 x 250	8	108
5.0 x 250	8–10	109
6.0 x 250	10	110
7.0 x 250	12	111
8.0 x 250	12–14	112
10.0 x 250	16–20	113

Collet chucks Ø mm	14937 ...
1.0	101
1.5	102
2.0	103
2.5	104
3.0	105
3.5	106
4.0	107
4.5	108
5.0	109
6.0	110
7.0	111
8.0	112
10.0	113

Screw tap sets | Thread-cutting tool sets | Thread repair set

14950 - 14953 Screw tap sets

Design
For standard metric ISO thread DIN 13, right cutting, in sheet-steel box.

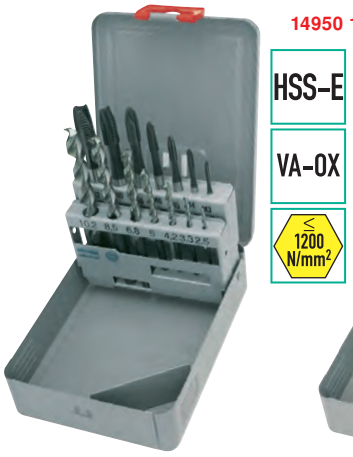
Applications
For cutting in normally machinable materials.

14950 101

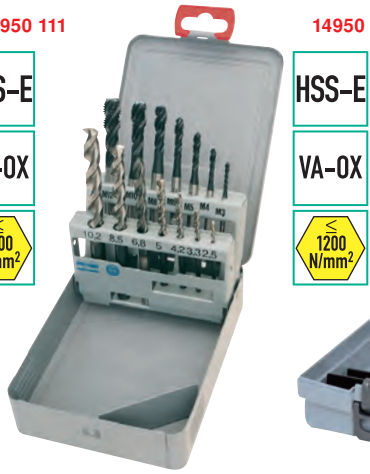
14950 103

14950 105-109

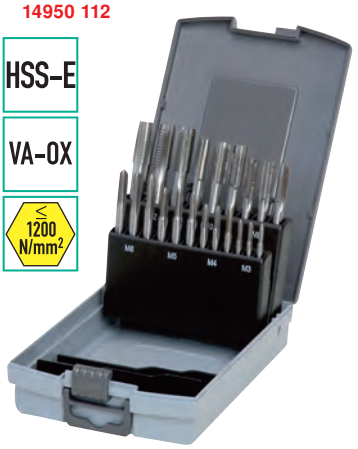
14950 111



14950 112



14951



14952

Art. no.		Contents	Applications
14950 101	Hand tap sets art. no. 14010	M3, M4, M5, M6, M8, M10, M12	for steels up to 800 N/mm²
14950 102	Sheet-steel box, empty for art. no. 14950 101		
14950 103	Hand tap sets art. no. 14010 Core drill art. no. 10001	M3, M4, M5, M6, M8, M10, M12 2.5/3.3/4.2/5.0/6.8/8.5/10.2 mm	for steels up to 800 N/mm²
14950 104	Sheet-steel box, empty for art. no. 14950 103		
14950 105	Machine tap through hole art. no. 14302+14303 Core drill art. no. 10001	M3, M4, M5, M6, M8, M10, M12 2.5/3.3/4.2/5.0/6.8/8.5/10.2 mm	for steels up to 800 N/mm²
14950 109	Machine tap blind hole, 40° spiral-fluted, Art. no. 14401+14407 Core drill art. no. 10001	M3, M4, M5, M6, M8, M10, M12 2.5/3.3/4.2/5.0/6.8/8.5/10.2 mm	for steels up to 800 N/mm²
14950 111	Machine tap through hole art. no. 14338+14339 (VAOX) Core drill art. no. 10050	M3, M4, M5, M6, M8, M10, M12 2.5/3.3/4.2/5.0/6.8/8.5/10.2 mm	Universal for steels up to 1200 N/mm²
14950 112	Machine tap blind hole, 40° spiral-fluted, Art. no. 14436+14437 (VAOX) Core drill art. no. 10050	M3, M4, M5, M6, M8, M10, M12 2.5/3.3/4.2/5.0/6.8/8.5/10.2 mm	Universal for steels up to 1200 N/mm²
14950 110	Sheet-steel box, empty for art. no. 14950 105-109 + 111-112		
14951 101	Hand tap sets art. no. 14014	M3, M4, M5, M6, M8, M10, M12	for steels up to 900 N/mm²
14952 101	Machine tap through hole art. no. 14304+14305 Core drill art. no. 10003	M3, M4, M5, M6, M8, M10, M12 2.5/3.3/4.2/5.0/6.8/8.5/10.2 mm	for steels up to 900 N/mm²
14953 101	Machine tap blind hole, 35° spiral-fluted, Art. no. 14402+14403 Core drill art. no. 10003	M3, M4, M5, M6, M8, M10, M12 2.5/3.3/4.2/5.0/6.8/8.5/10.2 mm	for steels up to 900 N/mm²

Set contents	Design	14950 ...	14951 ...	14952 ...	14953 ...
M 3–M 12 (hand)	straight-grooved	101	101		
Sheet-steel box	empty	102			
M 3–M 12 (hand drill + core drill bits)	straight-grooved	103			
Sheet-steel box	empty	104			
M 3–M 12 (machines + core drill bits)	straight-grooved with spiral point	105		101	
M 3–M 12 (machines + core drill bits)	spiral-fluted approx. 40°	109			
M 3–M 12 (machines + core drill bits)	straight-grooved with spiral point	111			
M 3–M 12 (machines + core drill bits)	spiral-fluted approx. 40°	112			
Sheet-steel box	empty	110			
M 3–M 12 (machines + core drill bits)	spiral-fluted approx. 35°				101

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

14960 - 14962 Thread-cutting tool sets

HSS-E ≤ 900 N/mm²

Design
For standard metric ISO thread DIN 13. Clockwise-cutting. In sheet-steel box.
Applications
For cutting in normally machinable materials.

14960

14960 101

14962 101

14962 103

Art. no.		Contents	Applications
14960 101	Hand tap sets art. no. 14010	M3, M4, M5, M6, M8, M10, M12	for steels up to 900 N/mm²
	Die art. no. 15203	M3, M4, M5, M6, M8, M10, M12	
	Die holder art. no. 23502	25x9	
	Tap wrench art. no. 23130	Size 1.1/2	
14960 102	Sheet-steel box, empty for art. no. 14960 101		
14962 101	Hand tap sets art. no. 14014	M3, M4, M5, M6, M8, M10, M12	for steels up to 900 N/mm²
	Die art. no. 15204	M3, M4, M5, M6, M8, M10, M12	
	Core drill art. no. 10003	2.5/3.3/4.2/5.0/6.8/8.5/10.2	
	Tool holder with ratchet art. no. 23160		
	Die holder art. no. 23502	20x5, 20x7, 25x9, 30x11, 38x14	
	Tap wrench art. no. 23130	Size 1, 2	
	Thread gauge	M/Ww	
	Workshop screwdriver	Size 2.3x80	
14962 102	Sheet-steel box, empty for art. no. 14962 101		
14962 103	Hand tap sets art. no. 14014	M3, M4, M5, M6, M8, M10, M12, M14, M16, M18, M20	for steels up to 900 N/mm²
	Die art. no. 15204	M3, M4, M5, M6, M8, M10, M12, M14, M16, M18, M20	
	Die holder art. no. 23502	20x5, 20x7, 25x9, 30x11, 38x14, 45x18	
	Tap wrench art. no. 23130	Size 1.1/2, 3	
	Thread gauge	M/Ww	
	Workshop screwdriver	Size 2.3x80	

	14960 ...	14962 ...
M 3–M 12	101	
Sheet-steel box, empty	102	
M 3–M 12		101
Sheet-steel box, empty		102
M 3–M 20		103

23197 Thread repair set

HAZET

Design
21 pieces, with HSS high-performance thread-cutting tools. In plastic box with PUR soft foam insert.

Applications
For problem-free retapping of threads, even in hard-to-reach places. Used with reversible ratchet or t-handle square drive 1/4 and 3/8 inch.

23197

Set contents:	
7	screw taps for female thread M3/M4/M5/M6/M8/M10/M12,
7	dies for male thread M3/M4/M5/M6/M8/M10/M12,
1	hexagonal chuck (solid) 6.3 = 1/4 inch for screw tap M3–M6,
1	hexagonal connector (hollow) 6.3 = 1/4 inch, square (hollow) 6.3 = 1/4 inch,
1	hexagonal chuck (solid) 8 = 5/16 inch for screw tap M8–M12,
1	hexagonal connector (hollow) 8 = 5/16 inch, square (hollow) 10 = 3/8 inch,
1	square holder (hollow) 6.3 = 1/4 inch for die M3–M6,
1	square holder (hollow) 10 = 3/8 inch for die M8–M12,
1	Allen key 2.5 mm.

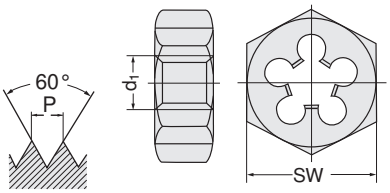
Set contents	23197 ...
21 pieces	101

15110 Hexagonal die DIN 382

M | 6g | HSS | ≤ 800 N/mm²

Design
Clockwise-cutting, approx. 1.75-threaded chamfer.
Applications
For **standard metric ISO thread** DIN 13. Mainly used for re-cutting and evening out damaged threads.
For materials **up to approx. 800 N/mm²** strength.
Quality
HSS.

15110



d_1	P mm	Spanner size mm	15110	...
M 3	0.50	18		101
M 4	0.70	18		103
M 5	0.80	18		104
M 6	1.00	18		105
M 8	1.25	21		106
M 10	1.50	27		107
M 12	1.75	36		108
M 14	2.00	36		109
M 16	2.00	41		110

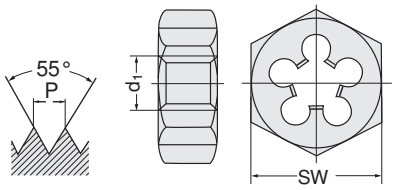
d_1	P mm	Spanner size mm	15110	...
M 18	2.50	41		111
M 20	2.50	41		112
M 22	2.50	50		113
M 24	3.00	50		114
M 27	3.00	60		115
M 30	3.50	60		116
M 33	3.50	60		117
M 36	4.00	60		118

15112 Hexagonal die DIN 382

G | 6g | HSS | ≤ 800 N/mm²

Design
Clockwise-cutting, approx. 1.75-threaded chamfer.
Applications
For **cylindrical Whitworth pipe thread** DIN ISO 228.
Mainly used for re-cutting and evening out damaged threads.
For materials **up to approx. 800 N/mm²** strength.
Quality
HSS.

15112



d_1	P TPI	Spanner size mm	15112	...
Thread 1/8	28	27		101
Thread 1/4	19	36		102
Thread 3/8	19	41		103
Thread 1/2	14	41		104
Thread 3/4	14	50		106
Thread 1	11	60		108

d_1	P TPI	Spanner size mm	15112	...
Thread 1.1/8	11	70		109
Thread 1.1/4	11	70		110
Thread 1.1/2	11	85		112
Thread 1.3/4	11	100		114
Thread 2	11	100		116

15203 - 15204 Die DIN EN 22 568

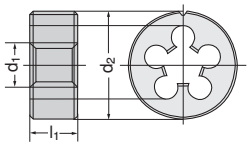
M | 6g | HSS | ≤ 800 N/mm²

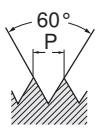
Design
Closed (pre-slotted), **from M 3 with spiral point** for ultra-easy, clean cuts and improved surface quality. Clockwise-cutting. **Tolerances: 6H up to M 1.4 and 6 g above.** Chip angle of 15–20°, approx. 1.75 thread chamfer.
Applications
For **standard metric ISO thread** DIN 13.
For normal, machinable materials **up to approx. 800 N/mm²** strength.
Quality
HSS.

15203
ATORN®
15203 501-507
With the same exterior dimensions (25 x 9 mm).
For thread cutting tool kit art. no.14960 101.

15204

15203





d_1	P mm	d_2 x l_1 mm	ATORN® 15203	...	HHW 15204	...
M 1	0.25	16 x 5		201		
M 1.1	0.25	16 x 5		202		
M 1.2	0.25	16 x 5		203		
M 1.4	0.30	16 x 5		204		
M 1.6	0.35	16 x 5		205		
M 1.8	0.35	16 x 5		207		
M 2	0.40	16 x 5		208		
M 2.2	0.45	16 x 5		209		
M 2.5	0.45	16 x 5		211		
M 3	0.50	20 x 5		213		103
M 3.5	0.60	20 x 5		214		
M 4	0.70	20 x 5		215		104
M 4.5	0.75	20 x 7		216		
M 5	0.80	20 x 7		217		105
M 6	1.00	20 x 7		218		106
M 7	1.00	25 x 9		219		
M 8	1.25	25 x 9		220		107
M 9	1.25	25 x 9		221		
M 10	1.50	30 x 11		222		108
M 11	1.50	30 x 11		223		

d_1	P mm	d_2 x l_1 mm	ATORN® 15203	...	HHW 15204	...
M 12	1.75	38 x 14		224		109
M 14	2.00	38 x 14		225		110
M 16	2.00	45 x 18		226		111
M 18	2.50	45 x 18		227		112
M 20	2.50	45 x 18		228		113
M 22	2.50	55 x 22		229		
M 24	3.00	55 x 22		230		
M 27	3.00	65 x 25		231		
M 30	3.50	65 x 25		232		
M 33	3.50	65 x 25		233		
M 36	4.00	65 x 25		234		
M 39	4.00	75 x 30		235		
M 42	4.50	75 x 30		236		
M 3	0.50	25 x 9		501		
M 4	0.70	25 x 9		502		
M 5	0.80	25 x 9		503		
M 6	1.00	25 x 9		504		
M 10	1.50	25 x 9		506		
M 12	1.75	25 x 9		507		

Die

15205 Die set

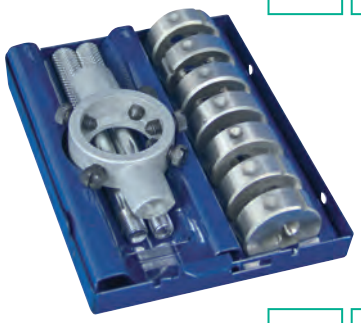
M | 6g | HSS | ≤ 750 N/mm²

HHW

Design
Contents:
- 7 metric dies M3–M 12 (25 x 9)
- 1 die holder in accordance with DIN 225 with chrome-plated handles
- In painted metal box

Applications
For **standard metric ISO thread** DIN 13.

Quality
HSS.



15205

Contents	15205 ...
8 pieces	101

15206 Die DIN EN 22 568

M | 6g | HSS | ≤ 850 N/mm²

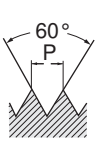
EMUGE

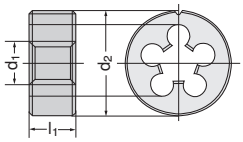
Design
Closed (pre-slotted), **with spiral point** for ultra-easy, clean cuts and improved surface quality. Clockwise-cutting. **Tolerance class ISO 6G.** Approx. 1.1/2-threaded chamfer.

Applications
For **standard metric ISO thread** DIN 13.
For materials **up to approx. 850 N/mm²** strength.

Quality
HSS.

15206





d_1	P mm	d_2 x l_1 mm	15206 ...
M 3	0.50	20 x 5	213
M 4	0.70	20 x 5	215
M 5	0.80	20 x 7	217
M 6	1.00	20 x 7	218
M 8	1.25	25 x 9	220
M 10	1.50	30 x 11	222
M 12	1.75	38 x 14	224
M 16	2.00	45 x 18	226
M 20	2.50	45 x 18	228

15207 - 15208 Die DIN EN 22 568

M | 6g | HSS-E | ≤ 1200 N/mm² | ≤ 1100 N/mm²

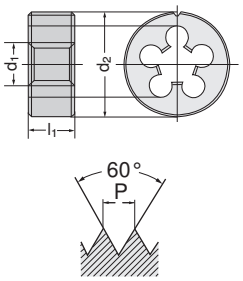
Design
Closed (pre-slotted), **with spiral point** for ultra-easy, clean cuts and improved surface quality. Clockwise-cutting. **Tolerance class ISO 6G.** Approx. 2-threaded chamfer.

Applications
For **standard metric ISO thread** DIN 13.
For materials that are difficult to machine **up to approx. 850–1200 N/mm²** strength, rust and acid-resistant steels **(VA).**

Quality
HSS-E (no. 15207 nitrided from M3 up).

15207
ATORN®
10–15° chip angle.

15208
EMUGE



15207

d_1	P mm	d_2 x l_1 mm	ATORN® 15207 ...	EMUGE 15208 ...
M 2	0.40	16 x 5	101	
M 2.5	0.45	16 x 5	104	
M 3	0.50	20 x 5	106	106
M 4	0.70	20 x 5	108	108
M 5	0.80	20 x 7	109	109
M 6	1.00	20 x 7	110	110
M 8	1.25	25 x 9	112	112
M 10	1.50	30 x 11	113	113
M 12	1.75	38 x 14	114	114
M 16	2.00	45 x 18	116	116
M 20	2.50	45 x 18	118	
M 24	3.00	55 x 22	120	

15211 Anti-clockwise cutting die DIN EN 22 568

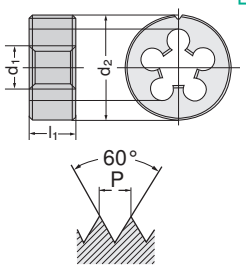
M | 6g | HSS | ≤ 800 N/mm²

ATORN®

Design
- Closed (pre-slotted)
- **With spiral point** for ultra-easy, clean cuts and improved surface quality
- **6G tolerance class**
- Approx-15°–20° chip angle
- Approx. 1.75-threaded chamfer

Applications
For **standard metric ISO thread** DIN 13.
For materials **up to approx. 800 N/mm².**

Quality
HSS.



15211

d_1	P mm	d_2 x l_1 mm	15211 ...
M 3	0.50	20 x 5	101
M 4	0.70	20 x 5	102
M 5	0.80	20 x 7	103
M 6	1.00	20 x 7	104
M 8	1.25	25 x 9	105
M 10	1.50	30 x 11	106
M 12	1.75	38 x 14	107
M 14	2.00	38 x 14	108
M 16	2.00	45 x 18	109
M 18	2.50	45 x 18	110
M 20	2.50	45 x 18	111
M 22	2.50	55 x 22	112
M 24	3.00	55 x 22	113

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

15219 - 15221 Die DIN EN 22 568

MF | 6g | HSS | HSS-E | ≤ 800 N/mm² | ≤ 1200 N/mm²

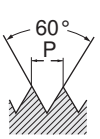
Design
Closed (pre-slotted), **with spiral point** for ultra-easy, clean cuts and improved surface quality. Clockwise-cutting. **6G tolerance class.** 15–20° chip angle, 1.75-threaded chamfer.
Applications
For **metric ISO fine threads** DIN 13.

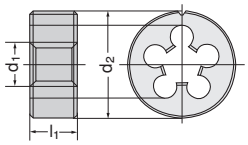
15220
ATORN®
Applications
For materials **up to approx. 800 N/mm²** strength.
Quality
HSS.

15221
HHW
Applications
For materials, steel **up to approx. 800 N/mm²** strength.
Quality
HSS.

15219
ATORN®
Applications
For materials that are difficult to machine **up to approx. 850–1200 N/mm²** strength, rust and acid-resistant steels **(VA).**
Quality
HSS-E.

15220





d_1 x P mm	d_2 x l_1 mm	ATORN® 15220	...	HHW 15221	...	ATORN® 15219	...
M 3 x 0.35	20 x 5		104				
M 3.5 x 0.35	20 x 5		105				
M 4 x 0.35	20 x 5		106				
M 4 x 0.50	20 x 5		107				
M 5 x 0.50	20 x 5		108				108
M 6 x 0.50	20 x 5		109				
M 6 x 0.75	20 x 7		110				110
M 7 x 0.75	25 x 9		111				
M 8 x 0.50	25 x 9		112				
M 8 x 0.75	25 x 9		113				113
M 8 x 1.00	25 x 9		114		214		
M 9 x 1.00	25 x 9		115				
M 10 x 0.75	30 x 11		116				
M 10 x 1.00	30 x 11		117		217		117
M 10 x 1.25	30 x 11		118		218		
M 11 x 1.00	30 x 11		119				
M 12 x 1.00	38 x 10		120		220		120
M 12 x 1.25	38 x 10		121		221		
M 12 x 1.50	38 x 10		122		222		121
M 14 x 1.00	38 x 10		123		223		
M 14 x 1.25	38 x 10		124		224		
M 14 x 1.50	38 x 10		125		225		125
M 15 x 1.00	38 x 10		126				
M 15 x 1.50	38 x 10		127				
M 16 x 1.00	45 x 14		128		228		
M 16 x 1.50	45 x 14		129		229		129
M 18 x 1.00	45 x 14		130				
M 18 x 1.50	45 x 14		131		231		131
M 18 x 2.00	45 x 14		132				
M 20 x 1.00	45 x 14		133		233		

d_1 x P mm	d_2 x l_1 mm	ATORN® 15220	...	HHW 15221	...	ATORN® 15219	...
M 20 x 1.50	45 x 14		134		234		134
M 20 x 2.00	45 x 14		135				
M 22 x 1.00	55 x 16		136				
M 22 x 1.50	55 x 16		137		237		137
M 22 x 2.00	55 x 16		138				
M 24 x 1.00	55 x 16		139				
M 24 x 1.50	55 x 16		140		240		140
M 24 x 2.00	55 x 16		141				
M 25 x 1.50	55 x 16		142				
M 26 x 1.50	55 x 16		143				
M 27 x 1.50	65 x 18		144				
M 27 x 2.00	65 x 18		145				
M 28 x 1.50	65 x 18		146				
M 30 x 1.00	65 x 18		147				
M 30 x 1.50	65 x 18		148				148
M 30 x 2.00	65 x 18		149				
M 32 x 1.50	65 x 18		150				
M 33 x 1.50	65 x 18		151				
M 33 x 2.00	65 x 18		152				
M 34 x 1.50	65 x 18		153				
M 36 x 1.50	65 x 18		154				
M 36 x 2.00	65 x 18		155				
M 36 x 3.00	65 x 25		156				
M 38 x 1.50	75 x 20		157				
M 40 x 1.50	75 x 20		158				
M 42 x 1.50	75 x 20		159				
M 45 x 1.50	90 x 22		160				
M 48 x 1.50	90 x 22		161				
M 50 x 1.50	90 x 22		162				
M 52 x 1.50	90 x 22		163				

15222 Die DIN EN 22 568

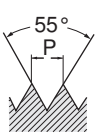
BSW | HSS | ≤ 800 N/mm²

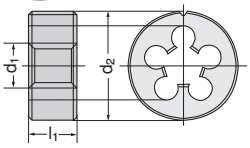
ATORN®
Design
- Closed (pre-slotted)
- **With spiral point** for ultra-easy, clean cuts and improved surface quality
- Right cutting
- Approx. 1.75-threaded chamfer

Applications
For **Whitworth thread** BS 84. For materials, steel **up to approx. 800 N/mm²** strength.

Quality
HSS.

15222





d_1	P TPI	d_2 x l_1 mm	15222	...
BSW 1/8	40	20 x 5		101
BSW 3/16	24	20 x 7		102
BSW 1/4	20	20 x 7		103
BSW 5/16	18	25 x 9		104

d_1	P TPI	d_2 x l_1 mm	15222	...
BSW 3/8	16	30 x 11		105
BSW 1/2	12	38 x 14		106
BSW 5/8	11	45 x 18		107
BSW 3/4	10	45 x 18		108

d_1	P TPI	d_2 x l_1 mm	15222	...
BSW 7/8	9	55 x 22		109
BSW 1	8	55 x 22		110

Die

15233 - 15234 Die DIN EN 24 231

G | HSS | ≤ 800 N/mm²

Design
- Closed (pre-slotted)
- **With spiral point** for ultra-easy, clean cuts and improved surface quality
- Right cutting
- Approx. 1.75-threaded chamfer

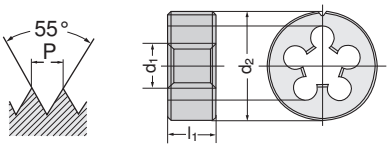
Applications
For **cylindrical Whitworth pipe threads** DIN ISO 228.
For materials **up to approx. 800 N/mm²** strength.

Quality
HSS.

15233 ATORN®

15234 HHW

15233



d1	P TPI	d2 x l1 mm	ATORN® 15233	...	HHW 15234	...
Thread 1/8	28	30 x 11		101		101
Thread 1/4	19	38 x 10		102		102
Thread 3/8	19	45 x 14		103		103
Thread 1/2	14	45 x 14		104		104
Thread 5/8	14	55 x 16		105		

d1	P TPI	d2 x l1 mm	ATORN® 15233	...	HHW 15234	...
Thread 3/4	14	55 x 16		106		106
Thread 7/8	14	65 x 18		107		
Thread 1.	11	65 x 18		108		108
Thread 1.1/4	11	75 x 20		109		
Thread 1.1/2	11	90 x 22		111		

15314 - 15316 Die DIN EN 22 568

UNC | UNF | HSS | ≤ 800 N/mm²

ATORN®

Design
- Closed (pre-slotted)
- **From UNC/UNF no. 5 with spiral point** for ultra-easy, clean cuts and improved surface quality
- Right cutting
- Approx. 1.75-threaded chamfer

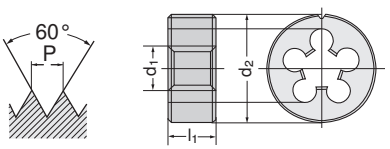
Applications
For **American standard threads UNC, UNF.** For materials **up to approx. 800 N/mm²** strength.

Quality
HSS.

15314
Design
Unified coarse thread UNC.

15316
Design
Unified fine thread UNF.

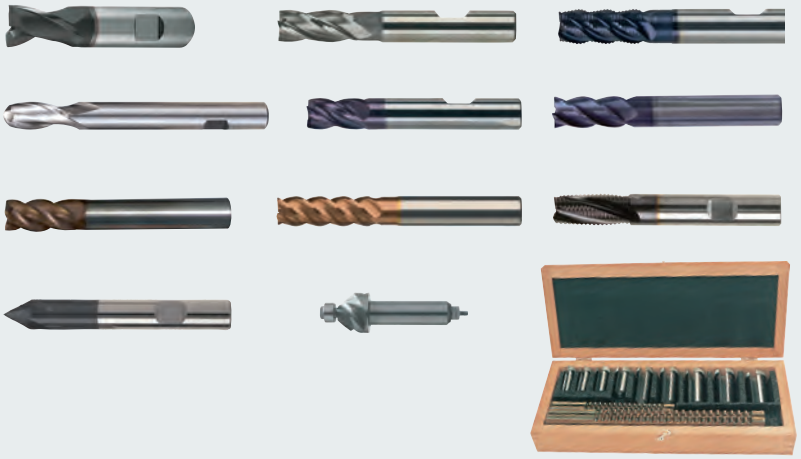
15314



d1	P TPI	d2 x l1 mm	UNC 15314	...
No. 1	64	16 x 5		102
No. 2	56	16 x 5		103
No. 3	48	16 x 5		104
No. 4	40	16 x 5		105
No. 5	40	20 x 5		106
No. 6	32	20 x 7		107
No. 8	32	20 x 7		108
No. 10	24	20 x 7		109
No. 12	24	20 x 7		110
1/4	20	20 x 7		111
5/16	18	25 x 9		112
3/8	16	30 x 11		113
7/16	14	30 x 11		114
1/2	13	38 x 14		115
9/16	12	38 x 14		116
5/8	11	45 x 18		117
3/4	10	45 x 18		118
7/8	9	55 x 22		119
1.	8	55 x 22		120

d1	P TPI	d2 x l1 mm	UNF 15316	...
No. 0	80	16 x 5		101
No. 1	72	16 x 5		102
No. 2	64	16 x 5		103
No. 3	56	16 x 5		104
No. 4	48	16 x 5		105
No. 5	44	20 x 5		106
No. 6	40	20 x 7		107
No. 8	36	20 x 7		108
No. 10	32	20 x 7		109
No. 12	28	20 x 7		110
1/4	28	20 x 7		111
5/16	24	25 x 9		112
3/8	24	30 x 11		113
7/16	20	30 x 11		114
1/2	20	38 x 10		115
9/16	18	38 x 10		116
5/8	18	45 x 14		117
3/4	16	45 x 14		118
7/8	14	55 x 16		119
1.	12	55 x 16		120

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.



- *HSS: square end mills*
  finishing cutters
  roughing cutters
  radius cutters
- *Solid carbide:- end mills, universal*
  - end mills RockTec 52 and 65
  - end mills, ALU
  - roughing cutters
  - deburring tools
  - profiling cutters
- *Broaches*

16
16.3 – 16.122

- *Saw blades in HSS/solid carbide*
- *Shell end mills*
- *Profiling cutters with hole*
- *Indexable inserts for:- end mills*
  - Face/angular milling cutters
  - Chamfer cutters
  - Disc milling cutters
  - Core drills
- *Indexable milling inserts*

17
17.1 – 17.76

Our suppliers for MILLING TOOLS:

ATORN®

HHW

CUTTING SOLUTIONS BY CERATIZIT

Dümmel® WERKZEUGFABRIK

Info — Coatings for machining tools

Advantages:

- Longer service life
- Higher productivity
- Fewer tool changes
- High-speed machining
- Hard machining
- No emulsion due to dry machining
- Lower tool costs

Coating	ZrN	TiN	TiCN	TiAlN	Alcrona	Hardlube	Rocktec 52	Rocktec 65	Ultra-N	Ultra Npro	Ultra MS	Ultra DC
Micro-hardness (HV 0.05)	2,800	2,300	3,000	3,300	3,200	3,000	3,300	3,600	3,100	6,000	3,200	10,000
Friction coefficient vs. steel (dry)	–	0.4	0.4	0.30 - 0.35	0.35	0.15 - 0.20	0.4	0.4	–	–	0.35	–
Max. application temperature (°C)	1,100	600	400	900	1,100	800	900	1,200	900	550	1,100	700
Coating colour	Light yellow	Gold-yellow	Blue-grey	Purple-grey	Blue-grey	Dark grey	Grey-blue	Copper-coloured	Brownish silver	Rainbow	Blue-grey	Grey
Al alloy	○				○				○	○		
Copper	○								○	○		
Non-ferrous metals	○								○	○		
Plastic					○				○	○		
CFK												○
GFK										○		○
Graphite												○
Low alloy steels		○	○	○	○	○	○				○	
High-alloy steels		○	○	○	○	○	○	○			○	
Tempered steels up to 52 HRC				○			○	○				
Tempered steels up to 65 HRC				○				○				
Stainless steels			○	○		○					○	
Cast iron			○	○								
Titanium alloy				○		○					○	
Super alloy				○		○					○	

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info

Overview of HSS-E and PM (powder steel) cutters (I)

Brand	HHW	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16010	16020	16022	16030	16032	16060	16062	16073	16074	16094	16096
Standard/DIN	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	327D	327D	327D	327D	844B	844B
Number of cutting edges	1	3	3	3	3	2	2	2	2	3	3
Diameter range mm	3 - 10	1 - 20	1 - 12	2 - 10	2 - 8	1 - 40	1 - 25	2.5 - 25	2.5 - 20	1.5 - 30	1.5 - 30
Cutting material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
Coating	Co5	–	TiAlN	–	TiAlN	–	TiAlN	–	TiAlN	-	TiAlN
Version	Short	Short	Short	Long	Long	Short	Short	Long	Long	Short	Short
Type / Profile	-	N	N	N	N	N	N	N	N	N	N
Catalogue page	16.21	16.22	16.22	16.22	16.22	16.23	16.23	16.23	16.23	16.24	16.24
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si	●	○	○	○	○	○	○	○	●	○	○
Aluminium > 10% Si	●	○	○	○	○	○	○	○	●	○	○
Copper		○	○	○	○	○	○	○		○	○
Plastics		○	○	○	○	○	○	○	○	○	○
Graphite											
Steel < 520 N		●	●	●	●	●	●	●		●	●
Steel < 750 N		●	●	●	●	●	●	●		●	●
Steel < 900 N		●	●	●	●	●	●	●		●	●
Steel < 1100 N			●		●		●				●
Steel < 1200 N			●		●		●				●
Steel < 1400 N											
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG		○	○	○	○	○	○	○	○	○	○
GGG		○	○	○	○	○	○	○	○	○	○
VA < 900 N		○	○	○	○	○	○	○	○	○	○
VA > 900 N		○	○	○	○	○	○	○	○		○
Titanium											
Titanium alloy											
Nickel base											

Brand	HHW	ATORN	ATORN	ATORN	ATORN	HHW	ATORN	ATORN	HHW	HHW	HHW
Article number	16100	16104	16105	16120	16122	16131	16128	16129	16133	16134	16150
Standard/DIN	844B	844B	844B	844B	844B	844B	844B	844B	Factory standard	Factory standard	844B
Number of cutting edges	3	3	3	4 - 6	4 - 6	4 - 6	4 - 6	4 - 5	4 - 6	4 - 6	6 - 8
Diameter range mm	4 - 20	2 - 20	2 - 20	2 - 40	2 - 32	5 - 30	2 - 32	2 - 25	6 - 25	6 - 25	30 - 50
Cutting material	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
Coating	TiAlN	–	TiAlN	–	TiAlN	TiAlN	–	TiAlN	–	TiAlN	–
Version	Short	Long	Long	Short	Short	Short	Long	Long	Overlong	Overlong	Short
Type / Profile	N	N	N	N	N	N	N	N	N	N	N
Catalogue page	16.24	16.25	16.25	16.26	16.26	16.26	16.27	16.27	16.28	16.28	16.28
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si	○	○	○	○	○	○	○	○	○	○	○
Aluminium > 10% Si	○	○	○	○	○	○	○	○	○	○	○
Copper	○	○	○	○	○	○	○	○	○	○	○
Plastics		○	○	○	○		○	○	○	○	○
Graphite											
Steel < 520 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1100 N			●	●		●		●		●	
Steel < 1200 N			●	●		●		●		●	
Steel < 1400 N				●		●					
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC					○	○					
GG	●	○	○	○	○	●	○	○	○	○	○
GGG	●	○	○	○	○	●	○	○	○	○	○
VA < 900 N	●	○	○	○	○	●	○	○	○	○	○
VA > 900 N	●	○	○	○	○	●	○	○	○	○	○
Titanium	●					●					
Titanium alloy	●					●					
Nickel base	○					○					

Info

Overview of HSS-E and PM (powder steel) cutters (II)

Brand	HHW	HHW	HHW	HHW	ATORN	ATORN	ATORN	ATORN	HHW	HHW	HHW
Article number	16153	16158	16161	16170	16176	16177	16183	16185	16195	16198	16200
Standard/DIN	844B	844B	844B	Factory standard	Factory standard	Factory standard	844B	844B	844B	844B	844B
Number of cutting edges	2	3	3	2	2	2	3	3	4 - 6	4 - 6	4 - 6
Diameter range mm	2 - 22	3 - 20	3 - 20	2 - 20	2 - 30	2 - 20	6 - 25	6 - 25	10 - 40	10 - 40	8 - 36
Cutting material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
Coating	–	–	–	–	–	TiAlN	–	TiAlN	–	TiAlN	–
Version	Short	Short	Long	Short	Long	Long	Short	Short	Short	Short	Long
Type / Profile	W	W	W	-	-	-	NR	NR	NR	NR	NR
Catalogue page	16.28	16.29	16.29	16.29	16.30	16.30	16.30	16.30	16.31	16.31	16.31
Recommended application	● = well-suited	○ = limited suitability									
Aluminium < 10% Si	●	●	●	○	○	○	○	○	○	○	○
Aluminium > 10% Si	●	●	●	○	○	○	○	○	○	○	○
Copper	●	●	●	○	○	○	○	○	○	○	○
Plastics			○	○	○		○		○	○	○
Graphite											
Steel < 520 N				●	●	●	●	●	●	●	●
Steel < 750 N				●	●	●	●	●	●	●	●
Steel < 900 N				●	●	●	●	●	●	●	●
Steel < 1100 N						●		●		●	
Steel < 1200 N						●		●		●	
Steel < 1400 N											
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG				○	○	○	○	○	○	○	○
GGG				○	○	○	○	○	○	○	○
VA < 900 N				○	○	○	○	○	○	○	○
VA > 900 N				○	○	○	○	○	○	○	○
Titanium											
Titanium alloy											
Nickel base											

Brand	HHW	HHW	HHW	HHW	HHW	HHW	HHW	ATORN	HHW	HHW	HHW
Article number	16209	16205	16220	16223	16260	16262	16268	16270	16277	16278	16281
Standard/DIN	Factory standard	Factory standard	844B	844B	844B	844B	844B	844B	844B	844B	844B
Number of cutting edges	4 - 5	6 - 8	3	3	4 - 6	4 - 6	4 - 6	3 - 6	3 - 5	3 - 6	3 - 4
Diameter range mm	6 - 25	30 - 50	6 - 30	6 - 40	6 - 25	6 - 25	6 - 30	4 - 25	6 - 25	6 - 30	6 - 25
Cutting material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E-PM	HSS-E-PM	HSS-E	HSS-E	HSS-E
Coating	TiAlN	–	–	TiAlN	–	TiAlN	TiAlN	TiAlN	–	TiAlN	TiAlN
Version	Overlong	Short	Short	Short	Short	Short	Short	Short	Long	Long	Short
Type / Profile	NR	NR	NF	NF	HR	HR	HR	HPC	HR	HR	HR
Catalogue page	16.32	16.32	16.32	16.32	16.33	16.33	16.33	16.33	16.34	16.34	16.34
Recommended application	● = well-suited	○ = limited suitability									
Aluminium < 10% Si	○	○	○	○	○	○	○	●	○	○	○
Aluminium > 10% Si	○	○	○	○	○	○	○	●	○	○	○
Copper	○	○	○	○	○	○	○	●	○	○	○
Plastic	○	○	○	○	○	○	○		○	○	○
Graphite											
Steel < 520 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1100 N	●			●			●	●	●	●	●
Steel < 1200 N	●			●			●	●	●	●	●
Steel < 1400 N											
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG	○	○	○	○	○	○	○		○	○	○
GGG	○	○	○	○	○	○	○		○	○	○
VA < 900 N	○	○	○	○	○	○	○	●	○	○	○
VA > 900 N	○	○	○	○	○	○	○	●	○	○	○
Titanium								●			
Titanium alloy								●			
Nickel base								●			

Overview of HSS-E and PM (powder steel) cutters (III)

Brand	HHW	HHW	HHW	HHW	HHW	HHW	HHW
Article number	16370	16375	16380	16381	16382	16383	16385
Standard/DIN	851	850D	1833C	1833C	1833D	1833D	6518B
Number of cutting edges	6 - 8	6 - 12	10 - 12	10 - 12	10 - 12	10 - 12	4
Diameter range mm	6 - 22	10.5 - 45.5	16 - 32	16 - 32	16 - 32	16 - 32	1 - 20
Cutting material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
Coating	–	–	–	–	–	–	–
Version	Short	Short	Short	Short	Short	Short	Short
Type / Profile	N	N	H	H	H	H	N
Catalogue page	16.35	16.35	16.36	16.36	16.36	16.36	16.36
Recommended application	● = well-suited ○ = limited suitability						
Aluminium < 10% Si	○	○	○	○	○	○	○
Aluminium > 10% Si	○	○	○	○	○	○	○
Copper	○	○	○	○	○	○	○
Plastic	○	○	○	○	○	○	○
Graphite							
Steel < 520 N	●	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●
Steel < 1100 N	●	●	●	●	●	●	●
Steel < 1200 N							
Steel < 1400 N							
Hardox							
< 50 HRC							
< 60 HRC							
< 67 HRC							
GG	○	○	○	○	○	○	○
GGG	○	○	○	○	○	○	○
VA < 900 N	○	○	○	○	○	○	○
VA > 900 N	○	○		○	○	○	○
Titanium							
Titanium alloy							
Nickel base							

Overview of VHM universal milling cutters (I)

Brand	HHW	HHW	HHW	HHW	ATORN	HHW	HHW	HHW	ATORN	ATORN	HHW	ATORN	ATORN
Article number	16500	16502	16505	16507	16603	16517	16522	16524	16605	16607	16532	16606	16612
	NEW	NEW											
Number of cutting edges	3	3	2	2	2	2	3	3	3	3	3	3	3
Diameter range mm	2 - 18	1.5 - 12	2 - 20	2 - 20	0.25 - 20	3 - 20	2 - 20	2 - 20	2 - 20	2 - 20	3 - 20	2.8 - 20	3.5 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	-	TiAlN	–	TiAlN	TiAlN-Ultra	TiAlN	–	TiAlN	TiAlN-Ultra	TiAlN-Ultra	TiAlN	TiAlN-Ultra	TiAlN-Ultra
Version	Mini	Mini	Short	Short	Short	Short	Short	Short	Extra short	Short	Short	Short	Long
Type / Profile	N	N	N	N	N	N	N	N	N	N	N	N	N
Catalogue page	16.37	16.37	16.37	16.37	16.38	16.38	16.39	16.39	16.39	16.40	16.40	16.41	16.42
Recommended application	● = well-suited	○ = limited suitability											
Aluminium < 8% Si	○	○	○	○	○				○	○		○	○
Aluminium > 8% Si	○	○	○	○	●				●	●		●	●
Copper	○	○	○	○	●				●	●		●	●
Plastics	●	○	○	○									
Graphite													
Steel < 520 N	●	●	●	●	●	●	●	●	●	●		●	●
Steel < 750 N	●	●	●	●	●	●	●	●	●	●		●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●		●	●
Steel < 1100 N	●	●	●	●	●	●	●	●	●	●		●	●
Steel < 1200 N	●	●	●	●	●	●	●	●	●	●		●	●
Steel < 1400 N	●	●	●	●		●	●	●			●		
Hardox													
< 50 HRC													
< 60 HRC													
< 67 HRC													
GG	●	●	●	●	●	●	●	●	●	●	●	●	●
GGG	●	●	●	●	●	●	●	●	●	●	●	●	●
VA < 900 N	○	●	○	●	●	●		●	●	●	●	●	●
VA > 900 N	○	●	○	●	○	●		●	○	○	●	○	○
Titanium					○				○	○		○	○
Titanium alloy					○				○	○		○	○
Nickel base					○				○	○		○	○

Brand	ATORN	HHW	HHW	HHW	HHW	HHW	ATORN	HHW	HHW	HHW	HHW
Article number	16618	16552	16537	16539	16542	16543	16610	16545	16547	16548	16549
Number of cutting edges	4	4	4	4	4	4	4	4	4	4	4
Diameter range mm	2 - 20	5.7 - 20	2 - 20	2 - 20	4 - 16	4 - 20	2 - 20	3 - 20	3 - 20	3 - 12	3 - 12
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN-Ultra	AlCrN	–	TiAlN	–	TiAlN	TiAlN-Ultra	–	TiAlN	–	TiAlN
Version	Short	Short	Short	Short	Short	Short	Short	Short	Short	Overlong	Overlong
Type / Profile	N	HPC	N	N	N	N	HPC	N	N	N	N
Catalogue page	16.43	16.43	16.44	16.44	16.44	16.44	16.45	16.45	16.45	16.46	16.46
Recommended application	● = well-suited	○ = limited suitability									
Aluminium < 8% Si	○		○	○	○	○	○	○	○	○	○
Aluminium > 8% Si	●		○	○	○	○	●	○	○	○	○
Copper	●		○	○	○	○	●	○	○	○	○
Plastics			○	○	○	○		○	○	○	○
Graphite											
Steel < 520 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1100 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1200 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1400 N		●		●		●			●		●
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG	●	●	●	●	●	●	●	●	●	●	●
GGG	●	●	●	●	●	●	●	●	●	●	●
VA < 900 N	●	●	○	○	○	○	●	○	○	○	○
VA > 900 N	○	●	○	○	○	○	○	○	○	○	○
Titanium	○	○					○				
Titanium alloy	○	○					○				
Nickel base	○	○					○				

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Info

Overview of VHM universal milling cutters (II)

Brand	ATORN	ATORN	HHW	HHW	HHW	HHW	HHW	HHW	ATORN	HHW	HHW
Article number	16527 1..	16527 2..	16592 NEW	16593 NEW	16594 NEW	16534 1..	16534 3..	16536	16627	16538	16540
Number of cutting edges	4	4	4	4	4	4	4	4	4	4	4
Diameter range mm	1 - 20	1 - 20	3 - 20	3 - 20	6 - 20	3 - 20	4 - 20	4 - 20	3 - 20	6 - 20	4 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	TiAlN	Varocon	Varocon	Varocon	TiAlN	TiAlN	TiAlN	TiAlN Ultra	TiAlN	TiAlN
Version	Short	Short	Short	Long	Overlong	Long	Long	Long/released	Short	Long m. IK	Long
Type / Profile	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC
Catalogue page	16.46	16.46	16.47	16.47	16.47	16.48	16.48	16.49	16.49	16.50	16.50
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 8% Si											
Aluminium > 8% Si											
Copper											
Plastics											
Graphite											
Steel < 520 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1100 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1200 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1400 N	●	●	●	●	●	●	●	●	●	●	●
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG	●	●	●	●	●	●	●	●	●	●	
GGG	●	●	●	●	●	●	●	●	●	●	
VA < 900 N						○	○	○		○	○
VA > 900 N						○	○	○		○	○
Titanium											
Titanium alloy											
Nickel base											

Brand	HHW	HHW	ATORN	ATORN	ATORN	ATORN	HHW	HHW	ATORN	ATORN	ATORN
Article number	16554	16555	16640	16616 2..	16616 3..	16616 4..	16551	16553	16642	16643	16646 1..
Number of cutting edges	4	4	4	6 - 8	6 - 8	6 - 8	6 - 8	6 - 8	2	4	4
Diameter range mm	5 - 20	5 - 25	3 - 20	4 - 20	6 - 20	6 - 20	6 - 20	6 - 20	3 - 20	6 - 16	6 - 16
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	TiAlN	TiAlN-Ultra	TiAlN-Ultra	TiAlN-Ultra	TiAlN-Ultra	TiAlN	TiAlN	TiAlN-Ultra	TiAlN-Ultra	TiAlN-Ultra
Version	Long	Overlong	Short	Short	Long	Overlong	Short	Long	Long	Short	Long
Type / Profile	HPC	HPC	HSC	N	N	N	N	N	N	NR	N
Catalogue page	16.51	16.51	16.52	16.53	16.53	16.53	16.53	16.54	16.54	16.54	16.55
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si	○	○		○	○	○			○		
Aluminium > 10% Si	○	○	●	●	●	●			●		●
Copper	○	○	●	●	●	●			●		●
Plastics									●		●
Graphite											
Steel < 520 N	●	●	●	●	●	●	●	●	○	●	●
Steel < 750 N	●	●	●	●	●	●	●	●	○	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	○	●	●
Steel < 1100 N	●	●	●	●	●	●	●	●	○	●	●
Steel < 1200 N	●	●	●	●	●	●	●	●	○	●	●
Steel < 1400 N	●	●	●				●	●	○		
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG	●	●	●	●	●	●	●	●	●	●	●
GGG	●	●	●	●	●	●	●	●	●	●	●
VA < 900N	○	○	●	●	●	●	○	○	●		●
VA > 900N	○	○	●	○	○	○	○	○	●		○
Titanium	○	○	●	○	○	○			○		○
Titanium alloy	○	○	●	○	○	○			○		○
Nickel base	○	○	●	○	○	○			○		○

Info

Overview of VHM universal milling cutters (III)

Brand	ATORN	HW	HW	HW	HW	ATORN	HW	HW	HW	HW	HW	HW
Article number	16646 2..	16557	16559 201	16559 202-208	16561	16628	16565	16567	16569	16650	16651	16629
Number of cutting edges	4	2	2	2	4	3 - 4	4	4	4	3 - 6	3 - 6	3 - 4
Diameter range mm	6 - 12	3 - 20	2	3 - 20	3 - 20	4 - 20	5 - 20	3 - 16	6 - 20	4 - 25	4 - 25	6 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN-Ultra	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN-Ultra	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN
Version	Overlong	Short	Long	Long	Short	Short	Short	Long	Long m. IK	Short	Short	Long
Type / Profile	N	-	-	-	-	NR	NF	HR	HR	HR	HR	HR
Catalogue page	16.55	16.55	16.55	16.55	16.56	16.56	16.57	16.57	16.57	16.58	16.58	16.58
Recommended application	● = well-suited ○ = limited suitability											
Aluminium < 8% Si						●						
Aluminium > 8% Si	●					●						
Copper	●					●						
Plastics	●											
Graphite												
Steel < 520 N	●	●	●	●	●	○	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	○	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 1100 N	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 1200 N	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 1400 N		●	●	●	●	●	●	●	●	●	●	●
Hardox												
< 50 HRC										●	●	
< 60 HRC												
< 67 HRC												
GG	●	●	●	●	●	○	●	●	●	●	●	●
GGG	●	●	●	●	●	○	●	●	●	●	●	●
VA < 900 N	●	○	○	○	○	●	○	○	○	○	○	○
VA > 900 N	○	○	○	○	○	●	○	○	○	○	○	○
Titanium	○					●						
Titanium alloy	○					●						
Nickel base	○					●						

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Overview of special milling cutters (I)

Brand	HHW	HHW	ATORN	ATORN	ATORN	HHW	HHW	HHW	HHW	HHW	HHW
Article number	16580	16575	16570	16571	16573	16583	16660	16661	16662 1..	16662 2..	16662 3..
Number of cutting edges	2	1	4 - 6	4 - 6	4 - 6	4	6 - 10	6	6 - 9	6 - 9	6 - 9
Diameter range mm	3 - 20	3 - 6	4 - 20	4 - 20	4 - 16	4 - 16	10.5 - 45.5	12.5 - 32	16 - 38	16 - 38	16 - 38
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	–	TiAlN	–	TiAlN	TiAlN	TiAlN	Alcrona	Alcrona	Alcrona	Alcrona	Alcrona
Version	Short	Short	Short	Short	Short	Long	–	–	–	60°	45°
Type / Profile	N	N	90° deburrer	90° deburrer	60° deburrer	Deburrer	Slotted	N/NF	Angle	DIN 1833C	DIN 1833D
Catalogue page	16.85	16.86	16.86	16.86	16.86	16.87	16.87	16.88	16.88	16.88	16.88
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 8% Si	●	●	●	○	○	○					
Aluminium > 8% Si	●	●	●	○	○	○					
Copper	●	●	●	○	○	○					
Plastics	●	●	●	○	○	○					
Graphite											
Steel < 520 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 750 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1100 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1200 N	●	●	●	●	●	●	●	●	●	●	●
Steel < 1400 N				●	●	●					
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG	●	●	●	●	●	●	●	●	●	●	●
GGG	●	●	●	●	●	●	●	●	●	●	●
VA < 900 N	○	○	○	○	○	○	○	○	○	○	○
VA > 900 N	○	○	○	○	○	○					
Titanium		○	○	○	○						
Titanium alloy		○	○	○	○						
Nickel base		○	○	○	○						

Brand	HHW	HHW
Article number	16662 4..	16658
Number of cutting edges	6 - 9	4
Diameter range mm	16 - 38	R 0.2 - 6.0
Cutting material	VHM	VHM
Coating	Alcrona	TiAlN
Version	60°	Short
Type / Profile	DIN 1833D	-
Catalogue page	16.88	16.89
Recommended application	● = well-suited ○ = limited suitability	
Aluminium < 8% Si		●
Aluminium > 8% Si		●
Copper		●
Plastics		●
Graphite		
Steel < 520 N	●	●
Steel < 750 N	●	●
Steel < 900 N	●	●
Steel < 1100 N	●	●
Steel < 1200 N	●	●
Steel < 1400 N		
Hardox		
< 50 HRC		
< 60 HRC		
< 67 HRC		
GG	●	●
GGG	●	●
VA < 900 N	○	○
VA > 900 N		○
Titanium		
Titanium alloy		
Nickel base		

Overview of solid carbide milling cutters (I)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16800	16801	16802	16805	16806	16810	16812	16813	16626	16816	16817
Number of cutting edges	2	2	2	2	2	4	4	4	4	4	4
Diameter range mm	0.1 - 0.9	0.2 - 3	0.2 - 3	0.2 - 0.9	0.2 - 3	3 - 20	3 - 20	3 - 25	4 - 20	3 - 20	3 - 16
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
RockTec coating	52/65	52/65	52/65	52/65	52/65	52/65	52/65	52/65	65	52/65	52/65
Version	Short	Long	Long	Short	Long	Short	Long	Overlong	Short	Short	Short
Type / Profile	Mini shank	Mini shank	Mini torus	Mini radius	Mini radius	Shank	Shank	Shank	Shank	Torus	Torus
Catalogue page	16.59	16.60	16.61	16.62	16.63	16.64	16.66	16.67	16.68	16.69	16.70
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 8% Si											
Aluminium > 8% Si											
Copper											
Plastics											
Graphite											
Steel < 520 N											
Steel < 750 N	●		●		●		●		●		●		●		●		●		●		●		●	
Steel < 900 N	●		●		●		●		●		●		●		●		●		●		●		●	
Steel < 1100 N	●		●		●		●		●		●		●		●		●		●		●		●	
Steel < 1200 N	●		●		●		●		●		●		●		●		●		●		●		●	
Steel < 1400 N	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Hardox																								
< 50 HRC		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
< 60 HRC		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
< 67 HRC		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GG																								
GGG																								
VA < 900 N																								
VA > 900 N																								
Titanium																								
Titanium alloy																								
Nickel base																								

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16818	16819	16824	16825	16827	16828	16829	16830	16831	16832
Number of cutting edges	4	4	6 - 8	6 - 8	2	2	2	4	4	4 - 6
Diameter range mm	3 - 16	3 - 16	3 - 20	3 - 20	2 - 20	2 - 20	2 - 20	3 - 20	3 - 20	4 - 12
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
RockTec coating	52/65	52/65	52/65	52/65	52/65	52/65	52/65	52/65	52/65	65
Version	Long	Overlong	Short	Long	Short	Long	Overlong	Short	Long	Extra short
Type / Profile	Torus	Torus	Multi-tooth	Multi-tooth	Radius	Radius	Radius	Radius	Radius	High feed
Catalogue page	16.71	16.71	16.72	16.72	16.73	16.73	16.74	16.76	16.76	16.77
Recommended application	● = well-suited ○ = limited suitability									
Aluminium < 8% Si										
Aluminium > 8% Si										
Copper										
Plastics										
Graphite										
Steel < 520 N										
Steel < 750 N	●		●		●		●		●		●		●		●		●		●		●	
Steel < 900 N	●		●		●		●		●		●		●		●		●		●			
Steel < 1100 N	●		●		●		●		●		●		●		●		●		●			
Steel < 1200 N	●		●		●		●		●		●		●		●		●					
Steel < 1400 N	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Hardox																						
< 50 HRC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
< 60 HRC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
< 67 HRC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
GG																						
GGG																						
VA < 900 N																						
VA > 900 N																						
Titanium																						
Titanium alloy																						
Nickel base																						

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Info

Overview of solid carbide milling cutters (II)

Brand								
Article number	16601	16604	16609	16613	16619	16621	16625	16637
Number of cutting edges	2	2	4	4	6	2	4	4
Diameter range mm	3 - 25	3 - 25	3 - 25	3 - 20	6 - 25	2 - 20	2 - 20	6 - 12
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN
Version	Short	Long	Short	Long	Overlong	Long	Long	Long
Type / Profile	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC
Catalogue page	16.64	16.64	16.65	16.65	16.66	16.74	16.75	16.70
Recommended application	● = well-suited ○ = limited suitability							
Aluminium < 8% Si								
Aluminium > 8% Si								
Copper								
Plastics								
Graphite								
Steel < 520 N								
Steel < 750 N	●							
Steel < 900 N	●							
Steel < 1100 N	●	●	●	●	●	●	●	●
Steel < 1200 N	●	●	●	●	●	●	●	●
Steel < 1400 N	●	●	●	●	●	●	●	●
Hardox								
< 50 HRC	●	●	●	●	●	●	●	●
< 60 HRC	●	●	●	●	●	●	●	●
< 67 HRC								
GG								
GGG								
VA < 900 N								
VA > 900 N								
Titanium								
Titanium alloy								
Nickel base								

Overview of MS milling cutters (I)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16400	16401	16402	16403 1..	16403 2..	16405 1..	16405 2..	16407 1..	16407 2..	16544 1..	16544 2..
Number of cutting edges	2	2	2	3	3	2	2	2	2	4	4
Diameter range mm	0.5 - 4	0.5 - 4	0.5 - 4	3 - 20	3 - 20	3 - 20	3 - 20	3 - 20	3 - 20	4 - 20	4 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN
Version	Mini	Mini	Mini	Short	Short	Short	Short	Long	Long	Short	Short
Type / Profile	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC
Catalogue page	16.78	16.79	16.80	16.80	16.80	16.81	16.81	16.81	16.81	16.82	16.82
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 8% Si											
Aluminium > 8% Si											
Copper											
Plastic											
Graphite											
Steel < 520 N											
Steel < 750 N											
Steel < 900 N	○	○	○	○	○	○	○	○	○	○	○
Steel < 1100 N	○	○	○	○	○	○	○	○	○	○	○
Steel < 1200 N	○	○	○	○	○	○	○	○	○	○	○
Steel < 1400 N	○	○	○	○	○	○	○	○	○	○	○
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG											
GGG											
VA < 900 N	●	●	●	●	●	●	●	●	●	●	●
VA > 900 N	●	●	●	●	●	●	●	●	●	●	●
Titanium	●	●	●	●	●	●	●	●	●	●	●
Titanium alloy	●	●	●	●	●	●	●	●	●	●	●
Nickel base	●	●	●	●	●	●	●	●	●	●	●

Brand	ATORN	ATORN	HW	HW
Article number	16550 3..	16550 4..	16525	16526
			NEW	NEW
Number of cutting edges	4	4	4	4
Diameter range mm	4 - 20	4 - 20	3 - 20	3 - 20
Cutting material	VHM	VHM	VHM	VHM
Coating	AlCrN	AlCrN	Duocon	Duocon
Version	Short	Short	Short	Long
Type / Profile	HPC	HPC	HPC	HPC
Catalogue page	16.82	16.82	16.84	16.84
Recommended application	● = well-suited ○ = limited suitability			
Aluminium < 8% Si				
Aluminium > 8% Si				
Copper				
Plastic				
Graphite				
Steel < 520 N				
Steel < 750 N				
Steel < 900 N	○	○		
Steel < 1100 N	○	○		
Steel < 1200 N	○	○		
Steel < 1400 N	○	○		
Hardox				
< 50 HRC				
< 60 HRC				
< 67 HRC				
GG				
GGG				
VA < 900 N	●	●	●	●
VA > 900 N	●	●	●	●
Titanium	●	●		
Titanium alloy	●	●		
Nickel base	●	●		

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Overview of VHM aluminium milling cutters (I)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16710	16711	16712	16715	16717	16718	16719	16722	16724	16725
Number of cutting edges	2	2	2	1	2	2	2	3	3	3
Diameter range mm	0.5 - 2.5	0.5 - 2.5	0.5 - 2.5	1.5 - 16	3 - 20	3 - 16	3 - 16	3 - 20	3 - 20	3 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	Polished	Polished	ZrCN Ultra-N	ZrCN Ultra-N	Polished	Polished	Polished
Version	Mini	Mini	Mini	Short	Short	Short	Short	Short	Short	Short
Type / Profile	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC
Catalogue page	16.89	16.90	16.90	16.90	16.91	16.91	16.91	16.91	16.91	16.92
Recommended application	● = well-suited ○ = limited suitability									
Aluminium < 8% Si	●	●	●	●	●	●	●	●	●	●
Aluminium > 8% Si	●	●	●	●	●	●	●	●	●	●
Copper	●	●	●	●	●	●	●	●	●	●
Plastic	○	○	○	●	●	○	○	●	●	●
Graphite										
Steel < 520 N										
Steel < 750 N										
Steel < 900 N										
Steel < 1100 N										
Steel < 1200 N										
Steel < 1400 N										
Hardox										
< 50 HRC										
< 60 HRC										
< 67 HRC										
GG										
GGG										
VA < 900 N										
VA > 900 N										
Titanium										
Titanium alloy										
Nickel base										

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	HHW	ATORN	ATORN	ATORN
Article number	16726	16727	16728	16729	16730	16731	16758	16732	16734	16735
Number of cutting edges	3	3	3	3	3	3	3	3	3	3
Diameter range mm	3 - 20	3 - 20	3 - 20	3 - 20	3 - 20	3 - 20	3 - 25	6 - 20	6 - 20	6 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	Polished	ZrCN Ultra-N	ZrCN Ultra-N	ZrN	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N
Version	Short	Short	Short	Long	Long	Long	Short/long	Short	Short	Short
Type / Profile	HPC	HPC	HPC	HSC	HPC	HPC	HPC	HPC	HPC	HPC
Catalogue page	16.92	16.92	16.92	16.93	16.93	16.93	16.94	16.94	16.94	16.95
Recommended application	● = well-suited ○ = limited suitability									
Aluminium < 8% Si	●	●	●	●	●	●	●	●	●	●
Aluminium > 8% Si	●	●	●	●	●	●	●	●	●	●
Copper	●	●	●	●	●	●	●	●	●	●
Plastic	○	○	○	●	○	●	○	○	○	○
Graphite										
Steel < 520 N										
Steel < 750 N										
Steel < 900 N										
Steel < 1100 N										
Steel < 1200 N										
Steel < 1400 N										
Hardox										
< 50 HRC										
< 60 HRC										
< 67 HRC										
GG										
GGG										
VA < 900 N										
VA > 900 N										
Titanium										
Titanium alloy										
Nickel base										

Info

Overview of VHM aluminium milling cutters (II)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16564	16737	16738	16739	16740	16741	16742	16745	16746	16747
Number of cutting edges	3	4	4	4	4	4	4	2	2	2
Diameter range mm	6 - 20	3 - 20	3 - 20	4 - 16	6 - 16	3 - 20	4 - 20	3 - 16	3 - 16	6 - 16
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	CALIDAZ	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N
Version	Short	Short	Short	Long	Overlong	Short	Long	Short	Long	Overlong
Type / Profile	HPC	HPC	HPC	HPC	HPC	HPC	HPC	-	-	-
Catalogue page	16.95	16.95	16.95	16.96	16.96	16.96	16.96	16.97	16.97	16.98
Recommended application	● = well-suited ○ = limited suitability									
Aluminium < 8% Si	●	●	●	●	●	●	●	●	●	●
Aluminium > 8% Si	●	●	●	●	●	●	●	●	●	●
Copper	●	●	●	●	●	●	●	●	●	●
Plastic		○	○	○	○	○	○	○	○	○
Graphite										
Steel < 520 N										
Steel < 750 N										
Steel < 900 N										
Steel < 1100 N										
Steel < 1200 N										
Steel < 1400 N										
Hardox										
< 50 HRC										
< 60 HRC										
< 67 HRC										
GG										
GGG	●									
VA < 900 N										
VA > 900 N										
Titanium										
Titanium alloy										
Nickel base										

Brand	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16748	16749	16755	16756	16757
Number of cutting edges	3	3	2	2	2
Diameter range mm	5 - 20	5 - 20	3 - 16	3 - 16	3 - 12
Cutting material	VHM	VHM	VHM	VHM	VHM
Coating	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N	ZrCN Ultra-N
Version	Short	Short	Short	Long	Overlong
Type / Profile	HPC	HPC	-	-	HPC
Catalogue page	16.98	16.98	16.99	16.99	16.99
Recommended application	● = well-suited ○ = limited suitability				
Aluminium < 8% Si	●	●	●	●	●
Aluminium > 8% Si	●	●	●	●	●
Copper	●	●	●	●	●
Plastic	○	○	○	○	○
Graphite					
Steel < 520 N					
Steel < 750 N					
Steel < 900 N					
Steel < 1100 N					
Steel < 1200 N					
Steel < 1400 N					
Hardox					
< 50 HRC					
< 60 HRC					
< 67 HRC					
GG					
GGG					
VA < 900 N					
VA > 900 N					
Titanium					
Titanium alloy					
Nickel base					

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Overview of VHM-NE milling cutters (I)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16886	16887	16888	16889	16890	16891	16892	16893	16894	16895
	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW
Number of cutting edges	1	2 - 4	2	3	3	3	4	2	2	3
Diameter range mm	1 - 12	3 - 20	3 - 20	4 - 20	6 - 20	3 - 20	3 - 20	3 - 16	3 - 16	6 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro
Version	Medium	Medium	Medium	Long	Long	Short	Medium	Short	Long	Long
Type / Profile	WF	WF	WF	WF	WF	WF	WF	WF	WF	T
Catalogue page	16.100	16.100	16.101	16.102	16.102	16.101	16.104	16.104	16.105	16.105
Recommended application	● = well-suited ○ = limited suitability									
Aluminium < 8% Si	●	●	●	●	●	●	●	●	●	●
Aluminium > 8% Si	●	●	●	●	●	●	●	●	●	●
Copper alloy Bronze	●	●	●	●	●	●	●	●	●	●
Copper alloy Brass	●	●	●	●	●	●	●	●	●	●
Graphite										
Duro										
Thermo	○	○	○	○	○	○	○	○	○	○
GFK	○	○	○	○	○	○		○	○	○
CFK	○	○	○	○	○	○		○	○	○
Aramid										
Composite ceramic										
Fibre plast										
Honeycomb										
< 60 HRC										
< 67 HRC										
GG										
GGG										
VA < 900 N										
VA > 900 N										
Titanium										
Titanium alloy										
Nickel base										

Brand	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16896	16897	16898 1..	16898 2..	16899
	NEW	NEW	NEW	NEW	NEW
Number of cutting edges	2	2	3	3	3
Diameter range mm	3 - 16	3 - 16	6 - 20	6 - 20	6 -20
Cutting material	VHM	VHM	VHM	VHM	VHM
Coating	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro	Ultra Npro
Version	Medium	Long	Medium	Medium	Long
Type / Profile	WF	WF	WR	WR	T
Catalogue page	16.106	16.106	16.103	16.103	16.103
Recommended application	● = well-suited ○ = limited suitability				
Aluminium < 8% Si	●	●	●	●	●
Aluminium > 8% Si	●	●	●	●	●
Copper alloy Bronze	●	●	●	●	●
Copper alloy Brass	●	●	●	●	●
Graphite					
Duro					
Thermo	○	○	○	○	○
GFK					○
CFK					○
Aramid					
Composite ceramic					
Fibre plast					
Honeycomb					
< 60 HRC					
< 67 HRC					
GG					
GGG					
VA < 900 N					
VA > 900 N					
Titanium					
Titanium alloy					
Nickel base					

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Overview of VHM-NE milling cutters (II)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16909 101-104	16909 105-108	16909 109-112	16911 103-108	16911 111-118	16912	16913	16914	16915	16916
	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW
Number of cutting edges	-	-	-	5	6	-	-	-	-	2
Diameter range mm	6 - 12	6 - 12	6 - 12	4 - 12	4 - 12	4 - 12	4 - 12	4 - 12	6 - 20	4 - 12
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	Dia. HC	Dia. HC	Dia. HC	Dia. HC	Dia. HC	-	-	-	-	-
Version	Short	Medium	Long	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Type / Profile	W	W	W	W	W	WF	WN	WR	WN	WF
Catalogue page	16.110	16.110	16.110	16.110	16.110	16.111	16.111	16.111	16.111	16.112
Recommended application	● = well-suited ○ = limited suitability									
Aluminium < 8% Si										
Aluminium > 8% Si										
Copper alloy Bronze										
Copper alloy Brass										
Graphite										
Duro										
Thermo										
GFK	●	●	●	●	●	●	●	●		●
CFK	●	●	●	●	●	●	●	●		●
Aramid				●	●	●	●	●		●
Composite ceramic										
Fibre plast	○	○	○	○	○	○	○	○		○
Honeycomb									●	
< 60 HRC										
< 67 HRC										
GG										
GGG										
VA < 900 N										
VA > 900 N										
Titanium										
Titanium alloy										
Nickel base										

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16917	16918	16919	16920	16921	16925	16926	16927	16928	16933
	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW
Number of cutting edges	2	2	2	2	2	-	-	-	-	-
Diameter range mm	4 - 12	4 - 12	4 - 12	4 - 12	4 - 12	4 - 12	4 - 12	4 - 12	4 - 12	4 - 12
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	-	-	Dia. HC	Dia. HC	Dia. HC	Dia. HC	-	-	-	-
Version	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Type / Profile	WN	WR	WF	WN	WR	WN	WF	WN	WR	WN
Catalogue page	16.112	16.112	16.112	16.112	16.112	16.112	16.113	16.113	16.113	16.113
Recommended application	● = well-suited ○ = limited suitability									
Aluminium < 8% Si										
Aluminium > 8% Si										
Copper alloy Bronze										
Copper alloy Brass										
Graphite										
Duro										
Thermo										
GFK	●	●	●	●	●	●	●	●	●	
CFK	●	●	●	●	●	●	●	●	●	
Aramid	●	●	●	●	●	●	●	●	●	●
Composite ceramic										
Fibre plast	○	○	○	○	○	○	○	○	○	
Honeycomb							○	○	○	
< 60 HRC										
< 67 HRC										
GG										
GGG										
VA < 900 N										
VA > 900 N										
Titanium										
Titanium alloy										
Nickel base										

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Overview of graphite milling cutters (I)

Brand	HHW	ATORN	ATORN	ATORN
Article number	16702	16703	16704	16705
Number of cutting edges	2 - 3	4	2	2
Diameter range mm	2 - 12	4 - 16	0.2 - 12	0.2 - 12
Cutting material	VHM	VHM	VHM	VHM
Coating	Diamond	Diamond	Diamond	Diamond
Version	Long/overlong	Short/long	Short/long	Short/long
Type / Profile	GFK	GFK	GFK	GFK
Catalogue page	16.107	16.107	16.108	16.109
Recommended application				
Aluminium < 8% Si				
Aluminium > 8% Si				
Copper				
Plastic	●	●	●	●
Graphite	●	●	●	●
Steel < 520 N				
Steel < 750 N				
Steel < 900 N				
Steel < 1100 N				
Steel < 1200 N				
Steel < 1400 N				
Hardox				
< 50 HRC				
< 60 HRC				
< 67 HRC				
GG				
GGG				
VA < 900 N				
VA > 900 N				
Titanium				
Titanium alloy				
Nickel base				

Overview of screw-in milling cutters (I)

Brand	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16763	16764	16765	16766	16767	16768	16769	16770	16771	16772	16773
Number of cutting edges	4	4 - 6	4 - 5	3	2	3	4	6 - 8	4	2	2
Diameter range mm	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	AlTiN	AlTiN	ZrN	TiAlN	TiAlN	TiAlN	TiAlN	Naco-blue	AlTiN	Naco-blue
Version	–	–	–	–	–	–	–	–	–	–	–
Type / Profile	HPC	NRf-MTC	NR-MTC	HPC	–	–	–	–	HPC/HSC	HSC	HPC/HSC
Catalogue page	16.115	16.115	16.115	16.116	16.116	16.116	16.116	16.117	16.117	16.117	16.118
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si				●	●	●	●				
Aluminium > 10% Si				●	●	●	●				
Copper				●	●	●	●	○			
Plastic				●	●	●					
Graphite											
Steel < 520 N	●	●	●		●	●	●	●	●	●	●
Steel < 750 N	●	●	●		●	●	●	●	●	●	●
Steel < 900 N	●	●	●		●	●	●	●	●	●	●
Steel < 1100 N	●	●	●		●	●	●	●	●	●	●
Steel < 1200 N	●	●	●		●	●	●	●	●	●	●
Steel < 1400 N	●	●	●		●	●	●	●	●	●	●
Hardox											
< 50 HRC										●	●
< 60 HRC										●	●
< 67HRC											
GG	●	○	●		●	●	●	●			
GGG	●	○	●		●	●	●	●			
VA < 900 N	○	●	●		●	●	●	●			
VA > 900 N		○									
Titanium											
Titanium alloy											
Nickel base											

Brand	ATORN	ATORN	ATORN	ATORN	ATORN
Article number	16774	16775	16776	16777	16778
Number of cutting edges	4	2	2	6	4
Diameter range mm	10 - 20	10 - 20	10 - 20	10 - 20	10 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	AlTiN	TiAlN	TiAlN	TiAlN
Version	–	–	–	–	–
Type / Profile	–	HSC	–	–	–
Catalogue page	16.118	16.118	16.118	16.119	16.119
Recommended application	● = well-suited ○ = limited suitability				
Aluminium < 10% Si			●	●	●
Aluminium > 10% Si			●	●	●
Copper	○		●	●	●
Plastic					
Graphite					
Steel < 520 N	●	●	●	●	●
Steel < 750 N	●	●	●	●	●
Steel < 900 N	●	●	●	●	●
Steel < 110 N	●	●	●	●	●
Steel < 1200 N	●	●	●	●	●
Steel < 1400 N	●	●	●	●	●
Hardox					
< 50 HRC		●			
< 60 HRC		●			
< 67 HRC					
GG	●		●		
GGG	●		●		
VA < 900 N	●		●	●	●
VA > 900 N				●	●
Titanium					
Titanium alloy					
Nickel base					

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Overview

Brand	HHW	HHW	ATORN	ATORN	ATORN	HHW	HHW	HHW	HHW	ATORN	ATORN
Article number	16655	16664	16556 1..	16556 2..	16556 3..	16591 1..	16591 2..	16533	16534 2..	16535 2..	16535 3..
Number of cutting edges	2	5	4	4	4	4	4	4	4	3	3
Diameter range mm	3 - 12	6 - 20	4 - 20	4 - 20	4 - 20	3 - 25	3 - 25	3 - 20	4 - 20	3 - 20	3 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	AlCrN	TiAlN	TiAlN	TiAlN	Multilay HPC³	Multilay HPC³	TiAlN	Nacro	TiAlN	TiAlN
Version	Overlong	Extra long	Short	Short	Short	Short	Short	Short	Long	Short	Short
Type / Profile	H	Trochoidal	HPC	HPC	HPC	HPC	HPC	HPC	HPC/VA	HPC	HPC
Catalogue page	16.75	16.77	16.83	16.83	16.83	16.52	16.52	16.48	16.48	16.42	16.42
Recommended application	● = well-suited	○ = limited suitability									
Aluminium < 10% Si			○	○	○				○		
Aluminium > 10% Si									○		
Copper			○	○	○				○		
Plastic											
Graphite											
Steel < 520 N	●	●				●	●	●		●	●
Steel < 750 N	●	●				●	●	●		●	●
Steel < 900 N	●	●				●	●	●		●	●
Steel < 1100 N	●	●				●	●	●	●	●	●
Steel < 1200 N	●	●				●	●	●	●	●	●
Steel < 1400 N	●	●				●	●	●		●	●
Hardox											
< 50 HRC	○	●									
< 60 HRC	●	●									
< 67 HRC	○										
GG						●	●	●			
GGG						●	●	●			
VA < 900 N	●		●	●	●	○	○	○	●	○	○
VA > 900 N	●		●	●	●			○	●	○	○
Titanium			○	○	○				○		
Titanium alloy			○	○	○				○		
Nickel base			○	○	○				○		

Brand	HHW	ATORN
Article number	16665	16630
Number of cutting edges	5	4 - 6
Diameter range mm	6 - 20	6 - 20
Cutting material	VHM	VHM
Coating	AlCrN	TiAlN-Ultra
Version	Overlong	Short
Type / Profile	Trochoidal	NR
Catalogue page	16.78	16.85
Recommended application	● = well-suited	○ = limited suitability
Aluminium < 10% Si		●
Aluminium > 10% Si		●
Copper		●
Plastic		
Graphite		
Steel < 520 N		○
Steel < 750 N		○
Steel < 900 N		●
Steel < 1100 N		●
Steel < 1200 N		●
Steel < 1400 N		●
Hardox		
< 50 HRC		
< 60 HRC		
< 67 HRC		
GG		○
GGG		○
VA < 900 N	●	●
VA > 900 N	●	●
Titanium	●	●
Titanium alloy	●	●
Nickel base	●	●

83943 - 83944 SystemBoard (modular system)

Design
- Individual configuration with replaceable inserts (Ø 3–40 mm)
- Frames are ideal for stacking, suitable for storage boxes, order picking boxes and transport cases
- Tough and highly impact-resistant, offering reliable protection against damage
- Good heat distortion resistance (up to 120 °C)
- Resistant to solvents, oils and greases

Applications
Ideal for sorting, arranging and storing. Process optimisation, automation possible with precise positioning. Order-related filling for internal logistics processes or further external processing (e.g. cleaning, coating and transport processes). Space-saving storage and provision of tools, turned parts or technical components.

Quality
Polyamide (PA6).

83943 101
Frame
Applications
To accommodate cutting inserts, see art. no. 83944.

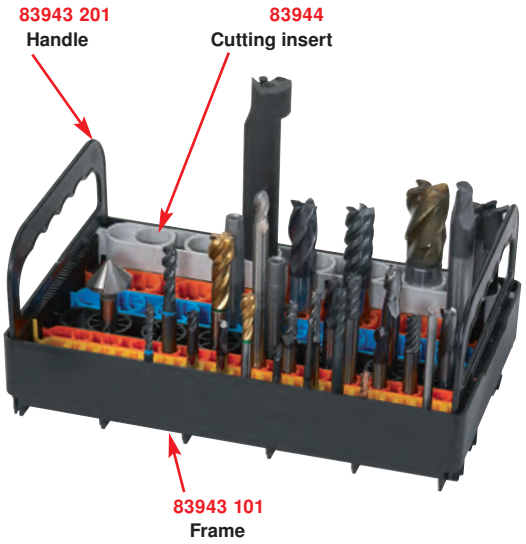
Note:
Optional handles, see art. no. 83943 201.

83943 201
Handle
Applications
For frames, see art. no. 83943 101.

83944
Cutting inserts
Design
- Height can be adjusted (25 or 40 mm) via a simple twist

Applications
For frames, see art. no. 83943 101.

Note:
Ø 3/4, 3/8, 1/2, 1/4 inch deliverable on request.

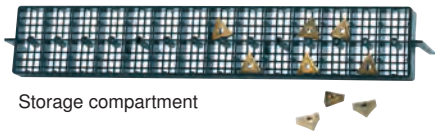


Design	L x W x H mm	Carrying weight max. kg	Colour	83943	...
Frame with base	300 x 185 x 57	-	black		**101**
Handle	-	8	black		**201**

Hole Ø mm	Number of holes per cutting insert	Max. number of cutting inserts per frame	83944	...
3	13	12		**101**
4	13	12		**102**
5	13	12		**103**
6	13	12		**104**
7	13	12		**105**
8	13	12		**106**
9	13	12		**107**
10	13	12		**108**
11	13	12		**109**
12	13	12		**110**
13	7	6		**111**
14	7	6		**112**
15	7	6		**113**
16	7	6		**114**
17	7	6		**115**
18	7	6		**116**

Hole Ø mm	Number of holes per cutting insert	Max. number of cutting inserts per frame	83944	...
19	7	6		**117**
20	7	6		**118**
21	7	6		**119**
22	7	6		**120**
23	7	6		**121**
24	7	6		**122**
25	7	6		**123**
26	7	6		**124**
28	5	4		**125**
30	5	4		**126**
32	5	4		**127**
34	5	4		**128**
36	5	4		**129**
38	5	4		**130**
40	5	4		**131**

83944 132



Storage compartment

Storage compartment L x W mm	Guide height mm	Number of storage compartments per cutting insert	Max. number of cutting inserts per frame	83944	...
17 x 17	8.5	28	4		**132**

16005 End mill mounting plates

Design
- Plate bodies made of red injection-moulded plastic
- **Robust, handy, sits well**
- Tools with a short clamping shank are positioned far enough out of the location hole to be **easy to remove**
- All shank bores have an open area underneath, meaning **no blockages, e.g. by chips**
- Slightly conical hole guide for easy handling of the end mill
- Delivered **without** cutter

16005 101
Design
- **Square** (182 x 182 x 30 mm)
- **With 7 different shank mount holes** to accommodate 77 **different** end mills

16005 102-108
Design
- **Rectangular** (140 x 70 x 30 mm)
- Each with t**hesame shank holes** to each accommodate **a certain shank diameter**

Applications
The various mounting plates can be joined together in modules to form a plate system. Each plate body has dovetail shaped couplings **on the side walls.** They form an invisible connection so that combinations appear as one unit.

16005 101

16005 102-108

Shank mounting hole mm	End mill capacity piece	16005 ...
6–25	77	101
6	72	102
8	50	103
10	32	104
12	21	105
16	18	106
20	10	107
25	8	108

16010 Single-tooth milling cutter

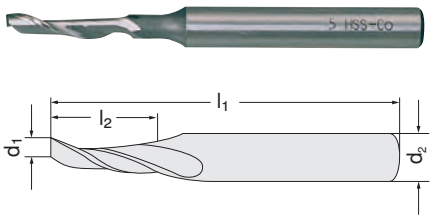
HSS Co5 | Z 1 | ALU

Design
- Straight shank
- With only **one cutting edge**
- For cutting on periphery and end face

Applications
For milling slots on aluminium doors and windows on high-speed milling machines.

Quality
HSS-E (Co5).

16010



d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	16010 ...
3.0	12	60	8	101
4.0	12	60	8	102
5.0	13	60	8	103
L 5.0	16	80	8	107

d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	16010 ...
6.0	16	60	8	104
8.0	16	80	8	105
L 8.0	30	100	8	108
10.0	15	80	10	106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70	60	60	50	40	30	-	-	-	-	-	-	-	-	-	-	-	-

16020 - 16022 Mini cutters

Z 3 | ≈ 30° | DIN 1835 B | N | Uni

ATORN®

Design
Short, right cutting, right-hand twist 30°,
3 cutting edges, centre cutting, straight shank with driving surface in accordance with DIN 1835 B.

Note:
Re-grinding of cutters with a small cutting-edge diameter is uneconomical. It is therefore more economical to use mini cutters up to the wear limit and then throw them away. You repeatedly use brand-new cutters and reduce the risk of having to scrap finished pieces.

16020
Quality
HSS-E (Co8).

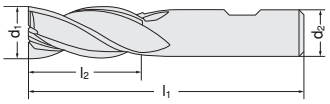
16022
Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E

16020

HSS-E TiAlN

16022



d_1 d10 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16020	...	HSS-E/TiAlN 16022	...
1.0	2	34	6		201		201
1.5	3	34	6		202		202
1.8	3	34	6		203		203
2.0	4	35	6		204		204
2.5	5	36	6		206		206
2.8	5	36	6		207		207
3.0	5	36	6		208		208
3.5	6	37	6		210		210
3.8	7	38	6				211
4.0	7	38	6		212		212
4.5	7	38	6		214		214
4.8	8	39	6		215		215
5.0	8	39	6		216		216
5.5	8	39	6		217		217

d_1 d10 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16020	...	HSS-E/TiAlN 16022	...
5.75	8	39	6				218
6.0	8	39	6		219		219
6.5	10	42	8				220
7.0	10	42	8				221
7.5	10	42	8				222
8.0	11	43	8		223		223
8.5	11	48	10		224		224
9.0	11	48	10		225		225
9.5	11	48	10		226		226
10.0	13	50	10		227		227
12.0	16	58	12		228		228
16.0	19	64	16		229		
20.0	22	78	20		230		

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16020	70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	40	-
16022	100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	15	65	-

16030 - 16032 Mini cutters

Z 3 | ≈ 30° | DIN 1835 B | N | Uni

ATORN®

Design
Long, right cutting, right-hand twist 30°,
3 cutting edges, centre cutting, straight shank with driving surface in accordance with DIN 1835 B.

Note:
Re-grinding of cutters with a small cutting-edge diameter is uneconomical. It is therefore more economical to use mini cutters up to the wear limit and then throw them away. You repeatedly use brand-new cutters and reduce the risk of having to scrap finished pieces.

16030
Quality
HSS-E (Co8).

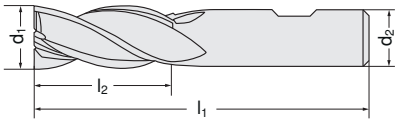
16032
Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E

16030

HSS-E TiAlN

16032



d_1 d10 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16030	...	HSS-E/TiAlN 16032	...
2.0	7	38	6		201		201
2.5	8	39	6		202		202
3.0	8	39	6		203		203
3.5	10	41	6		204		204
4.0	11	42	6		205		205
4.5	11	42	6		206		206

d_1 d10 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16030	...	HSS-E/TiAlN 16032	...
5.0	13	44	6		207		207
5.5	13	44	6		208		
6.0	13	44	6		209		209
6.5	16	48	8		210		
8.0	19	51	8		212		212
10.0	22	59	10		215		

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16030	70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	40	-
16032	100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

16060 - 16062 Square end mills

Z 2 | ≈ 30° | DIN 1835 B | DIN 327D | N | Uni

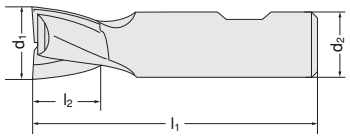
ATORN®

Design

Short, right cutting, straight shank with driving surface in accordance with DIN 1835 B. Right-hand twist approx. 30°, **2 cutting edges, centre cutting.**

16060
HSS-E (Co8).

16062
HSS-E (Co8)/TiAlN-coated.



HSS-E

16060

HSS-E TiAlN

16062

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	HSS-E 16060	...	HSS-E/TiAlN 16062	...
1.0	2.5	47	6	-		201		201
1.5	3	47	6	-		202		202
2.0	4	48	6	-		203		203
2.5	5	49	6	-		204		204
2.8	5	49	6	-		205		205
3.0	5	49	6	-		206		206
3.5	6	50	6	-		207		207
3.8	7	51	6	-				208
4.0	7	51	6	-		209		209
4.5	7	51	6	-		210		210
4.8	8	52	6	-		211		211
5.0	8	52	6	-		212		212
5.5	8	52	6	-		213		213
5.75	8	52	6	-		214		214
6.0	8	52	6	5,5		215		215
6.5	10	60	10	-		216		216
7.0	10	60	10	-		218		218
7.5	10	60	10	-		219		219
7.75	11	61	10	-		220		220
8.0	11	61	10	7,5		221		221
8.5	11	61	10	-		222		222
9.0	11	61	10		-	224		224

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	HSS-E 16060	...	HSS-E/TiAlN 16062	...
9.5	11	61	10	-		225		225
9.7	13	63	10	-				226
10.0	13	63	10	9,0		227		227
11.0	13	70	12	-		228		228
11.7	16	73	12	-		229		
12.0	16	73	12	11,0		230		230
13.0	16	73	12	-		231		231
14.0	16	73	12	-		233		233
15.0	16	73	12	-		234		234
16.0	19	79	16	15,0		236		236
17.0	19	79	16	-		237		237
18.0	19	79	16	-		239		239
19.0	19	79	16	-		240		
20.0	22	88	20	19,0		242		242
22.0	22	88	20	-		243		243
25.0	26	102	25	24.0		245		245
26.0	26	102	25	-		246		
28.0	26	102	25	-		247		
30.0	26	102	25	-		248		
32.0	32	112	32	31.0		249		
36.0	32	112	32	-		251		
40.0	38	130	40	39.0		252		

	Al<10% Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16060	70	60	60	50	50	50	30	20	-	-	-	-	-	20	15	10	40	-
16062	100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

16073 - 16074 Square end mills

Z 2 | ≈ 30° | DIN 1835 B | DIN 327D | N | Uni

ATORN®

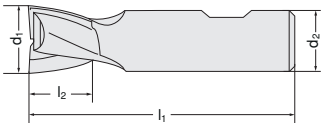
Design

Long, right cutting, right-hand twist approx. 30°, **2 cutting edges,** from 4.0 mm Ø **centre cutting**. With eccentric relief grinding, over Ø 10.0 mm produced with double relief grinding. Straight shank with driving surface in accordance with DIN 1835 B.

Advantage:
No circular grinding chamfer, therefore better support and clear cut.

16073
HSS-E (Co8).

16074
HSS-E (Co8)/TiAlN-coated.



HSS-E

16073

HSS-E TiAlN

16074

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16073	...	HSS-E/TiAlN 16074	...
2.5	8	56	6		201		201
3.0	8	56	6		202		202
3.5	10	59	6		203		
4.0	11	63	6		204		204
4.5	11	63	6		205		
5.0	13	68	6		206		206
5.5	13	68	6		207		207
6.0	13	68	6		208		208
6.5	16	80	10		209		
7.0	16	80	10		210		210

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16073	...	HSS-E/TiAlN 16074	...
8.0	19	88	10		211		211
10.0	22	95	10		214		214
12.0	26	110	12		215		215
14.0	26	110	12		216		216
16.0	32	123	16		217		217
18.0	32	123	16		218		218
20.0	38	141	20		219		219
22.0	38	141	20		220		
24.0	45	166	25		221		
25.0	45	166	25		222		

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16073	70	60	60	50	40	40	30	20	-	-	-	-	20	15	10	40	-	-
16074	100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

( ) = Items with prices in brackets partly available from stock.

16094 - 16100 Square end mills

Z 3 | ≈ 30° | DIN 1835 B | DIN 844B | N | Uni

Design
- **Short**
- Right cutting
- Right-hand twist approx. 30°
- **3 cutting edges**
- **Centre cutting**
- Straight shank with driving surface in accordance with DIN 1835 B

Advantage:
No circular grinding chamfer, therefore better support and clear cut.

16094
ATORN®
Quality
HSS-E (Co8).

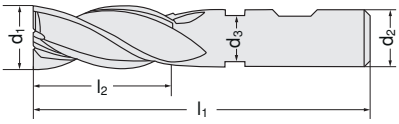
16096
ATORN®
Quality
HSS-E (Co8)/TiAlN-coated.

16100
HW
Applications
Also suitable for dry machining.
Quality
HSS-E powder steel/TiAlN-coated.

16094
HSS-E

16096
HSS-E TiAlN

16100
HSS-E-PM TiAlN



					HSS-E		HSS-E/TiAlN		HSS-E-PM/TiAlN	
d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	16094	...	16096	...	16100	...
1.5	7	51	6	-		**101**		**101**		
2.0	7	51	6	-		**102**		**102**		
2.5	8	52	6	-		**103**		**103**		
3.0	8	52	6	-		**104**		**104**		
3.5	10	54	6	-		**105**		**105**		
4.0	11	55	6	-		**106**		**106**		**201**
4.5	11	55	6	-		**107**		**107**		
5.0	13	57	6	-		**108**		**108**		**202**
5.5	13	57	6	-		**109**		**109**		
6.0	13	57	6	5.5		**110**		**110**		**203**
6.5	16	66	10	-		**111**		**111**		
7.0	16	66	10	-		**112**		**112**		**204**
7.5	16	66	10	-		**113**		**113**		
8.0	19	69	10	7.5		**114**		**114**		**205**
8.5	19	69	10	-		**115**		**115**		
9.0	19	69	10	-		**116**		**116**		
10.0	22	72	10	9.0		**117**		**117**		**206**
12.0	26	83	12	11.0		**118**		**118**		**207**
14.0	26	83	12	-		**119**		**119**		**208**
16.0	32	92	16	15.0		**120**		**120**		**209**
18.0	32	92	16	-		**121**		**121**		**210**
20.0	38	104	20	19.0		**122**		**122**		**211**
22.0	38	104	20	-		**123**		**123**		
25.0	45	121	25	24,0		**124**		**124**		
28.0	45	121	25	-		**125**		**125**		
30.0	45	121	25	-		**126**		**126**		

Al<10% Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16094																	
70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	4	-
16096																	
100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-
16100																	
140–250	120–140	90–120	80–90	70–80	55–65	50–60	40–50	-	-	-	-	-	40–45	35–40	-	80–90	80–120

Z 3 | ≈ 30° | DIN 1835 B | DIN 844B | N | Uni

ATORN®

Design
- **Long**
- Right cutting
- Right-hand twist approx. 30°
- **3 cutting edges, centre cutting**
- Straight shank with driving surface in accordance with DIN 1835 B

16104
Quality
HSS-E (Co8).

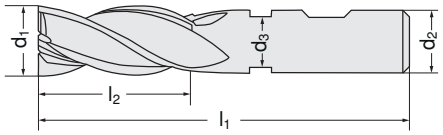
16105
Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E

16104

HSS-E TiAlN

16105



d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	HSS-E 16104	...	HSS-E/TiAlN 16105	...
2.0	10	54	6	-		101		101
3.0	12	56	6	-		103		103
3.5	15	59	6	-		104		
4.0	19	63	6	-		105		105
4.5	19	63	6	-		106		
5.0	24	68	6	-		107		107
5.5	24	68	6	-		108		108
6.0	24	68	6	5,5		109		109
7.0	30	80	10	-		110		110
8.0	38	88	10	7,5		112		112
10,0	45	95	10	9,0		114		114
12,0	53	110	12	11,0		116		116
14.0	53	110	12	-		118		
16.0	63	123	16	15,0		120		120
18.0	63	123	16	-		122		
20.0	75	141	20	19,0		125		125

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16104																	
70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	40	-
16105																	
100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

Info The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use
HM grade
Coating

PMK
H 42
coated
18674

Designation	$W^{\pm 0,1}$ mm	$R^{\pm 0,05}$ mm			...
GTN-2	2,2	0,16	10 pieces		113
GTN-3	3,1	0,20	10 pieces		114

16120 - 16131 End mills

Z 4–6 | ≈ 35° | DIN 1835 B | DIN 844B | N | Uni

Design
- **Short**
- Right cutting
- Right-hand twist approx. 35°
- **4–6 cutting edges, centre cutting**
- Straight shank with driving surface in accordance with DIN 1835 B

16120
ATORN®

Design
- Cutting tolerance h10

Quality
HSS-E (Co8).

HSS-E

16120

16122
ATORN®

Design
- Cutting tolerance h10

Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E TiAlN

16122

16131
HW

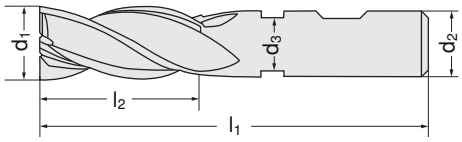
Design
- Cutting tolerance k10

Applications
Also suitable for dry machining.

Quality
HSS-E-PM/TiAlN-coated.

HSS-E-PM TiAlN

16131



						HSS-E		HSS-E/TiAlN		HSS-E-PM/TiAlN	
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	16120	...	16122	...	16131	...
2.0	7	51	6	-	4		102		102		
2.5	8	52	6	-	4		103				
3.0	8	52	6	-	4		104		104		
3.5	10	54	6	-	4		105				
4.0	11	55	6	-	4		106		106		
4.5	11	55	6	-	4		107				
5.0	13	57	6	-	4		108		108		
6.0	13	57	6	5.5	4		110		110		302
7.0	16	66	10	-	4		112		112		
8.0	19	69	10	7.5	4		113		113		304
9.0	19	69	10	-	4		114		114		
10.0	22	72	10	9.0	4		115		115		305
11.0	22	79	12	-	4		116		116		
12.0	26	83	12	11.0	4		117		117		306
13.0	26	83	12	-	4		118		118		
14.0	26	83	12	-	4		119		119		307
15.0	26	83	12	-	4		120		120		
16.0	32	92	16	15.0	4		121		121		308
18.0	32	92	16	-	4		123		123		309
19.0	32	92	16	-	4		124		124		
20.0	38	104	20	19.0	4		125		125		310
22.0	38	104	20	-	5		127		127		
24.0	45	121	25	-	5		129		129		
25.0	45	121	25	24.0	5		130		130		312
28.0	45	121	25	-	6		132		132		
30.0	45	121	25	-	6		133		133		314
32.0	53	133	32	31.0	6		134		134		
40.0	63	155	40	39.0	6		138				

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16120																	
70–120	40–70	40–70	28–32	25–30	18–25	16–22	12–18	-	-	-	-	-	5–15	3–12	3–12	30–50	50–70
16122																	
70–200	40–150	40–150	75–85	45–55	40–60	20–50	12–40	-	-	-	-	-	5–28	3–25	-	40–70	80–10
16131																	
140–250	120–140	90–120	80–90	70–80	55–65	50–60	40–50		-	-	-	-	40–45	35–40	-	80–90	80–120

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Z 4–6 | ≈ 30° | DIN 1835 B | DIN 844B | N | Uni

ATORN®

Design
- **Long**
- Right cutting
- Right-hand twist approx. 30°
- **4–6 cutting edges, centre cutting**
- Straight shank with driving surface in accordance with DIN 1835 B
- From 25 mm shank diameter with 2 driving surfaces

16128
Quality
HSS-E (Co8).

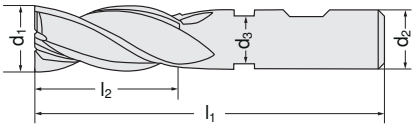
16129
Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E

16128

HSS-E TiAlN

16129



d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	HSS-E 16128	HSS-E ...	HSS-E/TiAlN 16129	HSS-E/TiAlN ...
2.0	10	54	6	-	4		201		201
3.0	12	56	6	-	4		203		203
3.5	15	59	6	-	4		204		204
4.0	19	63	6	-	4		205		205
4.5	19	63	6	-	4		206		206
5.0	24	68	6	-	4		207		207
5.5	24	68	6	-	4		208		208
6.0	24	68	6	5.5	4		209		209
7.0	30	80	10	-	4		210		210
8.0	38	88	10	7.5	4		211		211
9.0	38	88	10	-	4		212		212
10.0	45	95	10	9.0	4		213		213

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	HSS-E 16128	HSS-E ...	HSS-E/TiAlN 16129	HSS-E/TiAlN ...
11.0	45	102	12	-	4		214		214
12.0	53	110	12	11.0	4		215		215
14.0	53	110	12	-	4		217		217
16.0	63	123	16	15.0	4		219		219
18.0	63	123	16	-	4		221		221
20.0	75	141	20	19.0	4		223		223
22.0	75	141	20	-	5		224		224
25.0	90	166	25	24.0	5		226		226
28.0	90	166	25	-	6		228		
30.0	90	166	25	-	6		229		
32.0	106	186	32	31.0	6		230		

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16128	70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	40	-
16129	100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

16133 - 16134 End mills

Z 4 | ≈ 30° | DIN 1835 B | N | Uni

HSS-E

HSS-E TiAlN

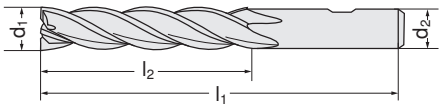
Design
- **Extra long**
- **Straight face**
- Right cutting, right-hand twist approx. 30°
- Straight shank with driving surface in accordance with 1835 B

16133
Quality
HSS-E (Co5).

16134
Quality
HSS-E (Co5)/TiAlN-coated.

16133

16134



d_1 k10 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	HSS-E 16133	...	HSS-E/TiAlN 16134	...
6.0	40	100	6	4		**206**		**206**
8.0	65	115	10	4		**208**		**208**
10.0	65	115	10	4		**210**		**210**
12.0	75	132	12	4		**212**		**212**
16.0	100	160	16	4		**216**		**216**
20.0	125	191	20	4		**220**		**220**
25.0	140	216	25	4		**225**		**225**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16133																	
40–120	40–90	40–90	45–50	30–35	25–38	15–30	10–25	-	-	-	-	-	5–18	3–15	-	24–40	50–60
16134																	
110	85	90	65	55	50	36	28	22	-	-	-	-	18	13	-	38	-

16150 End mills

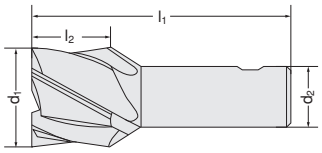
HSS-E | Z 6–8 | ≈ 30° | DIN 1835 B | DIN 844B | N | Uni

Design
Short, 6–8 cutting edges. With eccentric relief grinding. Straight shank with driving surface in accordance with DIN 1835 B. Multi-flute cutters, free in the middle on face side. Right-hand spiral 30°.

Applications
For normal to solid materials.

Quality
HSS-E (Co8).

16150



d_1 k10 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16150	...
30.0	30	90	20	6		**101**
35.0	30	90	20	6		**102**
40.0	32	95	25	8		**103**
50.0	36	100	32	8		**104**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70–120	40–70	40–70	28–32	25–30	18–25	16–22	12–18	-	-	-	-	-	5–15	3–12	3–12	30–50	50–70

16153 End mills

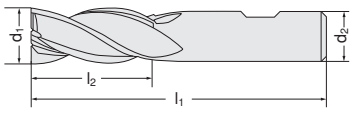
HSS-E | Z 2 | ≈ 42° | DIN 1835 B | DIN 844B | W | ALU

Design
- **Short**
- Right cutting, right-hand twist approx. 42°
- **2 cutting edges, centre cutting**
- Straight shank with driving surface in accordance with DIN 1835 B

Applications
For soft to tough, long-chipping materials such as aluminium and copper alloys.

Quality
HSS-E (Co8).

16153



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16153	...
2.0	7.0	51	6		**101**
2.5	8.0	52	6		**102**
3.0	8.0	52	6		**103**
4.0	11.0	55	6		**105**
5.0	13.0	57	6		**107**
5.5	13.0	57	6		**108**
6.0	13.0	57	6		**109**
7.0	16.0	66	10		**111**

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16153	...
8.0	19.0	69	10		**113**
9.0	19.0	69	10		**115**
10.0	22.0	72	10		**116**
12.0	26.0	83	12		**117**
16.0	32.0	92	16		**119**
18.0	32.0	92	16		**120**
20.0	38.0	104	20		**121**
22.0	38.0	104	20		**122**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70	60	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16158 - 16161 End mills

HSS-E | Z 3 | ≈ 35° | DIN 1835 B | DIN 844B | W | ALU

Design
- Right cutting
- Right-hand twist approx. 35°
- **3 cutting edges**
- **Centre cutting**
- With eccentric relief grinding
- **With released straight shank** with driving surface in accordance with DIN 1835 B

Applications
For soft to tough, long-chipping materials such as aluminium and copper alloys.

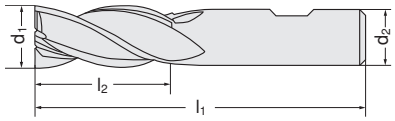
Quality
HSS-E (Co8).

16158
Short version.

16161
Long version.

16158

16161



		Short		Long		Short		Long	
d_1 e8 mm	d_2 h6 mm	l_2 mm	l_1 mm	l_2 mm	l_1 mm	16158	...	16161	...
3.0	6	8	52	12	56		201		201
4.0	6	11	55	19	63		202		202
5.0	6	13	57	24	68		203		203
6.0	6	13	57	24	68		204		204
8.0	10	19	69	38	88		205		205
10.0	10	22	72	45	95		206		206
12.0	12	26	83	53	110		207		207
14.0	12	26	83	53	110		208		208
16.0	16	32	92	63	123		210		209
18.0	16	32	92	63	123		211		210
20.0	20	38	104	75	141		212		211

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
60–70	50–60	50–60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60–100

16170 Radius cutter

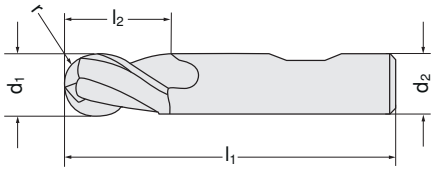
HSS-E | Z 2 | ≈ 30° | DIN 1835 B | Uni

Design
- **Short**
- With face radius
- Right cutting
- Right-hand twist up to 6.0 mm Ø 40°, from 8.0 mm Ø 30°
- **2 cutting edges**
- **Centre cutting**
- Radius tolerance +/- 0.04 mm
- Straight shank with driving surface in accordance with DIN 1835 B

Advantage:
No circular grinding chamfer, therefore better support and clear cut.

Quality
HSS-E (Co8).

16170



d_1 h10 mm	Radius mm	l_2 mm	l_1 mm	d_2 h6 mm														16170	...
2.0	1.0	4	48	6															201
3.0	1.5	5	49	6															202
4.0	2.0	7	51	6															203
5.0	2.5	8	52	6															204
6.0	3.0	8	52	6															205
8.0	4.0	11	61	10															206
10.0	5.0	13	63	10															207
12.0	6.0	16	73	12															208
16.0	8.0	19	79	16															210
20.0	10.0	22	88	20															212

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70–120	40–70	40–70	28–32	25–30	18–25	16–22	12–18	-	-	-	-	-	5–15	3–12	3–12	30–50	50–70

16176 - 16177 Radius cutter

Z 2 | ≈ 30° | DIN 1835 B | Uni

ATORN®

Design
- **Long**
- With face radius
- Right cutting
- Right-hand twist approx. 30°
- **2 cutting edges**
- **Centre cutting**
- Radius tolerance +/- 0.04 mm
- Straight shank with driving surface in accordance with DIN 1835 B

16176
Quality
HSS-E (Co8).

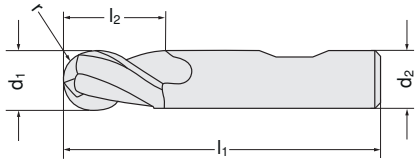
16177
Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E

16176

HSS-E TiAlN

16177



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16176	...	HSS-E/TiAlN 16177	...
2.0	10	54	6		201		201
3.0	12	56	6		202		202
4.0	19	63	6		203		203
5.0	24	68	6		204		204
6.0	24	68	6		205		205
8.0	38	88	10		207		207
10.0	45	95	10		209		209

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16176	...	HSS-E/TiAlN 16177	...
12.0	53	110	12		211		211
16.0	63	123	16		215		215
18.0	69	123	16		217		
20.0	75	141	20		219		219
25.0	90	166	25		222		
30.0	90	166	25		225		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16176																	
70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	-	40	-
16177																	
100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

16183 - 16185 Shank roughing cutter

Z 3 | ≈ 30° | DIN 1835 B | DIN 844B | NR | Uni

ATORN®

Design
- **Short**
- **3 cutting edges**
- **Centre cutting**
- Right-hand twist approx. 30°
- Straight shank with driving surface in accordance with DIN 1835 B

16183
Quality
HSS-E (Co8).

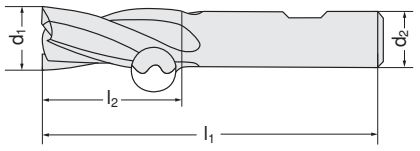
16185
Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E

16183

HSS-E TiAlN

16185



d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16183	...	HSS-E/TiAlN 16185	...
6.0	13	57	6		201		201
7.0	16	66	10		202		202
8.0	19	69	10		203		203
9.0	19	69	10		204		204
10.0	22	72	10		205		205
12.0	26	83	12		206		206

d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16183	...	HSS-E/TiAlN 16185	...
14.0	26	83	12		207		207
16.0	32	92	16		208		208
18.0	32	92	16		209		209
20.0	38	104	20		210		210
25.0	45	121	25		212		212

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16183																	
70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	40	-
16185																	
100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16195 - 16198 Shank roughing cutter

Z 4–6 | ≈ 30° | DIN 1835 B | DIN 844B | NR | Uni

HW

Design
- **Short**
- Right cutting
- Right-hand twist approx. 30°
- **4–6 cutting edges**
- **Centre cutting up to Ø 20 mm,** also free in the middle
- Straight shank with driving surface in accordance with DIN 1835 B
- With eccentric relief grinding

16195
Quality
HSS-E (Co8).

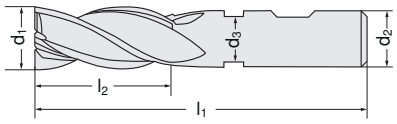
16198
Quality
HSS-E (Co8)/TiAlN-coated.

16195

HSS-E

16198

HSS-E TiAlN



d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	HSS-E 16195	HSS-E ...	HSS-E/TiAlN 16198	HSS-E/TiAlN ...
10.0	22	72	10	9.0	4		105		105
11.0	22	79	12	-	4		106		106
12.0	26	83	12	11.0	4		107		107
13.0	26	83	12	-	4		108		108
14.0	26	83	12	-	4		109		109
15.0	26	83	12	-	4		110		110
16.0	32	92	16	15.0	4		111		111
17.0	32	92	16	-	4		112		112
18.0	32	92	16	-	4		113		113
20.0	38	104	20	19.0	4		116		116

d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	HSS-E 16195	HSS-E ...	HSS-E/TiAlN 16198	HSS-E/TiAlN ...
22.0	38	104	20	-	5		117		117
24.0	45	121	25	-	5		119		
25.0	45	121	25	24.0	5		120		120
26.0	45	121	25	-	6		121		121
28.0	45	121	25	-	6		122		122
30.0	45	121	25	-	6		123		123
32.0	53	133	32	31.0	6		124		124
36.0	53	133	32	-	6		126		126
40.0	63	155	40	39.0	6		129		129

	Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16195	70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	40	-
16198	100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	-	65	-

16200 Shank roughing cutter

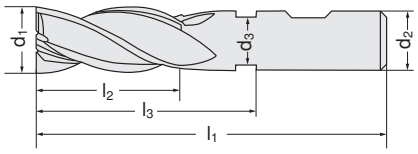
HSS-E | Z 4–6 | ≈ 30° | DIN 1835 B | DIN 844B | NR | Uni

HW

Design
- **Long**
- Right cutting
- With roughing teeth
- Right-hand twist approx. 30°
- **4–6 cutting edges**
- **Centre cutting up to Ø 32 mm**
- Straight shank with driving surface in accordance with DIN 1835 B
- With eccentric relief grinding, over Ø 10.0 mm with double relief grinding

Quality
HSS-E (Co5).

16200



d_1 k12 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	16200	...
8.0	38	48	88	10	7.5	4		100
10.0	45	55	95	10	9.5	4		101
12.0	53	65	110	12	11.5	4		102
14.0	53	65	110	12	11.5	4		103
16.0	63	75	123	16	15.5	4		105
18.0	63	75	123	16	15.5	4		106

d_1 k12 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	16200	...
20.0	75	91	141	20	19.5	4		107
25.0	90	110	166	25	24.5	4		110
30.0	90	110	166	25	24.5	6		113
32.0	106	126	186	32	31.5	6		114
36.0	106	126	186	32	31.5	6		115

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
40–120	40–90	40–90	45–50	30–35	25–38	15–30	10–25	-	-	-	-	-	5–18	3–15	3–15	24–40	50–60

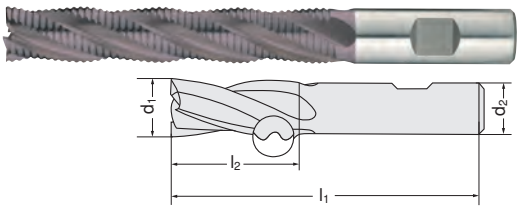
16209 Shank roughing cutter

HSS-E TiAIN | Z 4–5 | ≈ 30° | DIN 1835 B | NR | Uni

Design
- **Extra-long**
- Right cutting
- Right-hand twist approx. 30°
- **4–5 cutting edges**
- Straight shank with driving surface in accordance with DIN 1835 B

Quality
HSS-E/TiAIN.

16209



d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	16209	...
6.0	40	100	6	4		106
8.0	65	115	8	4		108
10.0	65	115	10	4		110
12.0	75	132	12	4		112

d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	16209	...
16.0	100	160	16	4		116
20.0	125	191	20	4		120
25.0	125	201	25	5		125

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70–200	40–150	40–150	75–85	45–55	40–60	20–50	12–40	-	-	-	-	-	5–28	3–25	-	40–70	80-100

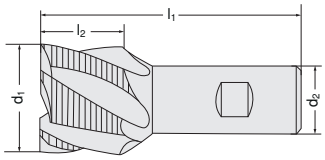
16205 Shank roughing cutter

HSS-E | Z 6–8 | ≈ 35° | DIN 1835 B | NR | Uni

Design
Short, 6–8 cutting edges, straight shank with driving surface in accordance with DIN 1835 B. Relief ground cord profile, right-hand spiral 35°. Roughing teeth.

Quality
HSS-E (Co5).

16205



d_1 k12 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16205	...
30.0	30	90	20	6		101
35.0	30	90	20	6		102
40.0	32	95	25	8		103
50.0	36	100	32	8		104

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70–120	40–70	40–70	28–32	25–30	18–25	16–22	12–18	-	-	-	-	-	5–15	3–12	3–12	30–50	50–70

16220 - 16223 Shank roughing finishing cutters

Z 3 | ≈ 30° | DIN 1835 B | DIN 844B | NF | Uni

Design
- **Short**
- **3 cutting edges**
- Right cutting
- **Centre cutting**
- Right-hand twist approx. 30°
- Straight shank with driving surface in accordance with DIN 1835 B
- With eccentric relief grinding, over Ø 10.0 mm with double relief grinding

16220
Quality
HSS-E (Co8).

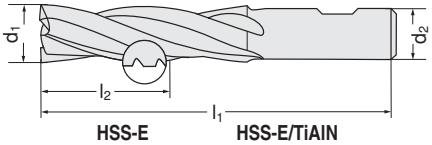
16223
Quality
HSS-E (Co8)/TiAIN-coated.

16220

HSS-E

16223

HSS-E TiAIN



d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16220	...	HSS-E/TiAIN 16223	...
6.0	13	57	6		101		101
8.0	19	69	10		102		102
10.0	22	72	10		103		103
12.0	26	83	12		104		104
14.0	26	83	12		105		105
16.0	32	92	16		106		106
18.0	32	92	16		107		107
20.0	38	104	20		108		108

d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	HSS-E 16220	...	HSS-E/TiAIN 16223	...
22.0	38	104	20				109
25.0	45	121	25		110		110
28.0	45	121	25				111
30.0	45	121	25		112		112
32.0	53	133	32				113
36.0	53	133	32				114
40.0	63	155	32				115

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16220																	
70	60	60	50	40	40	30	20	-	-	-	-	-	20	15	10	40	-
16223																	
100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	15	65	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16260 - 16268 Shank roughing cutter

Z 4–6 | ≈ 35° | DIN 1835 B | DIN 844B | HR | Uni

Design
- **Short**
- **4–6 cutting edges**
- With eccentric relief grinding
- With released straight shank with driving surface in accordance with DIN 1835 B
- Fine roughing profile
- Right cutting with centre cutting
- Right-hand twist approx. 35°

16260
Design
- Cutting tolerance js14
Quality
HSS-E (Co8).

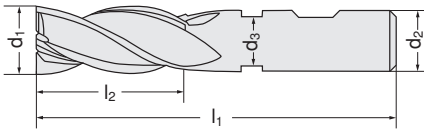
16262
Design
- Cutting tolerance js14
Quality
HSS-E (Co8)/TiAlN-coated.

16268
Design
- Cutting tolerance k12
Applications
Also suitable for dry machining.
Quality
HSS-E-PM/TiAlN-coated.

16260
HSS-E

16262
HSS-E TiAlN

16268
HSS-E-PM TiAlN



						HSS-E		HSS-E/TiAlN		HSS-E-PM/TiAlN	
d_1 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	16260	...	16262	...	16268	...
6.0	13	57	6	5.5	4		**101**		**101**		**101**
8.0	19	69	10	7.5	4		**102**		**102**		**102**
10.0	22	72	10	9.0	4		**103**		**103**		**103**
12.0	26	83	12	11.0	4		**104**		**104**		**104**
14.0	26	83	12	-	4		**105**		**105**		**105**
16.0	32	92	16	15.0	4		**106**		**106**		**106**
18.0	32	92	16	-	4		**107**		**107**		**107**
20.0	38	104	20	19.0	4		**108**		**108**		**108**
25.0	45	121	25	24.0	5		**109**		**109**		**109**
30.0	45	121	25	-	6						**110**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16260																	
70–120	40–70	40–70	28–32	25–30	18–25	16–22	12–18	-	-	-	-	-	5–15	3–12	3–12	30–50	50–70
16262																	
70–200	40–150	40–150	75–85	45–55	40–60	20–50	12–40	-	-	-	-	-	5–28	3–25	3–25	40–70	80–100
16268																	
140–250	120–140	90–120	80–90	70–80	55–65	50–60	40–50	-	-	-	-	-	40–45	35–40	-	60–90	80–120

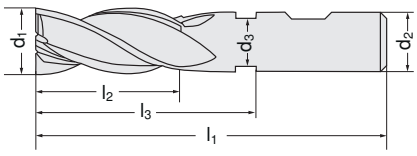
16270 Shank roughing cutter

HSS-E-PM TiAlN | HPC | Z 3–6 | ≈ 45° | DIN 1835 B | 45° | DIN 844B | HR | VA

Quality
HSS-E-PM/TiAlN-coated.

Design
- With high-performance roughing teeth
Applications
For roughing with the most stringent demands of the service life.

16270



d_1 k12 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	16270	...
4.0	11	-	55	6	-	3		**204**
5.0	13	21	57	6	4.8	4		**205**
6.0	16	21	57	6	5.5	4		**206**
8.0	16	27	63	8	7.5	4		**208**
10.0	22	32	72	10	9.5	4		**210**
12.0	25	38	83	12	11.5	4		**212**
16.0	32	44	92	16	15.5	5		**216**
20.0	38	54	104	20	19.5	6		**220**
25.0	45	65	121	25	24.5	6		**225**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200–450	120–140	60–80	80–90	70–80	50–70	40–50	30–40	30–35	-	-	-	-	40–45	40–45	16–30	-	-

16277 - 16278 Shank roughing cutter

≈ 30° | Z 3–6 | DIN 1835 B | DIN 844B | HR | Uni

Design
Long, 3–6 cutting edges, centre cutting up to Ø 20 mm, also free in the middle. Straight shank with driving surface in accordance with DIN 1835 B, fine roughing profile, right-hand spiral 30°.

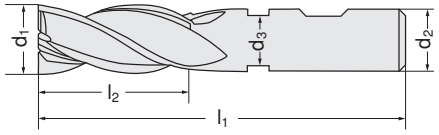
16277
Quality
HSS-E (Co8).

16278
Quality
HSS-E (Co8)/TiAlN-coated.

HSS-E — 16277

HSS-E TiAlN — 16278

d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	HSS-E 16277	...	HSS-E/TiAlN 16278	...
6.0	24	68	6	5.5	3		101		101
8.0	38	88	10	7.5	3		102		102
10.0	45	95	10	9.0	4		103		103
12.0	53	110	12	11.0	4		104		104
14.0	53	110	12	-	4		105		105
16.0	63	123	16	15.0	4		106		106
18.0	63	123	16	-	4				107
20.0	75	141	20	19.0	4		108		108
22.0	75	141	20	-	5		109		109
25.0	90	166	25	24.0	5		110		110
28.0	90	166	25	-	6				111
30.0	90	166	25	-	6				112



Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16277																	
70–120	40–70	40–70	28–32	25–30	18–25	16–22	12–18	-	-	-	-	-	5–15	3–12	3–12	-	-
16278																	
70–200	40–150	40–150	75–85	45–55	40–60	20–50	12–40	-	-	-	-	-	5–28	3–25	-	40–70	80-100

16281 Radius roughing cutter

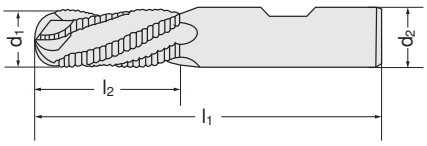
HSS-E TiAlN | Z 3–4 | ≈ 35° | DIN 1835 B | DIN 844B | HR | Uni

Design
Short, 3–4 cutting edges, centre cutting. Straight shank with driving surface in accordance with DIN 1835 B, fine roughing profile, right-hand spiral 35°.

Quality
HSS-E (Co8)/TiAlN-coated.

16281

d_1 js14 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16281	...
6.0	13	57	6	3		101
8.0	19	69	10	3		102
10.0	22	72	10	3		103
12.0	26	83	12	4		104
16.0	32	92	16	4		105
20.0	38	104	20	4		106
25.0	45	121	25	4		107



Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100	90	90	80	65	65	45	30	-	-	-	-	-	30	20	15	65	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16370 T-slot cutter

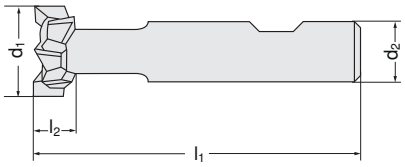
HSS-E | Z 6-8 | DIN 1835 B | DIN 851 | N | ≤ 1000 N/mm²

Design
- **Type N**
- **6-8 cutting edges**
- Right cutting
- Cross-toothed
- For cutting on periphery and end face
- Straight shank with driving surface in accordance with DIN 1835 B

Applications
For cutting T-slots in accordance with DIN 650.

Quality
HSS-E (Co5).

16370



For T-slots nominal dimension	d_1 d11 mm	l_2 d11 mm	l_1 mm	d_2 h6 mm	Z	16370	...
6.0	12.5	6	57	10	6		**201**
8.0	16.0	8	62	10	6		**202**
10.0	18.0	8	70	12	6		**203**
10.0	19.0	9	71	12	6		**204**
12.0	21.0	9	74	12	6		**205**
12.0	22.0	10	75	12	6		**206**
14.0	25.0	11	82	16	8		**207**
16.0	28.0	12	85	16	8		**208**
18.0	32.0	14	90	16	8		**209**
20.0	36.0	16	103	25	8		**210**
22.0	40.0	18	108	25	10		**211**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
75–150	30–75	30–45	40–45	30–35	28–30	25–28	-	-	-	-	-	-	20–23	18–20	10–20	22–35	60–120

16375 Keyway cutters

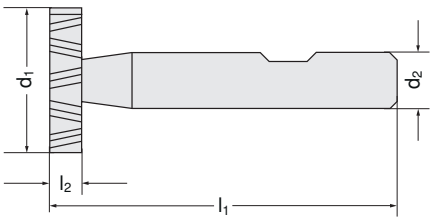
HSS-E | Z 6-12 | DIN 1835 B | DIN 850D | N | ≤ 1000 N/mm²

Design
- **6-12 cutting edges**
- Right cutting
- Cross-toothed
- For cutting on periphery
- Straight shank with driving surface in accordance with DIN 1835 B

Applications
For cutting grooves for disc springs in accordance with DIN 6888.

Quality
HSS-E (Co5).

16375



d_1 h12 x l_2 e8 mm	for disc springs width x height mm	l_1 mm	d_2 h6 mm	Z	16375	...
10.5 x 2.0	2.0 x 3.7	50	6	8		**104**
10.5 x 2.5	2.5 x 3.7	50	6	8		**105**
10.5 x 3.0	3.0 x 3.7	50	6	6		**106**
13.5 x 3.0	3.0 x 5.0	56	10	6		**107**
***13.5 x 2.0**	-	56	10	6		**125**
13.5 x 4.0	4.0 x 5.0	56	10	6		**108**
16.5 x 3.0	3.0 x 6.5	56	10	6		**109**
16.5 x 4.0	4.0 x 6.5	56	10	6		**110**
16.5 x 5.0	5.0 x 6.5	56	10	6		**111**
19.5 x 4.0	4.0 x 7.5	63	10	8		**112**
***19.5 x 3.0**	-	63	10	8		**126**
19.5 x 5.0	5.0 x 7.5	63	10	8		**113**
19.5 x 6.0	6.0 x 7.5	63	10	8		**114**
22.5 x 5.0	5.0 x 9.0	63	10	8		**115**
***22.5 x 4.0**	-	63	10	8		**127**
22.5 x 6.0	6.0 x 9.0	63	10	8		**116**
22.5 x 8.0	8.0 x 9.0	63	10	8		**117**
25.5 x 6.0	6.0 x 10.0	63	10	10		**118**
***25.5 x 5.0**	-	63	10	10		**128**
28.5 x 6.0	6.0 x 11.0	63	10	10		**119**
28.5 x 8.0	8.0 x 11.0	63	10	10		**120**
28.5 x 10.0	10.0 x 11.0	71	12	10		**121**
32.5 x 8.0	8.0 x 13.0	71	12	12		**122**
***32.5 x 6.0**	-	71	12	10		**129**
32.5 x 10.0	10.0 x 13.0	71	12	12		**123**
***38.5 x 8.0**	-	71	12	10		**130**
45.5 x 10.0	10.0 x 16.0	71	12	12		**124**

*** Not DIN 850**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
75–150	30–75	30–45	40–45	30–35	28–30	25–28	-	-	-	-	-	-	20–23	18–20	10–20	22–35	60–120

16380 - 16383 Angle cutters

HSS-E | Z 10-12 | DIN 1835 B | H | ≤ 1000 N/mm²

HW

Design
- Straight shank with driving surface in accordance with DIN 1835 B
- Right cutting
- **10-12 cutting edges**
- Angle tolerance +/-30°

Applications
For cutting angle grooves (slide guideways etc.).

Quality
HSS-E (Co5).

16380
Design
- **Shape C**
- Cutting edge tapering in the direction of the shank
- For cutting on periphery and end face
- **a = 45°**

DIN 1833C

16380

16381
Design
- **Shape C**
- Cutting edge tapering in the direction of the shank
- For cutting on periphery and end face
- **a = 60°**

DIN 1833C

16381

16382
Design
- **Shape D**
- Cutting edge tapering in the direction of the end face
- Only cuts on periphery
- **a = 45°**

DIN 1833D

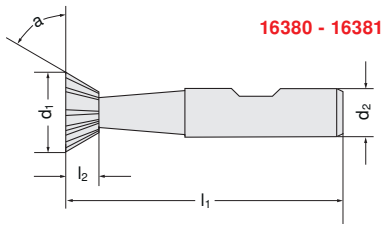
16382

16383
Design
- **Shape D**
- Cutting edge tapering in the direction of the end face
- Only cuts on periphery
- **a = 60°**

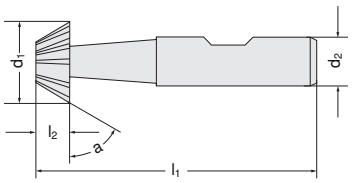
DIN 1833D

16383

16380 - 16381



16382 - 16383



	45°	60°				45° / C		60° / C		45° / D		60° / D	
d_1 mm	l_2 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16380	...	16381	...	16382	...	16383	...
16.0	4.0	6.3	60	12	10		**101**		**101**		**101**		**101**
20.0	5.0	8.0	63	12	10		**102**		**102**		**102**		**102**
25,0	6,3	10,0	67	12	10		**103**		**103**		**103**		**103**
32,0	8,0	12,5	71	16	12		**104**		**104**		**104**		**104**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
75–150	30–75	30–45	40–45	30–35	28–30	25–28	-	-	-	-	-	-	20–23	18–20	10–20	22–35	60–120

16385 Radius cutter

HSS-E | Z 4 | DIN 1835 B | DIN 6518B | N | ≤ 1000 N/mm²

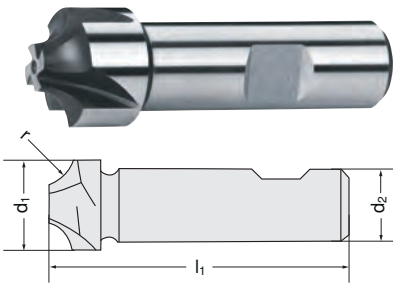
HW

Design
- **Concave** (quarter circle cutter)
- Straight shank with driving surface in accordance with DIN 1835 B
- Right cutting
- **4 cutting edges**

Applications
For materials **up to approx. 1000 N/mm²** strength.

Quality
HSS-E (Co5).

16385



r h11 mm	d_1 mm	d_3 js14 mm	l_1 mm	d_2 h6 mm	Z	16385	...
1.0	8	6	60	10	4		**101**
1.5	10	6	60	10	4		**103**
2.0	10	6	60	10	4		**105**
2.5	10	6	60	10	4		**106**
3.0	12	6	60	12	4		**107**
3.5	14	6	60	12	4		**109**
4.0	14	6	60	12	4		**110**
4.5	16	6	60	12	4		**111**
5.0	16	6	60	12	4		**112**

r h11 mm	d_1 mm	d_3 js14 mm	l_1 mm	d_2 h6 mm	Z	16385	...
6.0	21	8	67	16	4		**114**
8.0	24	8	71	16	4		**118**
10.0	28	8	85	25	4		**119**
12.0	35	10	90	25	4		**121**
14.0	42	16	100	25	4		**124**
16.0	48	16	100	25	4		**126**
18.0	54	16	112	32	4		**127**
20.0	58	16	112	32	4		**128**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
75–150	30–75	30–45	40–45	30–35	28–30	25–28	-	-	-	-	-	-	20–23	18–20	10–20	22–35	60–120

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16500 - 16502 Solid carbide mini cutter

N | Z 3 | ≈ 30° | DIN 6535 HB | Uni

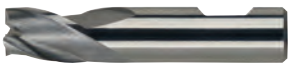
Design
- **Short**
- Right cutting
- **3 cutting edges**
- Right-hand twist approx. 30°
- **Centre cutting**
- Eccentric relief grinding
- Straight shank with driving surface similar to DIN 6535 HB

16500
Quality
Universal carbide ultra-fine grain (P20 - K40).

16502
Quality
Universal carbide ultra-fine grain (P20 - K40) TiAlN-coated.

VHM

16500

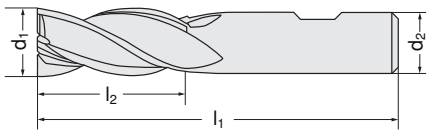


VHM TiAlN

16502

Note:
Re-grinding of cutters with a small cutting-edge diameter is uneconomical.
It is therefore more economical to use cutters up to the wear limit and then throw them away.
You repeatedly use brand-new cutters and reduce the risk of having to scrap finished pieces.

NEW



				Solid carbide		Solid carbide/TiAlN	
d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16500	...	16502	...
1.5	4	35	6				**100**
2.0	4	35	6		**101**		**101**
2.5	4	35	6		**113**		**113**
3.0	5	36	6		**102**		**102**
3.5	5	36	6		**114**		**114**
4.0	7	38	6		**103**		**103**
4.5	7	38	6				**115**
5.0	8	39	6		**104**		**104**

				Solid carbide		Solid carbide/TiAlN	
d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16500	...	16502	...
5.5	8	39	6				**116**
6.0	8	39	6		**105**		**105**
8.0	11	43	8		**106**		**106**
10.0	13	50	10		**107**		**107**
12.0	15	55	12		**108**		**108**
16.0	18	62	16		**110**		
18.0	20	70	18		**111**		

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16500																	
200–300	160–240	140–200	70–100	75–90	60–75	55–70	50–60	-	-	-	-	-	40–60	30–40	-	70–120	-
16502																	
250–280	220–250	220–250	150–180	140–170	120–130	80–100	80–90	70–80	-	-	-	-	50–60	40–50	-	90–150	200–220

16505 - 16507 Solid carbide square end mill

N | Z 2 | ≈ 30° | DIN 6535 HA | Uni

Design
- **Short**
- Right cutting
- **2 cutting edges**
- Right-hand twist approx. 30°
- **Centre cutting**
- With smooth straight shank in accordance with DIN 6535 HA

16505
Quality
Universal carbide ultra-fine grain (P 20 - K 40).

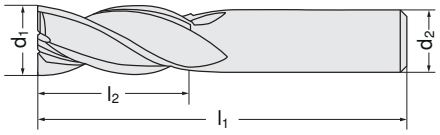
16507
Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.

VHM

16505

VHM TiAlN

16507



				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16505	...	16507	...
2.0	8	32	2.0		**101**		**101**
2.5	8	32	2.5		**102**		**102**
3.0	12	32	3.0		**103**		**103**
3.5	12	32	3.5		**104**		**104**
4.0	12	40	4.0		**105**		**105**
4.5	14	50	4.5		**106**		**106**
5.0	14	50	5.0		**107**		**107**
5.5	16	50	5.5		**108**		**108**
6.0	16	50	6.0		**109**		**109**

				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16505	...	16507	...
7.0	20	60	7.0		**110**		**110**
8.0	20	60	8.0		**111**		**111**
9.0	20	60	9.0		**112**		**112**
10.0	22	70	10.0		**113**		**113**
12.0	22	70	12.0		**114**		**114**
14.0	25	75	14.0		**115**		**115**
16.0	25	75	16.0		**116**		**116**
20.0	32	100	20.0		**117**		**117**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16505																	
180	160	140	120	100	90	80	70	60	-	-	-	-	80	60	-	85	-
16507																	
230	200	180	150	130	120	100	90	80	-	-	-	-	105	80	-	110	-

16603 Solid carbide long hole milling cutter

TiAlN Ultra | N | Z 2 | ≈ 30° | DIN 6535 HA | DIN 6535 HB | 45° | Uni

ATORN®

Design
- 2 cutting edges
- With centre cutting
- Radial relief
- With edge protection chamfer and clearance

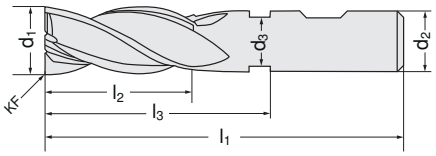
Applications
Universal use for plunge and groove milling.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16603 099-116
Design
With smooth straight shank in accordance with DIN 6535 HA.

16603 117-144
Design
With clamping surface in accordance with DIN 6535 HB.

16603 117-144



d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	16603 ...
0.25	3	-	38	-	0.5	0.1	099
0.35	3	-	38	-	1.0	0.1	100
0.3	3	-	38	-	1.0	0.1	101
0.5	3	-	38	-	1.5	0.1	103
0.8	3	-	38	-	2.0	0.1	106
1.0	3	-	50	-	3.0	0.1	108
1.2	3	-	50	-	4.0	0.1	110
1.4	3	-	50	-	4.0	0.1	111
1.5	3	-	50	-	4.0	0.1	112
1.6	3	-	50	-	4.0	0.1	113
2.0	3	-	50	-	5.0	0.1	115
2.5	3	-	50	-	6.0	0.1	116
2.8	6	2.6	57	15	8.0	0.1	117
3.0	6	2.8	57	15	8.0	0.1	118
3.8	6	3.6	57	15	11.0	0.1	119
4.0	6	3.8	57	15	11.0	0.1	120
4.8	6	4.6	57	21	13	0.1	121
5.0	6	4.8	57	21	13	0.1	122

d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	16603 ...
5.8	6	5.6	57	21	13	0.1	123
6.0	6	5.8	57	21	13	0.1	124
6.8	8	6.6	63	27	16	0.1	125
7.0	8	6.8	63	27	16	0.1	126
7.8	8	7.5	63	27	19	0.1	127
8.0	8	7.7	63	27	19	0.1	128
9.0	10	8.8	72	32	19	0.1	130
9.7	10	9.5	72	32	22	0.1	131
10.0	10	9.8	72	32	22	0.1	132
11.0	12	10.8	83	38	26	0.1	134
11.7	12	11.5	83	38	26	0.1	135
12.0	12	11.8	83	38	26	0.1	136
13.7	14	13.5	83	38	26	0.1	137
14.0	14	13.8	83	38	26	0.1	138
16.0	16	15.7	92	44	32	0.1	140
18.0	18	17.7	92	44	32	0.1	142
20.0	20	19.7	104	54	38	0.1	144

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

16517 Solid carbide square end mill

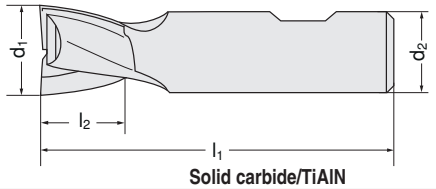
VHM TiAlN | N | Z 2 | ≈ 30° | DIN 6535 HB | Uni

HHW

Design
- **Long**
- Right cutting
- **2 cutting edges**
- Right-hand twist approx. 30°
- Spiral-fluted
- **Centre cutting**
- With clamping surface in accordance with DIN 6535 HB

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16517



Solid carbide/TiAlN

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16517 ...
3.0	7	57	6	101
3.5	7	57	6	102
4.0	8	57	6	103
4.5	8	57	6	104
5.0	10	57	6	105
6.0	10	57	6	106

Solid carbide/TiAlN

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16517 ...
8.0	16	63	8	108
10.0	19	72	10	110
12.0	22	83	12	111
16.0	26	92	16	113
20.0	32	104	20	115

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	100	80	80	65	50	50	-	-	-	-	65	50	-	-	-

16522 - 16524 Solid carbide square end mill

Design
- **Short**
- Right cutting
- **3 cutting edges**
- Right-hand twist approx. 30°
- Spiral-fluted
- **Centre cutting**
- With smooth straight shank in accordance with DIN 6535 HA

16522
Quality
Universal carbide ultra-fine grain (P 20 - K 40)

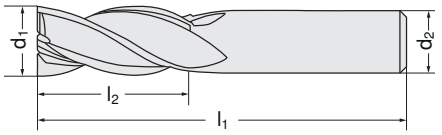
16524
Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.

VHM

16522

VHM TiAlN

16524

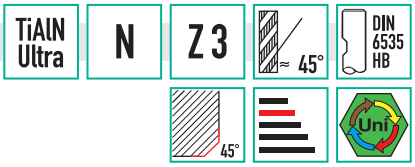


				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16522	...	16524	...
2.0	8	32	2		101		101
3.0	12	32	3		102		102
4.0	12	40	4		103		103
5.0	14	50	5		104		104
6.0	16	50	6		105		105
7.0	20	60	7		106		106
8.0	20	60	8		107		107

				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16522	...	16524	...
9.0	20	60	9		108		108
10.0	22	70	10		109		109
12.0	22	70	12		110		110
14.0	25	75	14		111		111
16.0	25	75	16		112		112
20.0	32	100	20		113		113

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16522																	
-	-	-	120	100	90	80	70	60	-	-	-	-	-	-	-	85	-
16524																	
-	-	-	150	130	120	100	90	80	-	-	-	-	105	80	-	110	-

16605 Solid carbide square end mill

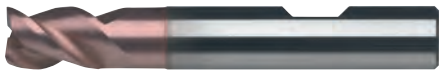


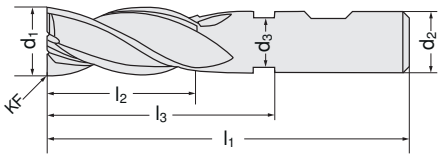
ATORN®

Design
- With clearance and edge protection chamfer
- With centre cutting
- 3 cutting edges

Applications
Universal application for plunge and groove milling, as well as for face and circumferential milling.
Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16605





d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	16605	...
2.0	6	-	50	-	5	0.05	3		100
3.0	6	2.9	50	12	5	0.1	3		101
3.5	6	3.4	50	13	6	0.1	3		102
4.0	6	3.9	50	15	8	0.1	3		103
4.5	6	4.4	54	15	8	0.1	3		104
5.0	6	4.9	54	16	9	0.1	3		105
5.5	6	5.4	54	17	10	0.1	3		106
6.0	6	5.9	54	17	10	0.1	3		107
6.5	8	6.3	54	19	11	0.1	3		108
7.0	8	6.8	58	19	11	0.1	3		109
8.0	8	7.8	58	20	12	0.2	3		110
9.0	10	8.8	66	23	13	0.2	3		111
10.0	10	9.7	66	24	14	0.2	3		112
12.0	12	11.7	73	26	16	0.2	3		113
14.0	14	13.7	75	28	18	0.2	3		114
16.0	16	15.5	82	32	22	0.2	3		115
18.0	18	17.5	84	34	24	0.2	3		116
20.0	20	19.5	92	40	26	0.2	3		117

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

Solid carbide square end mill

16607 Solid carbide square end mill

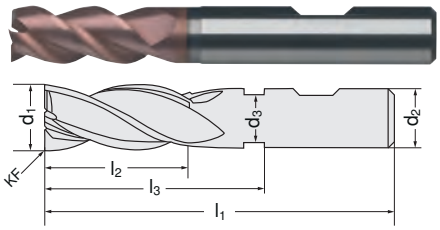
TiAlN Ultra | N | Z 3 | ≈ 45° | DIN 6535 HB | 45° | Uni

ATORN®

Design
- With centre cutting
- With edge protection chamfer and clearance

Applications
Universal application for plunge and groove cutters, as well as for face and circumferential milling.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated. 16607



d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	16607	...
2.0	6	-	57	-	8	0.05		100
3.0	6	2.8	57	15	8	0.05		101
3.5	6	3.3	57	15	11	0.05		102
4.0	6	3.8	57	15	11	0.1		103
4.5	6	4.3	57	21	13	0.1		104
5.0	6	4.8	57	21	13	0.1		105
5.5	6	5.3	57	21	13	0.1		106
6.0	6	5.8	57	21	13	0.1		107
6.5	8	6.3	63	27	16	0.1		108
7.0	8	6.8	63	27	16	0.1		109
7.5	8	7.3	63	27	19	0.2		110

d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	16607	...
8.0	8	7.7	63	27	19	0.2		111
8.5	10	8.3	72	32	19	0.2		112
9.0	10	8.8	72	32	19	0.2		113
9.5	10	9.3	72	32	22	0.2		114
10.0	10	9.8	72	32	22	0.2		115
11.0	12	10.8	83	32	26	0.2		116
12.0	12	11.8	83	38	26	0.2		117
14.0	14	13.8	83	38	26	0.2		118
16.0	16	15.7	92	44	32	0.2		119
18.0	18	17.7	92	44	32	0.2		120
20.0	20	19.7	104	54	38	0.2		121

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

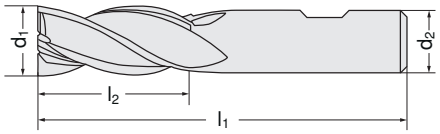
16532 Solid carbide square end mill

VHM TiAlN | N | Z 3 | ≈ 45° | DIN 6535 HB | Uni

HHW

Design
- **Long**
- Right cutting
- **3 cutting edges**
- Right-hand twist approx. 45°
- Spiral-fluted
- **Centre cutting**
- Straight shank with driving surface in accordance with DIN 6535 HB

Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated. 16532



d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16532	...
3.0	7	57	6		101
3.5	7	57	6		102
4.0	8	57	6		103
4.5	8	57	6		104
5.0	10	57	6		105
6.0	10	57	6		106
7.0	13	63	8		107
8.0	16	63	8		108

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16532	...
9.0	16	72	10		109
10.0	19	72	10		110
12.0	22	83	12		111
14.0	22	83	14		112
16.0	26	92	16		113
18.0	26	92	18		114
20.0	32	104	20		115

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
230	200	180	150	130	120	100	90	80	-	-	-	-	105	80	40	110	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16606 Solid carbide square end mill

TiAlN Ultra | N | Z 3 | ≈ 30° | DIN 6535 HB | 45° | Uni

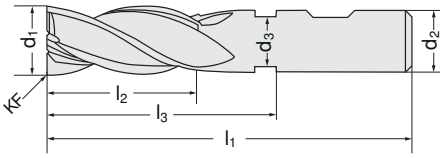
ATORN®

Design
- With clearance and edge protection chamfer
- With centre cutting
- 3 cutting edges

Applications
Universal application for plunge and groove milling, as well as for face and circumferential milling.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16606



d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	16606	...
2.8	6	2.6	57	15	8	0.05	3		**101**
3.0	6	2.8	57	15	8	0.1	3		**102**
3.8	6	3.6	57	15	11	0.1	3		**103**
4.0	6	3.8	57	15	11	0.1	3		**104**
4.8	6	4.6	57	19	13	0.1	3		**105**
5.0	6	4.8	57	19	13	0.1	3		**106**
5.8	6	5.6	57	29	13	0.1	3		**107**
6.0	6	5.8	57	19	13	0.1	3		**108**
6.8	8	6.6	63	25	16	0.1	3		**109**
7.0	8	6.8	63	25	16	0.1	3		**110**
7.8	8	7.6	63	25	19	0.1	3		**111**
8.0	8	7.8	63	30	19	0.1	3		**112**
8.7	10	8.5	72	30	19	0.1	3		**113**
9.0	10	8.8	72	30	19	0.1	3		**114**
9.7	10	9.5	72	30	22	0.1	3		**115**
10.0	10	9.8	72	30	23	0.1	3		**116**
10.7	10	10.5	83	36	26	0.1	3		**117**
11.0	12	10.8	83	36	26	0.1	3		**118**
11.7	12	11.5	83	36	26	0.1	3		**119**
12.0	12	11.8	83	36	26	0.1	3		**120**
13.7	14	13.5	83	36	26	0.1	3		**121**
14.0	14	13.8	83	36	26	0.1	3		**122**
15.7	16	15.4	92	42	32	0.1	3		**123**
16.0	16	15.7	92	42	32	0.1	3		**124**
17.7	18	17.4	92	42	32	0.1	3		**125**
18.0	18	17.7	92	42	32	0.1	3		**126**
19.7	20	19.4	104	52	38	0.1	3		**127**
20.0	20	19.7	104	52	38	0.1	3		**128**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

16612 Solid carbide square end mill

TiAlN Ultra | N | Z 3 | ≈ 45° | DIN 6535 HB | 45° | Uni

ATORN®

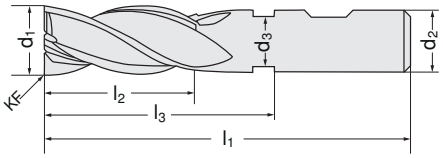
Design
- With clearance and edge protection chamfer
- With centre cutting
- 3 cutting edges

Applications
Universal application for plunge and groove milling, as well as for face and circumferential milling.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16612

d_1 h9 mm	d_2 mm	l_1 mm	l_2 mm	KF mm	Z	16612	...
3.5	6	59	15	0.05	3		**101**
4.0	6	63	19	0.1	3		**102**
4.5	6	63	19	0.1	3		**103**
5.0	6	68	24	0.1	3		**104**
5.5	6	68	24	0.1	3		**105**
6.0	6	68	24	0.1	3		**106**
6.5	8	80	30	0.1	3		**107**
7.0	8	80	30	0.1	3		**108**
7.5	8	80	30	0.1	3		**109**
8.0	8	88	38	0.2	3		**110**
8.5	10	88	38	0.2	3		**111**
9.0	10	88	38	0.2	3		**112**
9.5	10	88	38	0.2	3		**113**
10.0	10	95	45	0.2	3		**114**
11.0	12	102	45	0.2	3		**115**
12.0	12	110	53	0.2	3		**116**
14.0	14	110	53	0.2	3		**117**
16.0	16	123	63	0.2	3		**118**
18.0	18	123	63	0.2	3		**119**
20.0	20	141	75	0.2	3		**120**



Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

16535 Solid carbide high-performance end mill HPC 41/43/45°

VHM TiAlN | HPC | Z 3 | 41°/ 43°/45° | Uni

ATORN®

Design
- With micro corner protection

Advantage:
- Optimised chip removal
- Up to 60% higher feeds
- Up to 4 times the service life
- Best surface quality

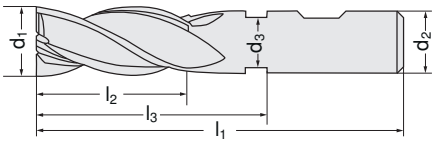
Applications
For roughing and finishing.

Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.

DIN 6535 HA — 16535 203-220

DIN 6535 HB — 16535 303-320

	DIN 6535 HA		DIN 6535 HB	
d_1 e8 mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	d_3 mm	16535	...	16535	...
3.0	8	15	57	6	2.7		**203**		**303**
4.0	11	18	57	6	3.7		**204**		**304**
5.0	13	18	57	6	4.7		**205**		**305**
6.0	13	21	57	6	5.7		**206**		**306**
8.0	19	27	63	8	7.5		**208**		**308**
10.0	22	32	72	10	9.2		**210**		**310**
12.0	26	38	83	12	11.0		**212**		**312**
16.0	32	44	92	16	15.0		**216**		**316**
20.0	38	54	104	20	19.0		**220**		**320**



Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
Roughing																	
-	-	-	180–200	180–200	160–180	160–180	140–160	140–160	-	-	-	-	120–140	100–120	45–55	140–160	-
Finishing																	
-	-	-	260–280	260–280	200–220	200–220	180–200	180–200	-	-	-	-	130–160	100–130	55–70	160–180	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16618 Solid carbide end mill

TiAlN Ultra | N | Z 4 | ≈ 45° | DIN 6535 HB | 90° | Uni

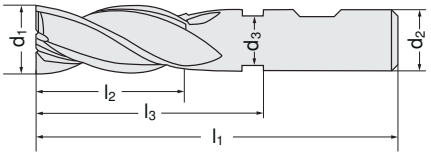
ATORN®

Design
- With clearance and radial relief
- With centre cutting
- 4 cutting edges

Applications
Universal application for finishing.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16618



d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	Z	16618	...
2.0	6	-	57	-	8	4		102
3.0	6	-	57	-	8	4		103
4.0	6	3.9	57	18	11	4		104
5.0	6	4.9	57	19	13	4		105
6.0	6	5.9	57	19	13	4		106
8.0	8	7.7	63	25	19	4		108
10.0	10	9.7	72	30	22	4		110
12.0	12	11.7	83	36	26	4		112
16.0	16	15.5	92	42	32	4		116
20.0	20	19.5	104	52	38	4		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

16552 Solid carbide drill and plunge mill

VHM AlTiN | HPC | Z 4 | 36°/38° | 90° | Uni

HHW

Design
- Face geometry for drilling and ramping with clearance

Advantage:
- High feeds even when ramping and drilling
- Plunge angle up to 45°

Applications
Uneven pitch and uneven twist angle angle to prevent vibrations.

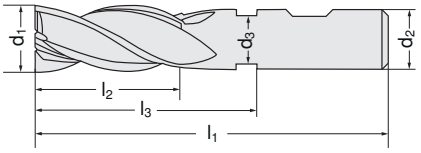
Note:
Undersized tools for precise fitting.

DIN 1835 HA

16552 101-114

DIN 1835 HB

16552 201-214



						DIN 1835 HA		DIN 1835 HB	
d_1 (h10) mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	d_3 mm	16552	...	16552	...
5.7	13	19	57	6	5.4		101		201
6.0	13	19	57	6	5.7		102		202
7.7	19	25	63	8	7.3		103		203
8.0	19	25	63	8	7.6		104		204
9.7	22	30	72	10	9.2		105		205
10.0	22	30	72	10	9.5		106		206
11.7	26	36	83	12	11.2		107		207
12.0	26	36	83	12	11.5		108		208
13.7	26	36	83	14	13.2		109		209
14.0	26	36	83	14	13.5		110		210
15.6	32	42	92	16	15.1		111		211
16.0	32	42	92	16	15.5		112		212
19.5	38	52	104	20	19.0		113		213
20.0	38	52	104	20	19.5		114		214

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	210	200	180	150	120	100	-	-	-	-	120	90	70	150	-

16537 - 16539 Solid carbide square end mill

N | Z 4 | ≈ 30° | DIN 6535 HA | Uni

HW

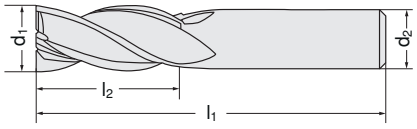
Design
- **Short**
- Right cutting
- **4 cutting edges**
- Right-hand twist approx. 30°
- **Centre cutting**
- With smooth shank in accordance with DIN 6535 HA

16537

VHM

16539

VHM TiAlN



				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16537	...	16539	...
2.0	8	32	2.0		101		101
3.0	12	32	3.0		102		102
4.0	12	40	4.0		103		103
5.0	14	50	5.0		104		104
6.0	16	50	6.0		105		105
7.0	20	60	7.0		106		106

				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16537	...	16539	...
8.0	20	60	8.0		107		107
10.0	22	70	10.0		109		109
12.0	22	70	12.0		110		110
14.0	25	75	14.0		111		111
16.0	25	75	16.0		112		112
20.0	32	100	20.0		113		113

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16537																	
180	160	140	120	100	90	80	70	60	-	-	-	-	80	60	30	85	-
16539																	
230	200	180	150	130	120	100	90	80	-	-	-	-	105	80	40	110	-

16542 - 16543 Solid carbide square end mill

N | Z 4 | ≈ 30° | DIN 6535 HA | Uni

HW

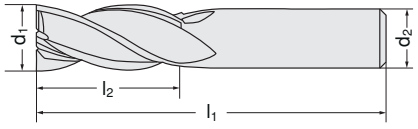
Design
- **Long**
- Right cutting
- **4 cutting edges**
- Right-hand twist approx. 30°
- **Centre cutting**
- With smooth shank in accordance with DIN 6535 HA

16542

VHM

16543

VHM TiAlN



				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16542	...	16543	...
4.0	10	50	4		102		102
5.0	13	50	5		104		104
6.0	13	57	6		106		106
8.0	19	63	8		110		110
10.0	22	72	10		114		114

				Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16542	...	16543	...
12.0	26	83	12		116		116
14.0	26	83	14				118
16.0	32	92	16		120		120
18.0	32	92	18				121
20.0	38	104	20				122

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16542																	
180	160	140	120	100	90	80	70	60	-	-	-	-	80	60	30	85	-
16543																	
230	200	180	150	130	120	100	90	80	-	-	-	-	105	80	40	110	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16610 Solid carbide HPC end mill

TiAlN Ultra | HPC | Z 4 | ≈ 30° | DIN 6535 HA | DIN 6535 HB | Uni

ATORN®

Design
- Short
- With centre cutting
- 4 cutting edges
- 2 cutting edges for centre cutting
- Optimum chip removal thanks to an extremely smooth surface

Applications
Universal application for finishing.

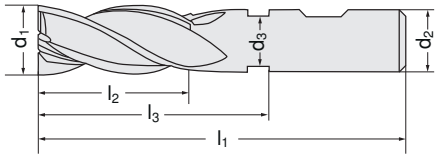
Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16610 102-104
Design
- **Without clearance**
- With smooth straight shank in accordance with DIN 6535 HA

16610 105
Design
- **With clearance**
- With smooth straight shank in accordance with DIN 6535 HA

16610 106-120
Design
- **With clearance**
- With clamping surface in accordance with DIN 6535 HB

16610



d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	16610 ...
2.0	2	-	32	-	8	102
3.0	3	-	38	-	12	103
4.0	4	-	40	-	12	104
5.0	5	4.8	50	20	15	105
6.0	6	5.8	58	20	16	106
8.0	8	7.7	70	32	22	108
10.0	10	9.7	73	31	25	110
12.0	12	9.6	84	37	28	112
16.0	16	15.5	93	43	35	116
20.0	20	19.5	104	52	40	120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

16545 - 16547 Solid carbide square end mill

N | Z 4 | ≈ 30° | DIN 6535 HB | Uni

HHW

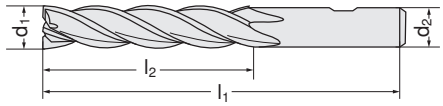
Design
- **Long**
- Right cutting
- **4 cutting edges**
- Right-hand twist approx. 30°
- Spiral-fluted
- **Centre cutting**
- Straight shank with driving surface in accordance with DIN 6535 HB

16545

VHM

16547

VHM TiAlN



d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	Solid carbide 16545 ...	Solid carbide/TiAlN 16547 ...
3.0	8	57	6	101	101
3.5	10	57	6	102	102
4.0	11	57	6	103	103
4.5	11	57	6		104
5.0	13	57	6	105	105
6.0	13	57	6	106	106
7.0	16	63	8		107

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	Solid carbide 16545 ...	Solid carbide/TiAlN 16547 ...
8.0	19	63	8	108	108
9.0	19	72	10		109
10.0	22	72	10	110	110
12.0	26	83	12	111	111
16.0	32	92	16	113	113
18.0	32	92	18		114
20.0	38	104	20	115	115

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16545																	
180	160	140	120	100	90	80	70	60	-	-	-	-	80	60	30	85	-
16547																	
230	200	180	150	130	120	100	90	80	-	-	-	-	105	80	40	110	-

16548 - 16549 Solid carbide square end mill

N | Z 4 | ≈ 30° | DIN 6535 HA | Uni

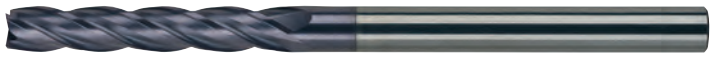
Design
- **Extra-long**
- Right cutting
- **4 cutting edges**
- Right-hand twist approx. 30°
- Spiral-fluted
- **Centre cutting**
- With smooth shank DIN 6535 HA

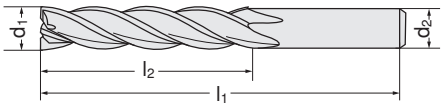
VHM

16548

VHM TiAlN

16549





d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	Solid carbide 16548	...	Solid carbide/TiAlN 16549	...
3.0	30	75	3		101		101
4.0	30	75	4		102		102
5.0	40	100	5		103		103
6.0	50	150	6		104		104

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	Solid carbide 16548	...	Solid carbide/TiAlN 16549	...
8.0	50	150	8		105		105
10.0	60	150	10		106		106
12.0	75	150	12		107		107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16548																	
100	80	70	80	60	60	50	40	40	-	-	-	-	50	40	30	60	-
16549																	
130	100	90	100	80	80	65	50	50	-	-	-	-	65	50	40	80	-

16527 Solid carbide end mill 35/38° HPC Power Uni

VHM TiAlN | HPC | Z 4 | 35°/38° | 45° | Uni

ATORN®

Design
- High-performance tool for roughing/finishing machining tasks with an uneven twist angle
- Face side for centre cutting
- With edge protection chamfer

Advantage:
- Highest level of machining

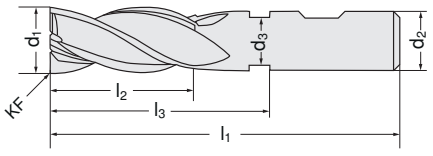
Applications
For machining steel and cast iron and for universal use.

DIN 6535 HA

16527 101-120

DIN 6535 HB

16527 204-220



d_1 (h10) mm	d_3 (h6) mm	l_2 mm	l_3 mm	l_1 mm	KF mm	DIN 6535 HA 16527	...	DIN 6535 HB 16527	...
1.0	4	2.5	3	40	0.025		101		
2.0	4	4.0	6	40	0.05		102		
3.0	4	6.0	9	40	0.075		103		
4.0	6	8.0	12	54	0.1		104		204
5.0	6	10.0	15	54	0.15		105		205
6.0	6	13.0	21	57	0.2		106		206
8.0	8	19.0	27	63	0.2		108		208
10.0	10	22.0	32	72	0.2		110		210
12.0	12	26.0	38	83	0.2		112		212
14.0	14	26.0	38	83	0.3		114		214
16.0	16	32.0	44	92	0.3		116		216
18.0	18	32.0	44	92	0.3		118		218
20.0	20	38.0	54	104	0.3		120		220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	230–275	200–275	200–240	140–180	110–140	100–120	-	-	-	-	-	-	-	150–220	

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

VHM Varocon | HPC | Z 4 | 45° | ≠ | 35°/38° | Norm | DIN 6535 HA | DIN 6535 HB | ≤ 1400 N/mm²

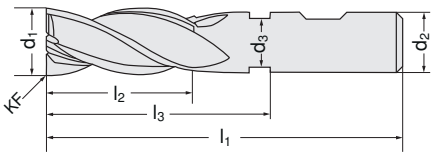
Design
- Specially edge-treated solid carbide HPC end mill with **Varocon Plus coating**
- High machining volumes possible
- Additional special feature of the HHW HPC Premium cutter is the face specially optimised for ramping
- Micro-geometry and defined cutting edge preparation
- Polished chip chambers

Applications
High-performance tool for steel machining.
For roughing and finishing.

Quality
Solid carbide ultra-fine grain.

NEW

Note:
This tool is not suitable for steels with high chromium content.
Make sure the tool and workpiece are strongly clamped.



Short without clearance

16592 103-120

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	KF x 45° mm	DIN 6535 HA 16592 ...	DIN 6535 HB 16592 ...
3.0	6	54	6	0.06	103	203
4.0	8	54	6	0.08	104	204
5.0	9	54	6	0.10	105	205
6.0	10	54	6	0.13	106	206
8.0	12	58	8	0.15	108	208
10.0	14	66	10	0.20	110	210
12.0	16	73	12	0.25	112	212
16.0	22	82	16	0.35	116	216
20.0	26	92	20	0.40	120	220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	280	270	260	250	190	180	-	-	-	-	-	-	-	220	-

Long with clearance

16593 103-120

d_1 h10 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16593 ...	DIN 6535 HB 16593 ...
3.0	8	18	57	6	2.8	0.06	103	203
4.0	11	21	57	6	3.6	0.08	104	204
5.0	13	21	57	6	4.6	0.10	105	205
6.0	13	21	57	6	5.5	0.13	106	206
8.0	19	27	63	8	7.5	0.15	108	208
10.0	22	32	72	10	9.5	0.20	110	210
12.0	26	38	83	12	11.5	0.25	112	212
16.0	32	44	92	16	15.5	0.35	116	216
20.0	38	54	104	20	19.5	0.40	120	220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	280	270	260	250	190	180	-	-	-	-	-	-	-	220	-

Extra-long with clearance

16594 106-120

d_1 h10 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16594 ...	DIN 6535 HB 16594 ...
6.0	22	42	80	6	5.5	0.13	106	206
8.0	28	62	100	8	7.5	0.15	108	208
10.0	33	58	100	10	9.5	0.20	110	210
12.0	42	73	120	12	11.5	0.25	112	212
16.0	53	100	150	16	15.5	0.35	116	216
20.0	68	98	150	20	19.5	0.40	120	220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	220	210	200	190	150	140	-	-	-	-	-	-	-	200	-

16533 - 16534 Solid carbide end mill 35/38° G2

HPC | Z 4 | 35°/38° | VHM TiAlN | DIN 6535 HB

16533

VHM TiAlN | DIN 6535 HB | Uni

16534 103-120

VHM Nacro | DIN 6535 HB | VA | Ti/Ni

16534 204-220

VHM TiAlN | DIN 6535 HA | Uni

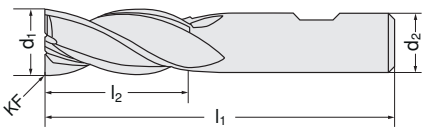
16534 304-320

Design
- **4 cutting edges**
- **Centre cutting**
- Right-hand twist with uneven **pitch 35/38°**
- Optimised chip chamber
- Up to 80% longer service life
- Up to 60% more feed
- Roughing and finishing with just one tool
- No vibration

Applications
Uneven twist angles produce smooth, **vibration-free running** and good surface quality. **High machining performance.**

Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.
Type VA: Nacro-coated.

Short					Short/6535HB	
d_1 mm	l_2 mm	l_1 mm	d_2 mm	KF mm	16533	...
3.0	6	54	6	0.10		103
4.0	8	54	6	0.13		104
5.0	9	54	6	0.18		105
6.0	10	54	6	0.20		106
7.0	12	58	8	0.20		107
8.0	12	58	8	0.20		108
9.0	14	66	10	0.30		109
10.0	14	66	10	0.30		110
11.0	16	73	12	0.30		111
12.0	16	73	12	0.30		112
14.0	18	75	14	0.30		114
16.0	22	82	16	0.40		116
18.0	24	84	18	0.40		118
20.0	26	92	20	0.50		120



Long					Long/6535HB		VA/6535HB		Long/6535HA	
d_1 mm	l_2 mm	l_1 mm	d_2 mm	KF mm	16534	...	16534	...	16534	...
3.0	8	57	6	0.10		103				
4.0	11	57	6	0.13		104		204		304
5.0	13	57	6	0.18		105		205		305
6.0	13	57	6	0.20		106		206		306
7.0	19	63	8	0.20		107				307
8.0	19	63	8	0.20		108		208		308
9.0	22	72	10	0.30		109				309
10.0	22	72	10	0.30		110		210		310
11.0	26	83	12	0.30		111				311
12.0	26	83	12	0.30		112		212		312
14.0	26	83	14	0.30		114				314
16.0	32	92	16	0.40		116		216		316
18.0	32	92	18	0.40		118				318
20.0	38	104	20	0.50		120		220		320

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
Roughing																	
450	250	80–160	180–230	180–190	170–180	165–170	150–160	40–60	-	-	-	-	105–130	70–75	105–160	145–160	-
Finishing																	
600	400	140–250	300	220–235	210–220	190–210	180–190	50–80	-	-	-	-	130–160	80–90	130–200	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16536 Solid carbide end mill 35/38° HPC G2 with released shank

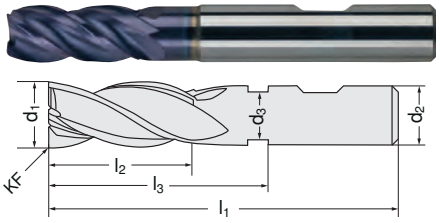
VHM TiAlN | HPC | Z 4 | 35°/38° | DIN 6535 HB | | | Uni

Design
- **Long**
- With released straight shank with driving surface in accordance with DIN 6535 HB
- **4 cutting edges**
- **Centre cutting**
- Right-hand twist with uneven **pitch 35/38°**
- Optimised chip chamber
- Up to 80% longer service life
- Up to 60% more feed
- Roughing and finishing with just one tool

Applications
For materials up to HRC 52.
Uneven twist angles produce smooth, **vibration-free running** and good surface quality.
High machining performance.

Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.

16536



d_1 mm	d_3 mm	l_2 mm	l_1 mm	d_2 mm	l_3 mm	KF mm	16536	...
4.0	3.6	11	57	6	21	0.13		101
5.0	4.6	13	57	6	21	0.18		102
6.0	5.5	13	57	6	21	0.2		103
7.0	6.5	19	63	8	27	0.2		104
8.0	7.5	19	63	8	27	0.2		105
9.0	8.5	22	72	10	32	0.3		106
10.0	9.5	22	72	10	32	0.3		107

d_1 mm	d_3 mm	l_2 mm	l_1 mm	d_2 mm	l_3 mm	KF mm	16536	...
11.0	10.5	26	83	12	38	0.3		108
12.0	11.5	26	83	12	38	0.3		109
13.0	12.5	26	83	14	42	0.3		110
14.0	13.5	26	83	14	42	0.3		111
16.0	15.5	32	92	16	44	0.4		112
18.0	17.5	32	92	18	50	0.4		113
20.0	19.5	38	104	20	54	0.5		114

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
Roughing																	
450	250	80–160	180–230	180–190	170–180	165–170	150–160	40–60	-	-	-	-	105–130	70–75	105–160	145–160	-
Finishing																	
600	400	140–250	300	220–235	210–220	190–210	180–190	50–80	-	-	-	-	130–160	80–90	130–200	-	-

16627 Solid carbide HPC end mill

TiAlN Ultra | HPC | N | Z 4 | 35°/38° | DIN 6535 HB | 45° | | Uni

ATORN®

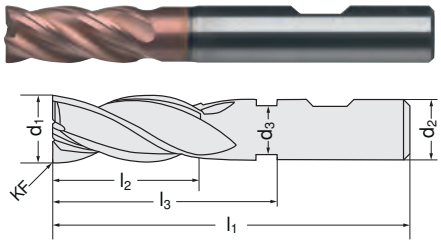
Design
- With clearance and edge protection chamfer
- With centre cutting
- 4 cutting edges

Advantage:
- Maximum smoothness

Applications
For roughing and finishing with the highest feed values of up to 1x5xD.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16627



d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	16627	...
3.0	6	2.7	50	10	5	0.05	4		101
3.0	6	2.7	57	13	8	0.05	4		102
4.0	6	3.7	54	17	8	0.1	4		103
4.0	6	3.7	57	17	11	0.1	4		104
5.0	6	4.7	54	14	9	0.1	4		105
5.0	6	4.7	57	17	13	0.1	4		106
6.0	6	5.5	54	17	10	0.1	4		107
6.0	6	5.5	57	19	13	0.1	4		108
8.0	8	7.4	58	22	12	0.2	4		109
8.0	8	7.4	63	25	21	0.2	4		110
10.0	10	9.2	66	26	14	0.2	4		111
10.0	10	9.2	72	30	22	0.2	4		112
12.0	12	11.0	73	28	16	0.2	4		113
12.0	12	11.0	83	36	26	0.2	4		114
14.0	14	13.0	83	36	26	0.2	4		115
16.0	16	15.0	82	34	22	0.2	4		116
16.0	16	15.0	92	42	36	0.2	4		117
20.0	20	19.0	92	42	26	0.2	4		118
20.0	20	19.0	104	52	41	0.2	4		119

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	240–250	230–240	150–200	150–190	150–190	150–170	-	-	-	-	-	-	-	140–200	-

16538 Solid carbide end mill 35/38° HPC with internal cooling supply

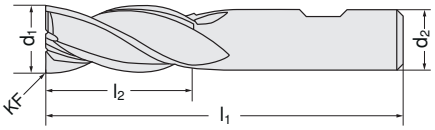
Design
- **Type H, long**
- Straight shank with driving surface in accordance with DIN 6535 HB
- **4 cutting edges**
- **Centre cutting**
- Right-hand twist with uneven **pitch 35/38°**
- Optimised chip chamber
- Up to 80% longer service life
- Up to 60% more feed
- Roughing and finishing with just one tool

Applications
For materials up to HRC 52.
Uneven twist angles produce smooth, **vibration-free running** and good surface quality.
High machining performance.

Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.

VHM TiAlN | HPC | Z 4 | 35°/38° | DIN 6535 HB | H | Uni

16538



d_1 mm	l_2 mm	l_1 mm	d_2 mm	KF mm	16538	...
6.0	13	57	6	0.2		106
8.0	19	63	8	0.2		108
10.0	22	72	10	0.3		110

d_1 mm	l_2 mm	l_1 mm	d_2 mm	KF mm	16538	...
12.0	26	83	12	0.3		112
16.0	32	92	16	0.4		116
20.0	38	104	20	0.5		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
Roughing																	
450	250	80–160	180–230	180–190	170–180	165–170	150–160	40–60	-	-	-	-	105–130	70–75	105–160	145–160	-
Finishing																	
600	400	140–250	300	220–235	210–220	190–210	180–190	50–80	-	-	-	-	130–160	80–90	130–200	-	-

16540 Solid carbide end mill 35/38° HPC G2 with corner radius

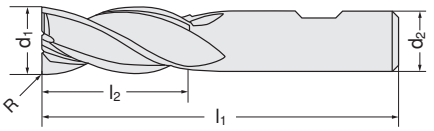
Design
- **Type H, long**
- Straight shank with driving surface in accordance with DIN 6535 HB
- **4 cutting edges**
- **Centre cutting**
- Right-hand twist with uneven **pitch 35/38°**
- Optimised chip chamber
- Up to 80% longer service life
- Up to 60% more feed
- Roughing and finishing with just one tool

Applications
For materials up to HRC 52.
Uneven twist angles produce smooth, **vibration-free running** and good surface quality.
High machining performance.

Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.

VHM TiAlN | HPC | Z 4 | 35°/38° | DIN 6535 HB | H | Uni

16540



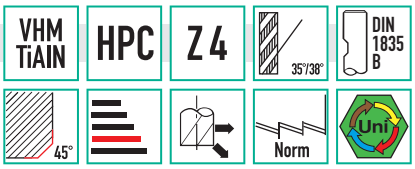
d_1 mm	l_2 mm	l_1 mm	d_2 mm	Corner radius mm	16540	...
4.0	11	57	6	0.50		102
4.0	11	57	6	1.00		103
5.0	13	57	6	0.50		104
5.0	13	57	6	1.00		105
6.0	13	57	6	0.50		107
6.0	13	57	6	1.50		109
6.0	13	57	6	2.00		110
8.0	19	63	8	0.50		111
8.0	19	63	8	1.00		112
8.0	19	63	8	2.00		114

d_1 mm	l_2 mm	l_1 mm	d_2 mm	Corner radius mm	16540	...
10.0	22	72	10	0.50		115
10.0	22	72	10	1.00		116
10.0	22	72	10	1.50		117
12.0	26	83	12	0.50		119
12.0	26	83	12	1.00		120
12.0	26	83	12	1.50		121
12.0	26	83	12	2.00		122
16.0	32	92	16	1.00		125
16.0	32	92	16	2.00		127
16.0	32	92	16	2.50		128
20.0	38	104	20	1.00		131
20.0	38	104	20	2.00		133

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
Roughing																	
450	250	80–160	180–230	180–190	170–180	165–170	150–160	40–60	-	-	-	-	105–130	70–75	105–160	145–160	-
Finishing																	
600	400	140–250	300	220–235	210–220	190–210	180–190	50–80	-	-	-	-	130–160	80–90	130–200	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

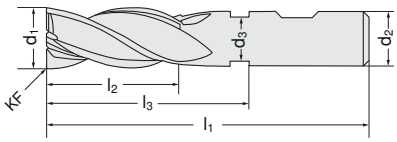
16554 Solid carbide end mill G2 medium long



Design
- Uneven twist 35/38°
- Optimised chip chamber
- Up to 80% longer service life and up to 60% more feed
- Roughing and finishing with just one tool
- Low-vibration running

Advantage:
- Maximum machining performance

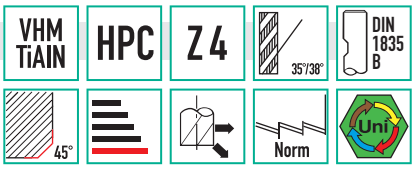
16554



d_1 mm	d_3 mm	l_2 mm	l_1 mm	d_2 mm	l_3 mm	KF mm	16554	...
5.0	4.7	18	62	6	24	0.18		101
6.0	5.6	21	62	6	25	0.2		102
8.0	7.6	26	68	8	30	0.2		103
10.0	9.6	31	80	10	38	0.3		104
12.0	11.4	41	93	12	46	0.3		105
16.0	15.4	52	108	16	58	0.4		106
20.0	19.4	62	126	20	74	0.5		107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	140–160	130–135	120–130	105–120	85–105	60–85	-	-	-	-	65–80	-	-	110–160	-

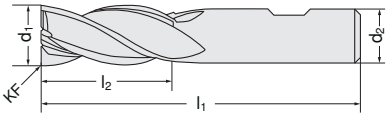
16555 Solid carbide end mill G2 extra long



Design
- Uneven twist 35/38°
- Optimised chip chamber
- Up to 80% longer service life up to 60% more feed
- Roughing and finishing with just one tool
- Low-vibration running

Advantage:
- Maximum machining performance

16555



d_1 mm	l_2 mm	l_1 mm	KF mm	d_2 mm	16555	...
5.0	21	63	0.18	6		101
6.0	22	63	0.2	6		102
8.0	28	80	0.2	8		103
10.0	33	100	0.3	10		104
12.0	42	100	0.3	12		105
14.0	48	100	0.3	14		106
16.0	53	150	0.4	16		107
20.0	68	150	0.5	20		108
25.0	85	165	0.5	25		109

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	110-120	100-110	90-100	80-90	65-80	45-65	-	-	-	-	50-60	-	-	85-120	-

16591 Solid carbide end mill Premium Gold Edition

VHM Multilay HPC³ | Z 4 | 35°/38° | Norm | ≤ 1200 N/mm²

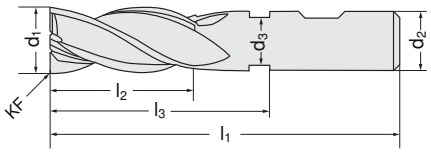
Design
- High-performance tool with improved substrate
- With increasing core size
- Large shaped groove
- Defined support chamfer
- Roughened clamping shank
- Uneven pitch
- New multi-layer smooth layer
- With clearance

Advantage:
- **Extremely long service life**
- **Maximum smoothness**
- **Maximum process reliability**

Applications
For universal use with all steel materials. HPC cutter for roughing and finishing.

DIN 6535 HA — 16591 103-125

DIN 6535 HB — 16591 203-225



d_1 mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	d_3 mm	KF mm	DIN 6535 HA 16591	...	DIN 6535 HB 16591	...
3.0	8	18	57	6	2.8	0.13		103		203
4.0	11	21	57	6	3.6	0.18		104		204
5.0	13	21	57	6	4.6	0.20		105		205
6.0	13	21	57	6	5.5	0.20		106		206
8.0	19	27	63	8	7.5	0.20		108		208
10.0	22	32	72	10	9.5	0.30		110		210
12.0	26	38	83	12	11.5	0.30		112		212
16.0	32	44	92	16	15.5	0.40		116		216
20.0	38	54	104	20	19.5	0.50		120		220
25.0	42	65	121	25	24.0	0.50		125		225

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	170-238	160-228	140-222	125-175	110–105	78-109	-	-	-	-	78-109	-	-	140-238	-

16640 Solid carbide HSC torus milling cutter

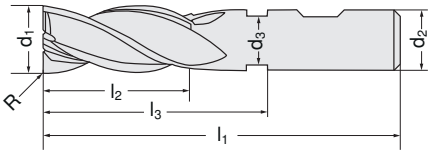
TiAlN Ultra | HSC | N | Z 4 | ≈ 30° | DIN 6535 HB | R | Uni

Design
- With clearance and edge protection chamfer
- With centre cutting
- With uneven cutting edge pitch
- 4 cutting edges

Applications
For circumferential machining and finishing.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16640



d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	R mm	Z	16640	...
3.0	6	2.7	57	13	8	0.1	4		101
3.0	6	2.7	57	13	8	0.4	4		102
3.0	6	2.7	57	13	8	0.5	4		103
3.0	6	2.7	57	13	8	1.0	4		104
4.0	6	3.7	57	17	11	0.1	4		105
4.0	6	3.7	57	17	11	0.4	4		106
4.0	6	3.7	57	17	11	0.5	4		107
4.0	6	3.7	57	17	11	1.0	4		108
5.0	6	4.7	57	19	13	0.1	4		109
5.0	6	4.7	57	19	13	0.5	4		110
5.0	6	4.7	57	19	13	1.0	4		111
6.0	6	5.5	57	19	13	0.1	4		112
6.0	6	5.5	57	19	13	0.5	4		113
6.0	6	5.5	57	19	13	1.0	4		114
6.0	6	5.5	57	19	13	1.5	4		115
8.0	8	7.4	63	25	21	0.15	4		116
8.0	8	7.4	63	25	21	0.5	4		117
8.0	8	7.4	63	25	21	1.0	4		118
8.0	8	7.4	63	25	21	1.5	4		119

d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	R mm	Z	16640	...
8.0	8	7.4	63	25	21	2.0	4		120
10.0	10	9.2	72	30	22	0.15	4		121
10.0	10	9.2	72	30	22	0.5	4		122
10.0	10	9.2	72	30	22	1.0	4		123
10.0	10	9.2	72	30	22	1.5	4		124
10.0	10	9.2	72	36	26	2.0	4		125
12.0	12	11.0	83	36	26	0.2	4		126
12.0	12	11.0	83	36	26	0.5	4		127
12.0	12	11.0	83	36	26	1.0	4		128
12.0	12	11.0	83	36	26	1.5	4		129
12.0	12	11.0	83	36	26	2.0	4		130
16.0	16	15.0	92	42	36	0.3	4		131
16.0	16	15.0	92	42	36	1.0	4		132
16.0	16	15.0	92	42	36	2.0	4		133
16.0	16	15.0	92	42	36	4.0	4		134
20.0	20	19.0	104	52	41	1.0	4		135
20.0	20	19.0	104	52	41	2.0	4		136
20.0	20	19.0	104	52	41	4.0	4		137

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	330–400	220–250	220–250	220–230	180–220	150–180	130–140	130–140	-	-	-	-	120–130	120–130	100–160	120–180	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16616 Solid carbide multi-tooth mills

TiAlN Ultra | N | Z 6–8 | ≈ 45° | DIN 6535 HB | 45° | VA | Uni

ATORN®

Design
- With clearance and edge protection chamfer
- With centre cutting
- 6–8 cutting edges
- 2 cutting edges for centre cutting

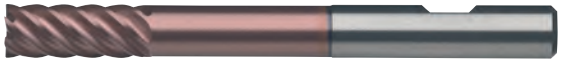
Advantage:
- Optimum surface quality

Applications
For circumferential machining and finishing.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

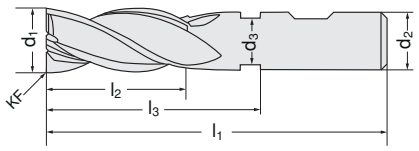
Note:
- Face cut only with shallow feed depth.

16616



Short

d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	16616	...
4.0	6	3.7	57	19	11	0.1	6		**201**
5.0	6	4.7	57	19	13	0.1	6		**202**
6.0	6	5.7	57	19	13	0.1	6		**203**
8.0	8	7.6	63	25	19	0.1	6		**204**
10.0	10	9.6	72	30	22	0.1	6		**205**
12.0	12	11.5	83	36	26	0.2	6		**206**
16.0	16	15.5	92	42	32	0.2	6		**208**
18.0	18	17.5	92	42	32	0.2	8		**209**
20.0	20	19.5	104	52	38	0.2	8		**210**



Long

d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	16616	...
6.0	6	5.7	62	24	18	0.1	6		**303**
8.0	8	7.6	68	30	24	0.1	6		**304**
10.0	10	9.6	80	38	30	0.1	6		**305**
12.0	12	11.5	93	46	36	0.2	6		**306**
16.0	16	15.5	108	58	48	0.2	8		**308**
20.0	20	19.5	126	74	60	0.2	8		**310**

Extra long

d_1 e8 mm	d_2 h5 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	16616	...
6.0	6	5.8	80	40	16	0.1	6		**403**
8.0	8	7.7	100	50	19	0.1	6		**404**
10.0	10	9.7	100	60	25	0.1	6		**405**
12.0	12	11.6	120	60	30	0.2	6		**406**
16.0	16	15.6	150	100	40	0.2	6		**408**
16.0	16	15.5	150	100	75	0.2	6		**409**
20.0	20	19.6	150	100	50	0.2	8		**410**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

16551 Solid carbide end mill

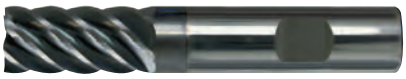
VHM TiAlN | N | Z 6–8 | ≈ 45° | DIN 6535 HB | Uni

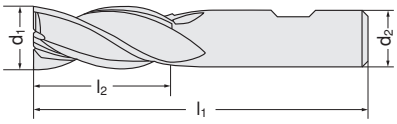
HHW

Design
- Right cutting
- Straight shank with driving surface in accordance with DIN 6535 HB
- Right-hand twist approx. 45°
- **6-8 cutting edges**

Applications
For circumferential milling as a finishing operation to achieve optimum surface quality (face cut only with low cutting depths).

16551





d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16551	...
6.0	13	57	6	6		**101**
8.0	19	63	8	6		**103**
10.0	22	72	10	6		**105**
12.0	26	83	12	6		**106**

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16551	...
14.0	26	83	14	6		**107**
16.0	32	92	16	6		**108**
18.0	32	92	18	8		**109**
20.0	38	104	20	8		**110**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	180	140	130	120	110	100	-	-	-	-	100	80	-	180	-

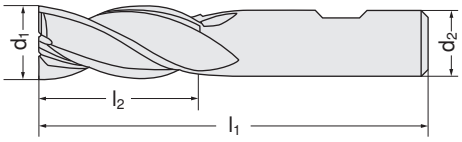
16553 Solid carbide end mill

VHM TiAlN | N | Z 6-8 | ≈ 45° | DIN 6535 HB | Uni

Design
- Right cutting
- Straight shank with driving surface in accordance with DIN 6535 HB
- Right-hand twist approx. 45°
- Eccentric relief grinding for more stable cutting edges
- **6-8 cutting edges**

Applications
For circumferential milling as finishing operation to achieve optimum surface quality.
Especially for working in low-lying and hard-to-reach places.

16553



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16553	...
6.0	18	62	6	6		201
8.0	24	68	8	6		203
10.0	30	80	10	6		205
12.0	36	93	12	6		206

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16553	...
14.0	42	99	14	6		207
16.0	48	108	16	6		208
18.0	54	114	18	8		209
20.0	60	126	20	8		210

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	180	140	130	120	110	100	-	-	-	-	100	80	-	180	-

16642 Solid carbide radius cutter

TiAlN Ultra | N | Z 2 | ≈ 30° | DIN 6535 HA | DIN 6535 HB | Uni

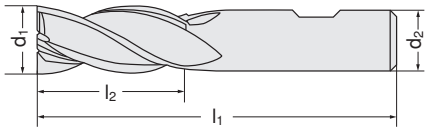
Design
- 2 cutting edges

Applications
Universal use for copy milling and in die and mould making.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

Note:
Up to Ø 5 mm with shank DIN 6535 HA.

16642



d_1 h9 mm	l_2 mm	l_1 mm	d_2 mm	Z	16642	...
3.0	20	60	3	2		103
4.0	30	75	4	2		104
5.0	30	75	5	2		105
6.0	40	100	6	2		106
8.0	40	100	8	2		108
10.0	40	100	10	2		110
12.0	45	100	12	2		112
16.0	65	150	16	2		116
20.0	75	150	20	2		120

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–500	400–500	120–140	70–100	70–90	70–90	60–70	55–70	55–70	-	-	-	-	40–50	40–50	20–50	80–120	-

16643 Solid carbide radius roughing cutter

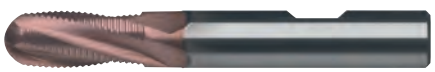
TiAlN Ultra | NR | Z 4 | ≈ 30° | DIN 6535 HB | Uni

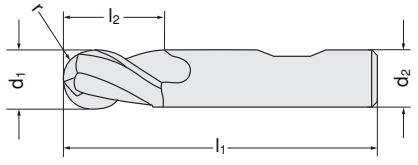
Design
- 4 cutting edges

Applications
Universal use for copy milling and in die and mould making.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16643





d_1 h9 mm	l_2 mm	l_1 mm	d_2 mm	Z	16643	...
6.0	13	57	6	4		106
8.0	19	63	8	4		108
10.0	22	72	10	4		110
12.0	26	83	12	4		112
16.0	32	92	16	4		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	70–100	75–95	55–70	55–70	55–70	-	-	-	-	-	-	-	-	70–120	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16646 Solid carbide HSC radius cutter

TiAlN Ultra | HSC | Z 4 | N | ≈ 30° | DIN 6535 HB | Uni

ATORN®

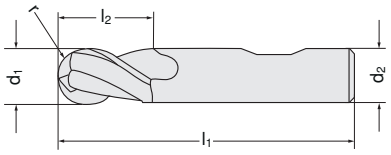
Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

Design
- 4 cutting edges

Applications
Universal use.

16646 206-212

16646 106-116



d_1 h9 mm	l_2 mm	l_1 mm	d_2 mm	Z	Long 16646 ...	Extra long 16646 ...
6.0	13	57	6	4	106	
6.0	40	100	6	4		206
8.0	19	63	8	4	108	
8.0	40	100	8	4		208
10.0	22	72	10	4	110	
10.0	40	100	10	4		210
12.0	26	83	12	4	112	
12.0	45	100	12	4		212

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	150–200	100–130	70–100	70–100	70–80	40–50	30–60	-	-	-	-	-	50–60	40–50	35–50	80–120	-

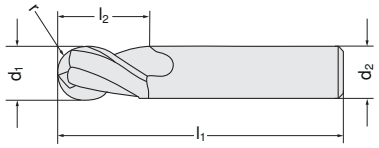
16557 Solid carbide radius cutter

VHM TiAlN | Z 2 | ≈ 30° | DIN 6535 HA | Uni

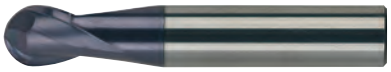
HHW

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

Design
- **Short**
- 2 cutting edges
- **Centre cutting**
- Right-hand spiral approx. 30°
- With smooth shank in accordance with DIN 6535 HA



16557



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16557 ...
3.0	4	48	6	101
4.0	6	50	6	102
5.0	7	51	6	103
6.0	7	51	6	104
8.0	9	59	8	105

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16557 ...
10.0	10	60	10	106
12.0	14	71	12	107
16.0	16	76	16	109
20.0	20	82	20	111

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
230	200	180	150	130	120	100	90	80	-	-	-	-	105	80	40	110	-

16559 Solid carbide radius cutter

VHM TiAlN | Z 2 | ≈ 30° | Uni

HHW

Design
- **Long**
- 2 cutting edges
- **Centre cutting**
- Right-hand spiral approx. 30°

16559 201
Design
- With smooth straight shank in accordance with DIN 6535 HA

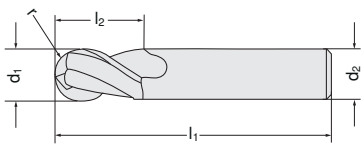
16559 202-212
Design
- With cylindrical shank with driving surface in accordance with DIN 6535 HB

DIN 6535 HA

16559 201

DIN 6535 HB

16559 202-212



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16559 ...
2.0	6	38	3	201
3.0	7	57	6	202
4.0	8	57	6	203
5.0	10	57	6	204
6.0	10	57	6	205

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16559 ...
8.0	16	63	8	206
10.0	19	72	10	207
12.0	22	83	12	208
16.0	26	92	16	210
20.0	32	104	20	212

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
230	200	180	150	130	120	100	90	80	-	-	-	-	105	80	40	110	-

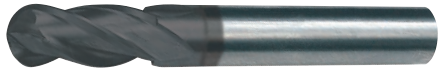
16561 Solid carbide radius cutter

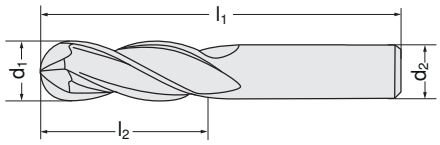
VHM TiAlN | Z 4 | ≈ 30° | DIN 6535 HA | Uni

HW

Design
- **Short**
- **4 cutting edges**
- **Centre cutting**
- Right-hand spiral 30°
- With smooth shank in accordance with DIN 6535 HA

16561





d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16561 ...
3.0	4	48	6	**101**
4.0	6	50	6	**102**
5.0	7	51	6	**103**
6.0	7	51	6	**104**
8.0	9	59	8	**105**
10.0	10	60	10	**106**

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16561 ...
12.0	14	71	12	**107**
14.0	14	71	14	**108**
16.0	16	76	16	**109**
18.0	18	76	18	**110**
20.0	20	82	20	**111**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	150	130	120	100	90	80	-	-	-	-	105	80	40	110	-

16628 Solid carbide roughing cutter

TiAlN Ultra | Z 3–4 | NR | ≈ 45° | DIN 6535 HB | 45° | Uni

ATORN®

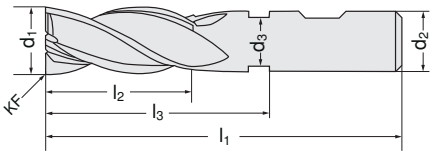
Design
- With clearance and edge protection chamfer
- With centre cutting
- 3-4 cutting edges

Advantage:
- Maximum machining performance

Applications
For roughing. Ideal for dry machining.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16628



d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	16628 ...
4.0	6	3.8	57	18	8	0.1	3	**101**
4.0	6	3.8	57	18	11	0.1	3	**102**
5.0	6	4.8	57	20	9	0.1	3	**103**
5.0	6	4.8	57	20	13	0.1	3	**104**
6.0	6	5.8	57	20	10	0.1	4	**105**
6.0	6	5.8	57	20	13	0.1	4	**106**
8.0	8	7.7	63	25	12	0.2	4	**107**
8.0	8	7.7	63	25	19	0.2	4	**108**
10.0	10	9.5	72	30	15	0.2	4	**109**
10.0	10	9.5	72	30	22	0.2	4	**110**
12.0	12	11.5	83	35	18	0.3	4	**111**
12.0	12	11.5	83	35	26	0.3	4	**112**
16.0	16	15.5	92	40	24	0.3	4	**113**
16.0	16	15.5	92	40	32	0.3	4	**114**
20.0	20	19.5	104	50	30	0.3	4	**115**
20.0	20	19.5	104	50	38	0.3	4	**116**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300–400	85–180	110–180	135–180	135–155	100–120	70–100	70–100	70–100	-	-	-	-	100–120	100–120	60–80	120–180	-

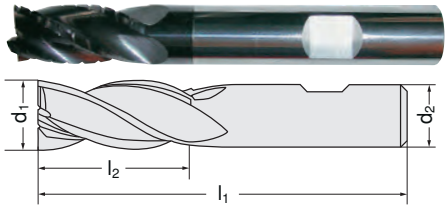
16565 Solid carbide roughing and finishing cutter

VHM TiAlN | Z 4 | ≈ 30° | DIN 6535 HB | NF | Uni

Design
- **With ground chip breakers**
- **Centre cutting**
- 30° spiral for high roughing performance
- With straight shank with driving surface in accordance with DIN 6535 HB.

Applications
For roughing and finishing with extreme feeds in steel. Excellent smoothness as the cutting pressure is reduced by the special chip breakers.

16565



d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16565 ...
5.0	15	57	6	101
6.0	16	57	6	102
8.0	22	63	8	103
10.0	25	72	10	104

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16565 ...
12.0	28	83	12	105
16.0	35	92	16	106
20.0	40	104	20	107

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	120	105	90	70	40–60	-	-	-	-	-	95	70	-	-	-

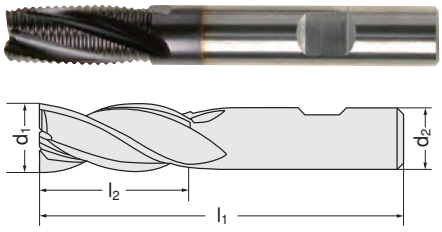
16567 Solid carbide roughing cutter

VHM TiAlN | Z 4 | ≈ 25° | DIN 6535 HB | HR | Uni

Design
- **Long**
- **4 cutting edges**
- **Centre cutting**
- Right-hand twist 25°
- Fine cord profile
- Straight shank with driving surface in accordance with DIN 6535 HB.

Applications
For materials up to HRC 45. Excellent machining performance thanks to roughing teeth. Universal use, including for stainless steel, aluminium, non-ferrous metals and cast materials.

16567



d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16567 ...
3.0	6	57	6	101
4.0	8	57	6	102
5.0	10	57	6	103
6.0	13	57	6	104

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16567 ...
8.0	16	63	8	105
10.0	22	72	10	106
12.0	26	83	12	107
16.0	32	92	16	108

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300	220	-	120	105	90	70	40–60	-	-	-	-	-	70–90	50–70	30–60	80–100	-

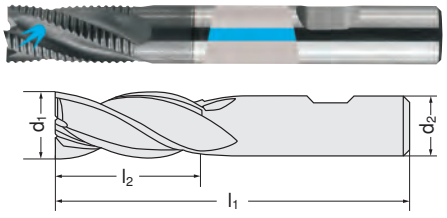
16569 Solid carbide roughing cutter with internal cooling supply

VHM TiAlN | Z 4 | ≈ 25° | DIN 6535 HB | HR | Uni

Design
- **Long**
- **Centre cutting**
- Right-hand twist 25°
- With internal cooling in the flute
- Fine cord profile
- Straight shank with driving surface in accordance with DIN 6535 HB

Use
For materials up to HRC 45. Universal use. The coolant is guided directly to the cutting edges. This results in a long service life and the chips are completely removed. Especially important when milling in solids and when milling out pockets.

16569



d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16569 ...
6.0	13	57	6	101
8.0	16	63	8	102
10.0	22	72	10	103

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	16569 ...
12.0	26	83	12	104
16.0	32	92	16	105
20.0	38	104	20	106

Al<10%Si	Al >10% Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300	220	-	120	105	90	70	40–60	-	-	-	-	-	70–90	50–70	30–60	80–100	-

16650 - 16651 Solid carbide roughing cutter Quickmax

VHM TiAlN | HSC | Z 3–6 | HR | 50 HRC | VA | Uni

Design
Short, 3-6 cutting edges, centre cutting. Right-hand twist 45°. High chipping performance. With protective chamfer, special roughing profile. Long service life. Quick chip removal. Extremely stable cutting edges. Great stability.
Applications
Alloyed steels, stainless steel, titanium, Inconel.

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16650
With smooth straight shank in accordance with DIN 6535 HA.

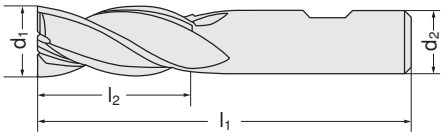
16651
With clamping surface in accordance with DIN 6535 HB.

DIN 6535 HA

16650

DIN 6535 HB

16651



d_1 mm	l_2 mm	l_1 mm	d_2 mm	Z	DIN 6535 HA 16650	...	DIN 6535 HB 16651	...
4.0	11	57	6	3		101		101
6.0	16	57	6	4		102		102
8.0	16	63	8	4		103		103
10.0	22	72	10	4		104		104
12.0	26	83	12	4		105		105
16.0	32	92	16	5		106		106
20.0	38	104	20	6		107		107
25.0	45	121	25	6		108		108

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	140–160	100–140	90–120	90	80	60	60	50	-	-	100	90	70	80	-

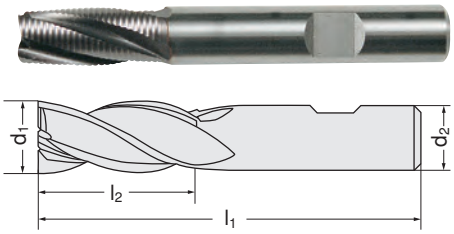
16629 Solid carbide roughing cutter

VHM TiAlN | HSC | Z 3–4 | DIN 6535 HB | HR | 60 HRC | Uni

Design
Long, relief ground, fine cord profile, right cutting with **centre cutting. 3–4 cutting edges.** With clamping surface in accordance with DIN 6535 HB.

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16629



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	Z	16629	...
6.0	16	57	6	3		101
8.0	16	63	8	3		103
10.0	22	72	10	4		105
12.0	26	83	12	4		106
14.0	26	83	14	4		107
16.0	32	92	16	4		108
20.0	38	104	20	4		110

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400	300	250	300	250	200	180	160	140	80	60	40	-	120	100	60	180	-

Info — Hard milling

Hard machining is the machining of hardened materials with a hardness of 52 to 65 HRC. Hard milling offers decisive advantages thanks to time and money savings. Special HSC milling strategies, high surface quality as well as doing away with the hardening distortion make this process interesting to an even wider market. Furthermore, work processes such as multiple clamping and time-consuming polishing are also removed, resulting in enormous savings **– a cost benefit for your production!**

We have compiled the **ATORN range** for all of these processing and use cases. This range, which meets your every need in terms of assortment breadth and depth as well as cutting material and geometry, is designed for extremely high requirements.

The **ATORN hard milling tools** offer you the best conditions for efficient hard machining. The different geometries are optimally matched to the different milling operations. The cemented carbide used has a high level of hardness and is extremely tough.

Thanks to the special edge treatment as well as the new coatings **RockTec 52** and **RockTec 65**, the **ATORN tools have an extremely long service life.**

RockTec 52

Universal use:	Up to 52 HRC
Tolerance radius correction:	+/- 0.01 mm
Coating type:	Monolayer
Micro hardness:	3300 HV
Max. application temperature:	< 900 °C
For wet and dry milling	

RockTec 65

For HPC and HSC milling:	Up to 65 HRC
Tolerance radius correction:	+/- 0.01 mm
Type of coating:	New multi-layer
Micro hardness:	3600 HV
Max. application temperature:	< 1200 °C
Longest possible service life when dry milling	

The complete range for the most demanding applications

16800 — Solid carbide mini end mills

ATORN®

Design
- **Short**
- Right cutting
- 2 cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

16800 101-109

16800 301-309

				RockTec 52		RockTec 65	
d_1 mm	l_2 mm	l_1 mm	d_2 (h6) mm	16800	...	16800	...
0.1	0.2	40	4		101		301
0.2	0.4	40	4		102		302
0.3	0.6	40	4		103		303
0.4	0.8	40	4		104		304
0.5	1.0	40	4		105		305
0.6	1.2	40	4		106		306
0.7	1.4	40	4		107		307
0.8	1.6	40	4		108		308
0.9	1.8	40	4		109		309

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	60–90	60–90	60–90	60–90	60–90	30–60	30–60	30–60	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	60-90	60-90	50-80	45-60	40-55	-	-	-	-	-

16801 Solid carbide mini end mills

VHM RockTec | Z 2 | ≈ 40° | DIN 6535 HA

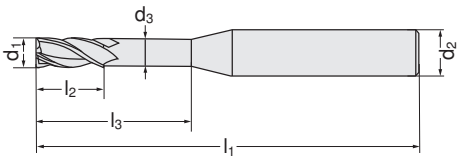
ATORN®

Design
- **Long**
- Right cutting

- 2 cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

≤ 1600 N/mm² | 52 HRC — 16801 101-154

65 HRC — 16801 301-354



						RockTec 52		RockTec 65	
d_1 mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	16801	...	16801	...
0.2	0.3	0.5	50	0.16	4		101		301
0.2	0.3	1.0	50	0.16	4		102		302
0.2	0.3	1.5	50	0.16	4		103		303
0.3	0.4	1.0	50	0.26	4		104		304
0.3	0.4	2.0	50	0.26	4		105		305
0.3	0.4	3.0	50	0.26	4		106		306
0.4	0.6	2.0	50	0.37	4		107		307
0.4	0.6	3.0	50	0.37	4		108		308
0.4	0.6	4.0	50	0.37	4		109		309
0.4	0.6	5.0	50	0.37	4		110		310
0.5	0.7	2.0	50	0.45	4		111		311
0.5	0.7	4.0	50	0.45	4		112		312
0.5	0.7	6.0	50	0.45	4		113		313
0.5	0.7	8.0	50	0.45	4		114		314
0.6	0.9	2.0	50	0.55	4		115		315
0.6	0.9	4.0	50	0.55	4		116		316
0.6	0.9	6.0	50	0.55	4		117		317
0.6	0.9	8.0	50	0.55	4		118		318
0.6	0.9	10.0	50	0.55	4		119		319
0.8	1.2	4.0	50	0.75	4		120		320
0.8	1.2	6.0	50	0.75	4		121		321
0.8	1.2	8.0	50	0.75	4		122		322
0.8	1.2	10.0	50	0.75	4		123		323
0.8	1.2	12.0	50	0.75	4		124		324
1.0	1.5	6.0	50	0.95	4		125		325
1.0	1.5	8.0	50	0.95	4		126		326
1.0	1.5	10.0	50	0.95	4		127		327
1.0	1.5	12.0	50	0.95	4		128		328
1.0	1.5	14.0	50	0.95	4		129		329
1.0	1.5	16.0	50	0.95	4		130		330
1.2	1.8	6.0	50	1.15	4		131		331
1.2	1.8	10.0	50	1.15	4		132		332
1.5	2.3	8.0	50	1.45	4		133		333
1.5	2.3	12.0	50	1.45	4		134		334
1.5	2.3	16.0	50	1.45	4		135		335
1.5	2.3	20.0	60	1.45	4		136		336
2.0	3.0	6.0	50	1.95	4		137		337
2.0	3.0	8.0	50	1.95	4		138		338
2.0	3.0	12.0	50	1.95	4		139		339
2.0	3.0	16.0	50	1.95	4		140		340
2.0	3.0	20.0	60	1.95	4		141		341
2.0	3.0	25.0	75	1.95	4		142		342
2.5	3.7	8.0	50	2.40	4		143		343
2.5	3.7	10.0	50	2.40	4		144		344
2.5	3.7	12.0	50	2.40	4		145		345
2.5	3.7	16.0	50	2.40	4		146		346
2.5	3.7	20.0	60	2.40	4		147		347
2.5	3.7	25.0	75	2.40	4		148		348
3.0	4.5	8.0	50	2.85	6		149		349
3.0	4.5	10.0	50	2.85	6		150		350
3.0	4.5	12.0	50	2.85	6		151		351
3.0	4.5	16.0	60	2.85	6		152		352
3.0	4.5	20.0	60	2.85	6		153		353
3.0	4.5	25.0	75	2.85	6		154		354

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	60–90	60–90	60–90	60–90	60–90	30–60	30–60	30–60	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	60-90	60-90	50-80	45-60	40-55	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16802 Solid carbide mini torus milling cutter

ATORN®

Design
- **Long**
- **With corner radius**
- Right cutting

- 2 cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

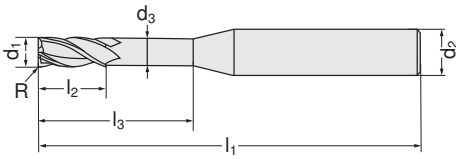
VHM RockTec | Z 2 | ≈ 40° | DIN 6535 HA

≤ 1600 N/mm² | 52 HRC

16802 101-154

65 HRC

16802 301-354



							RockTec 52		RockTec 65	
d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	16802	...	16802	...
0.2	0.02	0.3	0.5	50	0.16	4		101		301
0.2	0.02	0.3	1.0	50	0.16	4		102		302
0.2	0.02	0.3	1.5	50	0.16	4		103		303
0.3	0.03	0.4	1.0	50	0.26	4		104		304
0.3	0.03	0.4	2.0	50	0.26	4		105		305
0.3	0.03	0.4	3.0	50	0.26	4		106		306
0.4	0.03	0.6	2.0	50	0.37	4		107		307
0.4	0.03	0.6	3.0	50	0.37	4		108		308
0.4	0.03	0.6	4.0	50	0.37	4		109		309
0.4	0.03	0.6	5.0	50	0.37	4		110		310
0.5	0.05	0.7	2.0	50	0.45	4		111		311
0.5	0.05	0.7	4.0	50	0.45	4		112		312
0.5	0.05	0.7	6.0	50	0.45	4		113		313
0.5	0.05	0.7	8.0	50	0.45	4		114		314
0.6	0.05	0.9	2.0	50	0.55	4		115		315
0.6	0.05	0.9	4.0	50	0.55	4		116		316
0.6	0.05	0.9	6.0	50	0.55	4		117		317
0.6	0.05	0.9	8.0	50	0.55	4		118		318
0.6	0.05	0.9	10.0	50	0.55	4		119		319
0.8	0.08	1.2	4.0	50	0.75	4		120		320
0.8	0.08	1.2	6.0	50	0.75	4		121		321
0.8	0.08	1.2	8.0	50	0.75	4		122		322
0.8	0.08	1.2	10.0	50	0.75	4		123		323
0.8	0.08	1.2	12.0	50	0.75	4		124		324
1.0	0.10	1.5	6.0	50	0.95	4		125		325
1.0	0.10	1.5	8.0	50	0.95	4		126		326
1.0	0.10	1.5	10.0	50	0.95	4		127		327
1.0	0.10	1.5	12.0	50	0.95	4		128		328
1.0	0.10	1.5	14.0	50	0.95	4		129		329
1.0	0.10	1.5	16.0	50	0.95	4		130		330
1.2	0.10	1.8	6.0	50	1.15	4		131		331
1.2	0.10	1.8	10.0	50	1.15	4		132		332
1.5	0.15	2.3	8.0	50	1.45	4		133		333
1.5	0.15	2.3	12.0	50	1.45	4		134		334
1.5	0.15	2.3	16.0	50	1.45	4		135		335
1.5	0.15	2.3	20.0	60	1.45	4		136		336
2.0	0.20	3.0	6.0	50	1.95	4		137		337
2.0	0.20	3.0	8.0	50	1.95	4		138		338
2.0	0.20	3.0	12.0	50	1.95	4		139		339
2.0	0.20	3.0	16.0	50	1.95	4		140		340
2.0	0.20	3.0	20.0	60	1.95	4		141		341
2.0	0.20	3.0	25.0	75	1.95	4		142		342
2.5	0.30	3.7	8.0	50	2.40	4		143		343
2.5	0.30	3.7	10.0	50	2.40	4		144		344
2.5	0.30	3.7	12.0	50	2.40	4		145		345
2.5	0.30	3.7	16.0	50	2.40	4		146		346
2.5	0.30	3.7	20.0	60	2.40	4		147		347
2.5	0.30	3.7	25.0	75	2.40	4		148		348
3.0	0.30	4.5	8.0	50	2.85	6		149		349
3.0	0.30	4.5	10.0	50	2.85	6		150		350
3.0	0.30	4.5	12.0	50	2.85	6		151		351
3.0	0.30	4.5	16.0	60	2.85	6		152		352
3.0	0.30	4.5	20.0	60	2.85	6		153		353
3.0	0.30	4.5	25.0	75	2.85	6		154		354

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	60–90	60–90	60–90	60–90	60–90	30–60	30–60	30–60	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	60-90	60-90	50-80	45-60	40-55	-	-	-	-	-

( ) = Items with prices in brackets partly available from stock.

16805 Solid carbide mini radius cutters

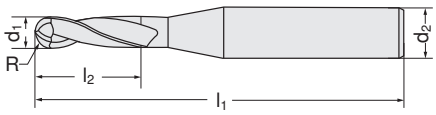
VHM RockTec | Z 2 | ≈ 30° | DIN 6535 HA

ATORN®

Design
- **Short**
- Right cutting
- 2 cutting edges
- Right-hand twist 30°
- With smooth straight shank in accordance with DIN 6535 HA

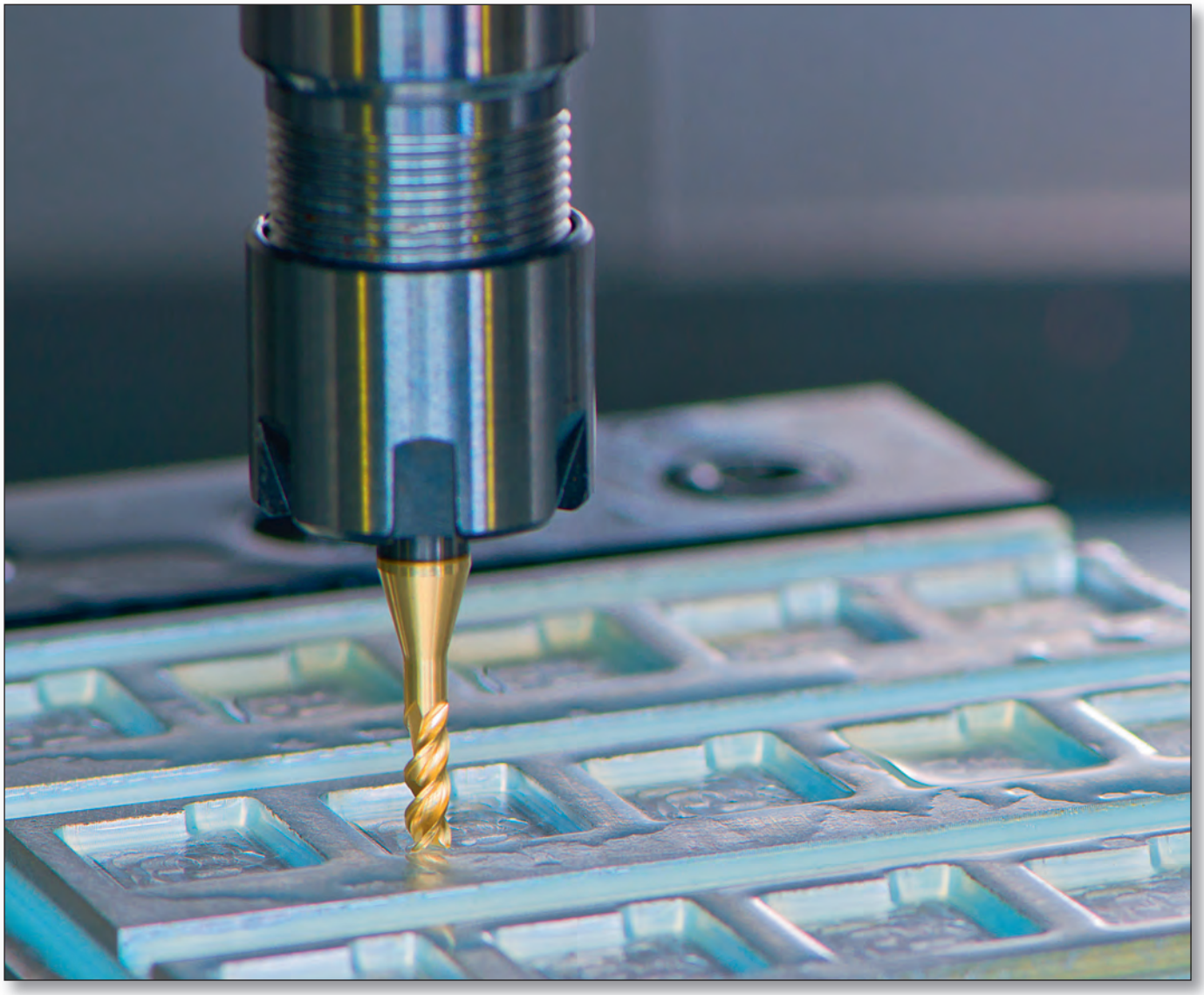
≤ 1600 N/mm² | 52 HRC — **16805 101-108**

65 HRC — **16805 301-308**



d_1 mm	R mm	l_2 mm	l_1 mm	d_2 (h6) mm	RockTec 52 16805 ...	RockTec 65 16805 ...
0.2	0.10	0.4	40	4	101	301
0.3	0.15	0.6	40	4	102	302
0.4	0.20	0.8	40	4	103	303
0.5	0.25	1.2	40	4	104	304
0.6	0.30	1.4	40	4	105	305
0.7	0.35	1.6	40	4	106	306
0.8	0.40	1.8	40	4	107	307
0.9	0.45	2.0	40	4	108	308

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	60–90	60–90	60–90	60–90	60–90	30–60	30–60	30–60	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	60-90	60-90	50-80	45-60	40-55	-	-	-	-	-



= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16806 Solid carbide mini radius cutters

ATORN®

Design
- **Long**
- Right cutting

- 2 cutting edges
- Right-hand twist 30°
- With smooth straight shank in accordance with DIN 6535 HA

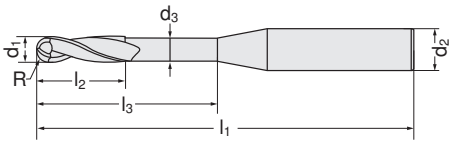
VHM RockTec | Z 2 | ≈ 30° | DIN 6535 HA

< 1600 N/mm² | 52 HRC

16806 101-153

65 HRC

16806 301-353



							RockTec 52		RockTec 65	
d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	16806	...	16806	...
0.2	0.10	0.2	0.5	50	0.15	4		101		301
0.2	0.10	0.2	1.0	50	0.15	4		102		302
0.2	0.10	0.2	1.5	50	0.15	4		103		303
0.3	0.15	0.3	1.0	50	0.25	4		104		304
0.3	0.15	0.3	2.0	50	0.25	4		105		305
0.3	0.15	0.3	3.0	50	0.25	4		106		306
0.4	0.20	0.4	1.0	50	0.35	4		107		307
0.4	0.20	0.4	2.0	50	0.35	4		108		308
0.4	0.20	0.4	3.0	50	0.35	4		109		309
0.4	0.20	0.4	4.0	50	0.35	4		110		310
0.4	0.20	0.4	5.0	50	0.35	4		111		311
0.5	0.25	0.4	2.0	50	0.45	4		112		312
0.5	0.25	0.4	3.0	50	0.45	4		113		313
0.5	0.25	0.4	4.0	50	0.45	4		114		314
0.5	0.25	0.4	5.0	50	0.45	4		115		315
0.5	0.25	0.4	6.0	50	0.45	4		116		316
0.5	0.25	0.4	8.0	50	0.45	4		117		317
0.6	0.30	0.5	2.0	50	0.55	4		118		318
0.6	0.30	0.5	3.0	50	0.55	4		119		319
0.6	0.30	0.5	4.0	50	0.55	4		120		320
0.6	0.30	0.5	5.0	50	0.55	4		121		321
0.6	0.30	0.5	6.0	50	0.55	4		122		322
0.6	0.30	0.5	8.0	50	0.55	4		123		323
0.8	0.40	0.6	2.0	50	0.75	4		124		324
0.8	0.40	0.6	4.0	50	0.75	4		125		325
0.8	0.40	0.6	5.0	50	0.75	4		126		326
0.8	0.40	0.6	6.0	50	0.75	4		127		327
0.8	0.40	0.6	7.0	50	0.75	4		128		328
0.8	0.40	0.6	8.0	50	0.75	4		129		329
0.8	0.40	0.6	10.0	50	0.75	4		130		330
1.0	0.50	0.8	3.0	50	0.95	4		131		331
1.0	0.50	0.8	6.0	50	0.95	4		132		332
1.0	0.50	0.8	8.0	50	0.95	4		133		333
1.0	0.50	0.8	10.0	50	0.95	4		134		334
1.0	0.50	0.8	16.0	50	0.95	4		135		335
1.0	0.50	0.8	20.0	60	0.95	4		136		336
1.2	0.60	1.0	6.0	50	1.15	4		137		337
1.2	0.60	1.0	10.0	50	1.15	4		138		338
1.5	0.75	1.2	8.0	50	1.45	4		139		339
1.5	0.75	1.2	12.0	50	1.45	4		140		340
1.5	0.75	1.2	16.0	50	1.45	4		141		341
1.5	0.75	1.2	18.0	60	1.45	4		142		342
2.0	1.00	1.6	4.0	50	1.95	4		143		343
2.0	1.00	1.6	8.0	50	1.95	4		144		344
2.0	1.00	1.6	12.0	50	1.95	4		145		345
2.0	1.00	1.6	16.0	50	1.95	4		146		346
2.0	1.00	1.6	20.0	60	1.95	4		147		347
2.0	1.00	1.6	25.0	75	1.95	4		148		348
3.0	1.50	2.4	8.0	50	2.85	6		149		349
3.0	1.50	2.4	10.0	50	2.85	6		150		350
3.0	1.50	2.4	16.0	60	2.85	6		151		351
3.0	1.50	2.4	20.0	60	2.85	6		152		352
3.0	1.50	2.4	25.0	75	2.85	6		153		353

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	60-100	60-100	60-100	60-100	60-100	30-70	30-70	30-70	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	60-100	60-100	50-90	45-70	40-65	-	-	-	-	-

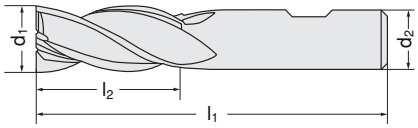
( ) = Items with prices in brackets partly available from stock.

16601 Solid carbide end mill

VHM TiAlN | HSC | Z 2 | ≈ 30° | DIN 6535 HB | 60 HRC

Design
- **Short**
- Right cutting
- **2 cutting edges**
- Right-hand twist
- **Centre cutting**
- With clamping surface in accordance with DIN 6535 HB

16601



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16601 ...
3.0	8	45	6	**101**
4.0	11	45	6	**103**
5.0	13	50	6	**105**
6.0	13	50	6	**107**
8.0	19	60	8	**111**

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16601 ...
10.0	22	70	10	**115**
12.0	26	75	12	**119**
16.0	32	100	16	**121**
20.0	38	105	20	**123**
25.0	45	120	25	**124**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	150–190	140–170	130–160	100–120	90–110	60–90	55–65	50–55	40–55	-	-	-	-	-	-

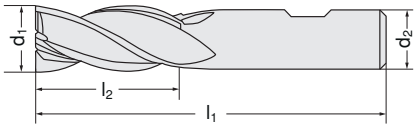
16604 Solid carbide end mill

VHM TiAlN | HSC | Z 2 | ≈ 30° | DIN 6535 HB | 60 HRC

Design
- **Long**
- Right cutting
- **2 cutting edges**
- Right-hand twist
- **Centre cutting**

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16604



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16604 ...
3.0	12	50	6	**101**
4.0	15	50	6	**102**
5.0	20	60	6	**103**
6.0	20	60	6	**104**
8.0	25	70	8	**105**

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16604 ...
10.0	30	90	10	**106**
12.0	30	90	12	**107**
16.0	50	110	16	**108**
20.0	55	110	20	**109**
25.0	75	140	25	**110**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	150–190	140–170	130–160	100–120	90–110	60–90	55–65	50–55	40–55	-	-	-	-	-	-

16810 Solid carbide end mill

VHM RockTec | Z 4 | ≈ 40° | DIN 6535 HA | ≤ 1600 N/mm² | 52 HRC | 65 HRC

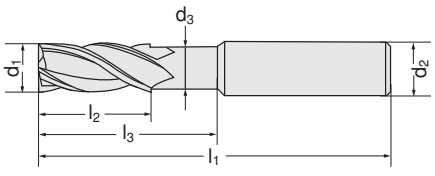
ATORN®

Design
- **Short**
- With clearance
- Right cutting
- 4 cutting edges

- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

16810 101-109

16810 301-309



d_1 (e8) mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16810 ...	RockTec 65 16810 ...
3.0	9	15	50	2.8	6	**101**	**301**
4.0	12	20	50	3.7	6	**102**	**302**
5.0	15	20	50	4.6	6	**103**	**303**
6.0	16	20	50	5.5	6	**104**	**304**
8.0	20	30	64	7.4	8	**105**	**305**
10.0	22	32	70	9.2	10	**106**	**306**
12.0	25	37	75	11.0	12	**107**	**307**
16.0	32	46	90	15.0	16	**108**	**308**
20.0	38	58	100	19.0	20	**109**	**309**

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	140–160	140–160	140–160	130–150	120–140	100–130	60–80	60–80	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	160–200	120–140	100–130	90–100	80–90	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

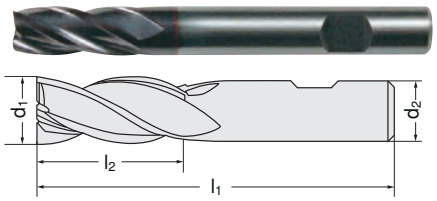
16609 Solid carbide end mill

VHM TiAlN | HSC | Z 4 | ≈ 30° | DIN 6535 HB | 60 HRC

Design
- **Short**
- Right cutting
- **4 cutting edges**
- Right-hand twist
- **Centre cutting**
- With clamping surface in accordance with DIN 6535 HB

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16609



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16609 ...
3.0	8	45	6	**103**
3.5	10	45	6	**104**
4.0	11	45	6	**105**
4.5	11	45	6	**106**
5.0	13	50	6	**107**
5.5	13	50	6	**108**
6.0	13	50	6	**109**
8.0	19	60	8	**113**

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16609 ...
9.0	19	70	10	**115**
10.0	22	70	10	**117**
12.0	26	75	12	**121**
14.0	26	85	14	**122**
16.0	32	100	16	**123**
20.0	38	105	20	**125**
25.0	45	120	25	**126**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400	300	250	300	250	200	180	160	140	80	60	40	-	120	100	60	180	-

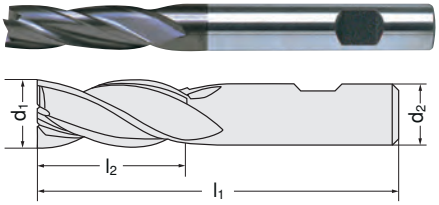
16613 Solid carbide end mill

VHM TiAlN | HSC | Z 4 | ≈ 30° | DIN 6535 HB | 60 HRC

Design
- **Long**
- **Centre cutting**

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16613



d_1 mm	l_2 mm	l_1 mm	d_2 mm	16613 ...
3.0	12	50	6	**201**
4.0	15	50	6	**202**
5.0	20	60	6	**203**
6.0	20	60	6	**204**
8.0	25	70	8	**205**

d_1 mm	l_2 mm	l_1 mm	d_2 mm	16613 ...
10.0	30	90	10	**206**
12.0	30	90	12	**207**
16.0	50	110	16	**208**
20.0	55	110	20	**209**
25.0	75	140	25	**210**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	300	250	200	180	160	140	80	60	40	-	-	-	-	-	-

16812 Solid carbide end mill

VHM RockTec | Z 4 | ≈ 40° | DIN 6535 HA | < 1600 N/mm² | 52 HRC

ATORN®

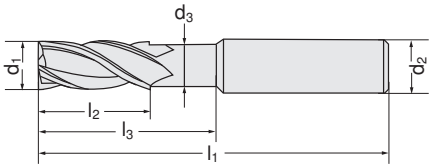
Design
- **Long**
- With clearance
- Right cutting
- 4 short cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

16812 101-109

65 HRC

16812 301-309

d_1 (e8) mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16812 ...	RockTec 65 16812 ...
3.0	5	30	75	2.8	6	101	301
4.0	8	32	75	3.7	6	102	302
5.0	9	32	75	4.6	6	103	303
6.0	10	40	75	5.5	6	104	304
8.0	12	40	75	7.4	8	105	305
10.0	14	60	100	9.2	10	106	306
12.0	16	60	100	11.0	12	107	307
16.0	22	85	125	15.0	16	108	308
20.0	26	85	125	19.0	20	109	309



Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	120–140	120–140	120–140	110–130	100–120	80–100	50–70	50–70	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	140-160	100-130	90-100	80-90	70-80	-	-	-	-	-

16619 Solid carbide end mill

VHM TiAlN | HSC | Z 6 | ≈ 45° | DIN 6535 HB | 60 HRC

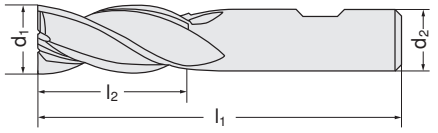
HW

Design
Extra long, right cutting, **6 cutting edges.** Right-hand twist, approx. 45°. With clamping surface in accordance with DIN 6535 HB.

Applications
For circumferential milling as a finishing operation to achieve optimum surface quality (face cut only with low cutting depths).

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16619



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16619 ...
6.0	26	70	6	201
8.0	36	90	8	202
10.0	46	100	10	203
12.0	56	110	12	204

d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16619 ...
16.0	66	130	16	205
20.0	76	140	20	206
25.0	92	180	25	207

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	300	250	200	180	160	140	80	60	40	-	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16813 Solid carbide end mill

VHM RockTec | Z 4 | ≈ 40° | DIN 6535 HA

≤ 1600 N/mm² | 52 HRC

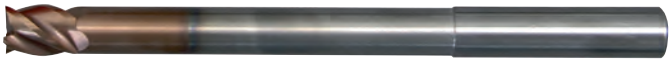
ATORN®

Design
- **Extra long**
- With clearance
- Right cutting
- 4 short cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

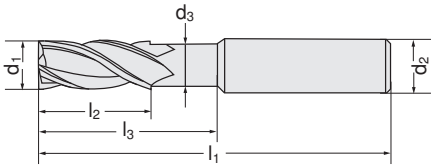
16813 101-109

65 HRC

16813 301-309

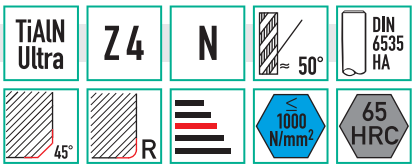


						RockTec 52		RockTec 65	
d_1 (e8) mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	16813	...	16813	...
3.0	5	60	100	2.8	6		101		301
4.0	8	60	100	3.7	6		102		302
5.0	9	60	100	4.6	6		103		303
6.0	10	60	100	5.5	6		104		304
8.0	12	60	100	7.4	8		105		305
10.0	14	85	125	9.2	10		106		306
12.0	16	110	150	11.0	12		107		307
16.0	22	110	150	15.0	16		108		308
20.0	26	110	150	19.0	20		109		309



Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	100-120	100-120	90-110	90-110	80-100	60-80	60-80	40-60	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	120-140	80-110	70-80	60-70	50-50	-	-	-	-	-

16626 Solid carbide end mill



ATORN®

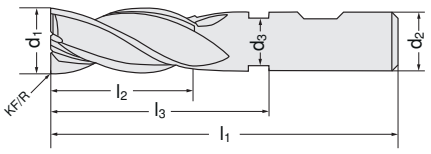
Design
- With clearance and edge protection chamfer/ edge radius
- With centre cutting
- 4 cutting edges
- Right-hand twist 50°

Applications
Universal application for finishing.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

Note:
Extra-long design without clearance.

16626



									RockTec 65	
d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 mm	KF mm	R mm	Z	16626	...
4.0	11	18	57	3.9	6	0.1	-	4		040
4.0	16	-	62	-	6	0.1	-	4		041
4.0	11	18	57	3.9	6	-	0.5	4		042
4.0	16	-	62	-	6	-	0.5	4		043
5.0	13	19	57	4.9	6	0.1	-	4		050
5.0	17	-	62	-	6	0.1	-	4		051
5.0	13	19	57	4.9	6	-	0.5	4		052
5.0	17	-	62	-	6	-	0.5	4		053
6.0	13	19	57	5.9	6	0.1	-	4		060
6.0	18	-	62	-	6	0.1	-	4		061
6.0	13	19	57	5.9	6	-	0.5	4		062
6.0	18	-	62	-	6	-	0.5	4		063
8.0	19	25	63	7.7	8	0.1	-	4		080
8.0	24	-	68	-	8	0.1	-	4		081
8.0	19	25	63	7.7	8	-	1.0	4		082
8.0	24	-	68	-	8	-	1.0	4		083
10.0	22	30	72	-	10	0.1	-	4		100
10.0	30	-	80	9.7	10	0.1	-	4		101
10.0	30	-	80	-	10	-	1.0	4		102
12.0	26	36	83	11.7	12	0.1	-	4		103
12.0	36	-	93	-	12	0.1	-	4		120
12.0	36	-	93	-	12	-	1.5	4		121
16.0	32	42	92	15.5	16	0.1	-	4		160
16.0	48	-	108	-	16	0.1	-	4		161
20.0	38	52	104	19.5	20	0.1	-	4		200
20.0	60	-	126	-	20	0.1	-	4		201
20.0	60	-	126	-	20	-	2.0	4		202

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	50–70	40–60	30–35	30–35	30–35	30–35	30–35	-	-	-	-	-

VHM RockTec | Z 4 | ≈ 40° | DIN 6535 HA | R

ATORN®

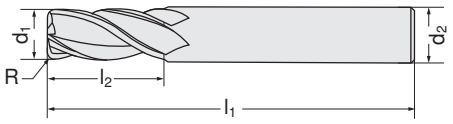
Design
- **Short**
- Right cutting
- 4 cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

≤ 1600 N/mm² | 52 HRC

16816 101-128

65 HRC

16816 301-328



d_1 (e8) mm	R mm	l_2 mm	l_1 mm	d_2 (h6) mm	RockTec 52 16816 ...	RockTec 65 16816 ...
3.0	0.3	9	50	6	101	301
3.0	0.5	9	50	6	102	302
4.0	0.3	12	50	6	103	303
4.0	0.5	12	50	6	104	304
4.0	1.0	12	50	6	105	305
5.0	0.3	15	50	6	127	327
5.0	0.5	15	50	6	106	306
5.0	1.0	15	50	6	107	307
6.0	0.3	20	60	6	108	308
6.0	0.5	20	60	6	109	309
6.0	1.0	20	60	6	110	310
8.0	0.5	20	64	8	111	311
8.0	1.0	20	64	8	112	312
8.0	1.5	20	64	8	113	313
8.0	2.0	20	64	8	126	326
10.0	0.5	22	75	10	114	314
10.0	1.0	22	75	10	128	328
10.0	1.5	22	75	10	115	315
10.0	2.0	22	75	10	116	316
12.0	1.0	25	75	12	117	317
12.0	2.0	25	75	12	118	318
12.0	3.0	25	75	12	119	319
16.0	1.0	32	90	16	120	320
16.0	2.0	32	90	16	121	321
16.0	3.0	32	90	16	122	322
20.0	1.0	38	100	20	123	323
20.0	2.0	38	100	20	124	324
20.0	3.0	38	100	20	125	325

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	140–160	140–160	130–150	130–150	120–140	100–120	80–100	60–80	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	160–200	120–140	100-120	90–100	80–90	-	-	-	-	-

16817 Solid carbide torus milling cutters

VHM RockTec | Z 4 | ≈ 45° | DIN 6535 HA | R

ATORN®

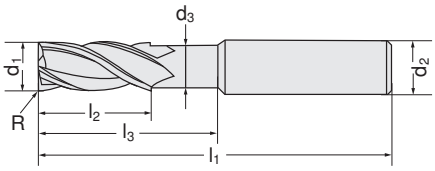
Design
- **Short**
- With clearance
- Right cutting
- 4 short cutting edges
- Right-hand twist 45°
- With smooth straight shank in accordance with DIN 6535 HA

≤ 1600 N/mm² | 52 HRC

16817 101-116

65 HRC

16817 301-316



d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16817 ...	RockTec 65 16817 ...
3.0	0.3	4	14	60	2.8	6	101	301
3.0	0.5	4	14	60	2.8	6	102	302
4.0	0.3	5	16	60	3.7	6	103	303
4.0	0.5	5	16	60	3.7	6	104	304
5.0	0.3	6	18	60	4.6	6	105	305
5.0	0.5	6	18	60	4.6	6	106	306
6.0	0.5	7	20	60	5.5	6	107	307
6.0	1.0	7	20	60	5.5	6	108	308
8.0	0.5	9	26	64	7.4	8	109	309
8.0	1.0	9	26	64	7.4	8	110	310
10.0	1.0	11	31	70	9.2	10	111	311
10.0	2.0	11	31	70	9.2	10	112	312
12.0	1.0	13	37	75	11.0	12	113	313
12.0	2.0	13	37	75	11.0	12	114	314
16.0	1.0	17	43	90	15.0	16	115	315
16.0	2.0	17	43	90	15.0	16	116	316

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	140–160	140–160	130–150	130–150	120–140	100–120	80–100	60–80	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	160–200	120–140	100-120	90–100	80–90	-	-	-	-	-

16637 Solid carbide torus milling cutters

VHM TiAlN | HSC | Z 4 | DIN 6535 HB | 65 HRC

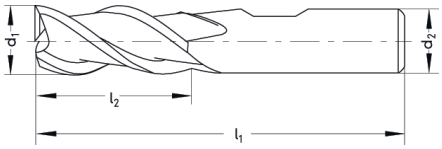
HW

Design
- **Long**
- With clamping surface in accordance with DIN 6535 HB
- Right cutting
- **4 cutting edges**
- **With corner radius (1)**

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16637

(1)



d_1 e8 mm	l_2 mm	l_1 mm	d_2 mm	16637 ...
6 x R 0.5	20	60	6	101
6 x R 1	20	60	6	102
8 x R 0.5	25	70	8	103
8 x R 1	25	70	8	104
8 x R 2	25	70	8	106
10 x R 0.5	30	90	10	107

d_1 e8 mm	l_2 mm	l_1 mm	d_2 mm	16637 ...
10 x R 1	30	90	10	108
10 x R 2	30	90	10	110
12 x R 0.5	30	90	12	111
12 x R 1	30	90	12	112
12 x R 2	30	90	12	114

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400	300	250	300	250	200	180	160	140	80	60	40	-	120	100	60	180	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16818 Solid carbide torus milling cutters

VHM RockTec | Z 4 | ≈ 40° | DIN 6535 HA | R

ATORN®

Design
- **Long**
- With clearance
- Right cutting
- 4 short cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

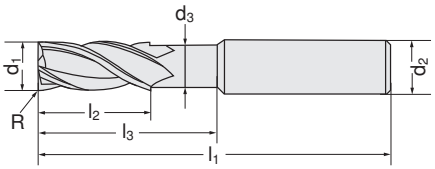
≤ 1600 N/mm² | 52 HRC

16818 101-116

65 HRC

16818 301-316

d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16818	...	RockTec 65 16818	...
3.0	0.3	5	30	75	2.8	6		101		301
3.0	0.5	5	30	75	2.8	6		102		302
4.0	0.3	8	32	75	3.7	6		103		303
4.0	0.5	8	32	75	3.7	6		104		304
5.0	0.3	9	32	75	4.6	6		105		305
5.0	0.5	9	32	75	4.6	6		106		306
6.0	0.5	10	40	75	5.5	6		107		307
6.0	1.0	10	40	75	5.5	6		108		308
8.0	0.5	12	40	75	7.4	8		109		309
8.0	1.0	12	40	75	7.4	8		110		310
10.0	1.0	14	60	100	9.2	10		111		311
10.0	2.0	14	60	100	9.2	10		112		312
12.0	1.0	16	60	100	11.0	12		113		313
12.0	2.0	16	60	100	11.0	12		114		314
16.0	1.0	22	85	125	15.0	16		115		315
16.0	2.0	22	85	125	15.0	16		116		316



	Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52	-	-	-	120-140	120-140	110-130	110-130	100-120	80-100	70-90	50-70	-	-	-	-	-	-	-
Rocktec 65	-	-	-	-	-	-	-	-	140–160	100–130	90–100	80–90	70.80	-	-	-	-	-

16819 Solid carbide torus milling cutters

VHM RockTec | Z 4 | ≈ 40° | DIN 6535 HA | R

ATORN®

Design
- **Extra long**
- With clearance
- Right cutting
- 4 short cutting edges
- Right-hand twist 40°
- With smooth straight shank in accordance with DIN 6535 HA

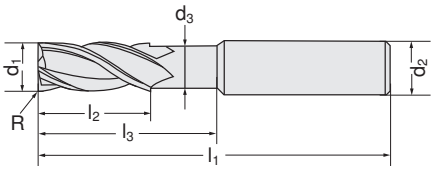
≤ 1600 N/mm² | 52 HRC

16819 101-116

65 HRC

16819 301-316

d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16819	...	RockTec 65 16819	...
3.0	0.3	5	60	100	2.8	6		101		301
3.0	0.5	5	60	100	2.8	6		102		302
4.0	0.3	8	60	100	3.7	6		103		303
4.0	0.5	8	60	100	3.7	6		104		304
5.0	0.3	9	60	100	4.6	6		105		305
5.0	0.5	9	60	100	4.6	6		106		306
6.0	0.5	10	60	100	5.5	6		107		307
6.0	1.0	10	60	100	5.5	6		108		308
8.0	0.5	12	60	100	7.4	8		109		309
8.0	1.0	12	60	100	7.4	8		110		310
10.0	1.0	14	85	125	9.2	10		111		311
10.0	2.0	14	85	125	9.2	10		112		312
12.0	1.0	16	110	150	11.0	12		113		313
12.0	2.0	16	110	150	11.0	12		114		314
16.0	1.0	22	110	150	15.0	16		115		315
16.0	2.0	22	110	150	15.0	16		116		316



	Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52	-	-	-	100-120	100-120	90-110	90-110	80-100	70-80	60-70	40-60	-	-	-	-	-	-	-
Rocktec 65	-	-	-	-	-	-	-	-	120-140	80-110	70-80	60-70	50-60	-	-	-	-	-

16824 Solid carbide multi-tooth mills

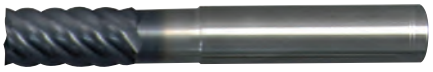
VHM RockTec | Z 6–8 | ≈ 50° | DIN 6535 HA

ATORN®

Design
- **Short**
- With clearance
- Right cutting
- 6–8 cutting edges
- Right-hand twist 50°
- With smooth straight shank in accordance with DIN 6535 HA

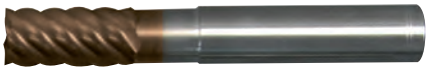
≤ 1600 N/mm² | 52 HRC

16824 101-109

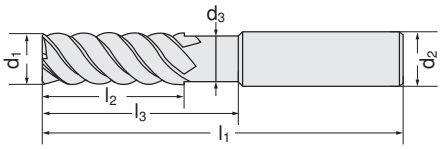


65 HRC

16824 301-309



d_1 (e8) mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	Z	RockTec 52 16824 ...	RockTec 65 16824 ...
3.0	8	20	50	2.8	6	6	**101**	**301**
4.0	11	20	50	3.7	6	6	**102**	**302**
5.0	13	20	50	4.6	6	6	**103**	**303**
6.0	15	20	50	5.5	6	6	**104**	**304**
8.0	20	30	64	7.4	8	6	**105**	**305**
10.0	22	32	70	9.2	10	6	**106**	**306**
12.0	25	37	75	11.0	12	6	**107**	**307**
16.0	30	46	90	15.0	16	8	**108**	**308**
20.0	38	58	100	19.0	20	8	**109**	**309**



Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	140–160	140–160	130–150	130–150	120–140	100–120	80–100	60–80	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	160–200	120–140	100-120	80–100	80–90	-	-	-	-	-

16825 Solid carbide multi-tooth mills

VHM RockTec | Z 6–8 | ≈ 50° | DIN 6535 HA

ATORN®

Design
- **Long**
- With clearance
- Right cutting
- 6–8 cutting edges
- Right-hand twist 50°
- With smooth straight shank in accordance with DIN 6535 HA

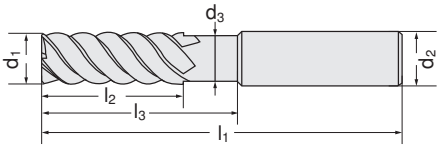
≤ 1600 N/mm² | 52 HRC

16825 101-109

65 HRC

16825 301-309

d_1 (e8) mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	Z	RockTec 52 16825 ...	RockTec 65 16825 ...
3.0	19	30	75	2.8	6	6	**101**	**301**
4.0	19	32	75	3.7	6	6	**102**	**302**
5.0	19	32	75	4.6	6	6	**103**	**303**
6.0	31	40	75	5.5	6	6	**104**	**304**
8.0	31	40	75	7.4	8	6	**105**	**305**
10.0	45	60	100	9.2	10	6	**106**	**306**
12.0	50	60	100	11.0	12	6	**107**	**307**
16.0	57	85	125	15.0	16	8	**108**	**308**
20.0	57	85	125	19.0	20	8	**109**	**309**



Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	120-140	120-140	110-130	110-130	100-120	80-100	70-80	50-70	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	140-160	100-130	90-100	80-90	70-80	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16827 Solid carbide radius cutter

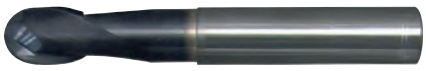
VHM RockTec | Z 2 | ≈ 30° | DIN 6535 HA

ATORN®

Design
- **Short**
- With clearance
- Right cutting
- 2 cutting edges
- Right-hand twist 30°
- With smooth straight shank in accordance with DIN 6535 HA

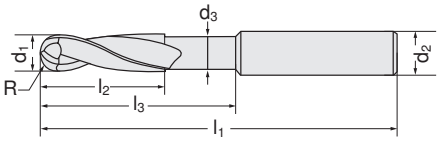
≤ 1600 N/mm² | 52 HRC

16827 101-111



65 HRC

16827 301-311



d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16827	...	RockTec 65 16827	...
2.0	1.00	4	8	40	1.95	4		101		301
2.5	1.25	4	10	40	2.4	4		102		302
3.0	1.50	5	14	50	2.8	4		103		303
4.0	2.00	8	20	50	3.7	4		104		304
5.0	2.50	9	20	50	4.6	6		105		305
6.0	3.00	10	20	50	5.5	6		106		306
8.0	4.00	12	30	64	7.4	8		107		307
10.0	5.00	14	32	70	9.2	10		108		308
12.0	6.00	16	38	75	11.0	12		109		309
16.0	8.00	32	46	90	15.0	16		110		310
20.0	10.00	38	58	100	19.0	20		111		311

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	180–370	180–370	180–350	180–350	150–300	140–270	130–260	120–240	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	180-370	100-220	80-150	60-80	50-70	-	-	-	-	-

16828 Solid carbide radius cutter

VHM RockTec | Z 2 | ≈ 30° | DIN 6535 HA

ATORN®

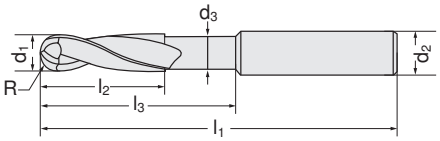
Design
- **Long**
- With clearance
- Right cutting
- 2 cutting edges
- Right-hand twist 30°
- With smooth straight shank in accordance with DIN 6535 HA

≤ 1600 N/mm² | 52 HRC

16828 101-111

65 HRC

16828 301-311



d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16828	...	RockTec 65 16828	...
2.0	1.00	4	14	75	1.95	6		101		301
2.5	1.25	4	18	75	2.4	6		102		302
3.0	1.50	5	21	75	2.8	6		103		303
4.0	2.00	8	28	75	3.7	6		104		304
5.0	2.50	9	32	75	4.6	6		105		305
6.0	3.00	10	40	75	5.5	6		106		306
8.0	4.00	12	40	75	7.4	8		107		307
10.0	5.00	14	60	100	9.2	10		108		308
12.0	6.00	16	60	100	11.0	12		109		309
16.0	8.00	32	80	125	15.0	16		110		310
20.0	10.00	38	80	125	19.0	20		111		311

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	160–320	160–320	160–300	160–300	160–300	130–250	120–180	110–200	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	130-320	100-150	80-100	50-65	40-55	-	-	-	-	-

( ) = Items with prices in brackets partly available from stock.

16829 Solid carbide radius cutter

VHM RockTec | Z 2 | ≈ 30° | DIN 6535 HA

ATORN®

Design
- **Extra long**
- With clearance
- Right cutting
- 2 cutting edges
- Right-hand twist 30°
- With smooth straight shank in accordance with DIN 6535 HA

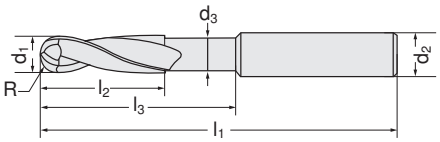
< 1600 N/mm² | 52 HRC

16829 101-111

65 HRC

16829 301-311

d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16829	...	RockTec 65 16829	...
2.0	1.00	4	20	100	1.95	6		101		301
2.5	1.25	4	25	100	2.4	6		102		302
3.0	1.50	5	30	100	2.8	6		103		303
4.0	2.00	8	40	100	3.7	6		104		304
5.0	2.50	9	50	100	4.6	6		105		305
6.0	3.00	10	60	150	5.5	6		106		306
8.0	4.00	12	80	150	7.4	8		107		307
10.0	5.00	14	100	150	9.2	10		108		308
12.0	6.00	16	110	150	11.0	12		109		309
16.0	8.00	32	150	200	15.0	16		110		310
20.0	10.00	38	150	200	19.0	20		111		311



Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	90–190	90–190	90–190	90–190	90–190	100–130	80–150	60–130	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	90-190	60-130	40-45	30-40	25-35	-	-	-	-	-

16621 Solid carbide radius cutter

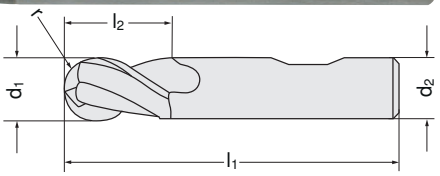
VHM TiAlN | HSC | Z 2 | ≈ 30° | DIN 6535 HB | 60 HRC

HHW

Design
- **Long**
- Right cutting
- **2 cutting edges**
- Right-hand twist
- **Centre cutting**
- Radius tolerance +/- 0.02 mm
- With clamping surface in accordance with DIN 6535 HB

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16621



d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16621	...	d_1 e8 mm	l_2 mm	l_1 mm	d_2 h6 mm	16621	...
2.0	5	50	6		203	**8.0**	14	100	8		209
3.0	8	60	6		204	**10.0**	18	100	10		211
4.0	8	70	6		205	**12.0**	22	110	12		212
5.0	10	80	6		206	**16.0**	30	140	16		214
6.0	12	90	6		207	**20.0**	38	160	20		216

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	300	250	200	180	160	140	80	60	40	-	120	100	60	180	-

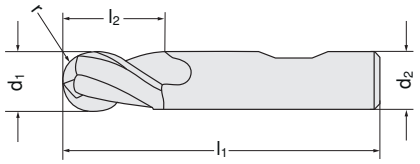
16625 Solid carbide radius cutter

VHM TiAlN | HSC | Z 4 | ≈ 30° | DIN 6535 HB | 60 HRC

Design
- **Long**
- Right cutting
- **4 cutting edges**
- Right-hand twist
- **Centre cutting**
- Radius tolerance +/– 0.02 mm
- With clamping surface in accordance with DIN 6535 HB

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16625



d_1 e8 mm	l_2 mm	l_1 mm	d_2 mm	16625	...
2.0	5	50	6		103
3.0	8	60	6		104
4.0	8	70	6		105
5.0	10	80	6		106
6.0	12	90	6		107
8.0	14	100	8		109

d_1 e8 mm	l_2 mm	l_1 mm	d_2 mm	16625	...
10.0	18	100	10		111
12.0	22	110	12		112
14.0	26	110	14		113
16.0	30	140	16		114
18.0	34	140	18		115
20.0	38	160	20		116

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	300	250	200	180	160	140	80	60	40	-	-	-	-	-	-

16655 Solid carbide ball milling cutter

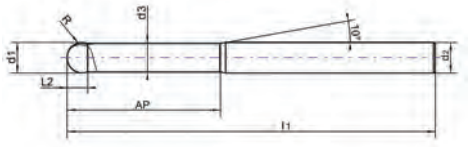
VHM TiAlN | Z 2 | DIN 6535 HA | H | 65 HRC

Design
- **Extra long**
- **2 cutting edges**
- **Centre cutting**
- Ball up to 220°
- Increased concentricity
- With smooth straight shank in accordance with DIN 6535 HA

Applications
For hard machining for 3D copy milling of high-strength materials as well as for milling of hardened steels up to HRC 65.

Quality
Universal carbide ultra-fine grain (P 20 - K 40)
TiAlN-coated.

16655



d_1 mm	d_2 mm	d_3 mm	AP mm	l_1 mm	16655	...
3.0	6	2.8	15	80		103
4.0	6	3.8	20	80		104
5.0	6	4.7	25	90		105
6.0	6	5.7	30	100		106

d_1 mm	d_2 mm	d_3 mm	AP mm	l_1 mm	16655	...
8.0	8	7.5	40	100		107
10.0	10	9.4	50	120		108
12.0	12	11.2	50	120		109

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	140–160	120–140	100–120	70–80	60–70	70	65	50	30	30	-	-	-	-	-

16830 Solid carbide radius cutter

VHM RockTec | Z 4 | ≈ 30° | DIN 6535 HA

ATORN®

Design
- **Short**
- With clearance
- Right cutting
- 4 cutting edges
- Right-hand twist 30°
- With smooth straight shank in accordance with DIN 6535 HA

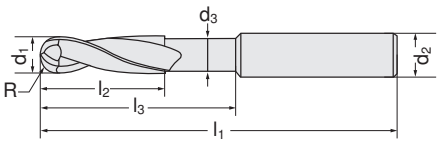
≤ 1600 N/mm² | 52 HRC

16830 103-111

65 HRC

16830 303-311

d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16830	...	RockTec 65 16830	...
3.0	1.50	5	14	50	2.8	6		**103**		**303**
4.0	2.00	8	20	50	3.7	6		**104**		**304**
5.0	2.50	9	20	50	4.6	6		**105**		**305**
6.0	3.00	10	20	50	5.5	6		**106**		**306**
8.0	4.00	12	30	64	7.4	8		**107**		**307**
10.0	5.00	14	32	70	9.2	10		**108**		**308**
12.0	6.00	16	38	75	11.0	12		**109**		**309**
16.0	8.00	32	46	90	15.0	16		**110**		**310**
20.0	10.00	38	58	100	19.0	20		**111**		**311**



Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	160–320	160–320	160–300	160–300	160–300	140-220	130–180	110–200	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	130-320	70-130	60-70	50-65	40-55	-	-	-	-	-

16831 Solid carbide radius cutter

VHM RockTec | Z 4 | ≈ 30° | DIN 6535 HA

ATORN®

Design
- **Long**
- With clearance
- Right cutting
- 4 cutting edges
- Right-hand twist 30°
- With smooth straight shank in accordance with DIN 6535 HA

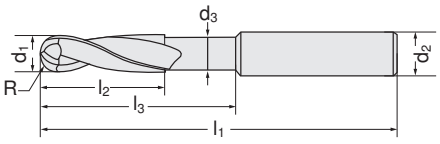
≤ 1600 N/mm² | 52 HRC

16831 103-111

65 HRC

16831 303-311

d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	RockTec 52 16831	...	RockTec 65 16831	...
3.0	1.50	5	21	75	2.8	6		**103**		**303**
4.0	2.00	8	28	75	3.7	6		**104**		**304**
5.0	2.50	9	32	75	4.6	6		**105**		**305**
6.0	3.00	10	40	75	5.5	6		**106**		**306**
8.0	4.00	12	40	75	7.4	8		**107**		**307**
10.0	5.00	14	60	100	9.2	10		**108**		**308**
12.0	6.00	16	60	100	11.0	12		**109**		**309**
16.0	8.00	32	80	125	15.0	16		**110**		**310**
20.0	10.00	38	80	125	19.0	20		**111**		**311**



Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
Rocktec 52																	
-	-	-	90–190	90–190	90–190	90–190	90–190	100–130	80–150	60–130	-	-	-	-	-	-	-
Rocktec 65																	
-	-	-	-	-	-	-	-	90-190	60-130	40-45	30-40	25-35	-	-	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16832 Solid carbide high-feed milling cutter

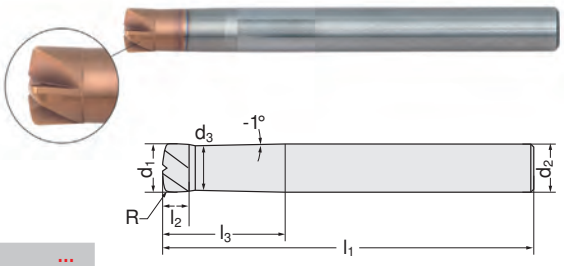
VHM RockTec | Z 4–6 | DIN 6535 HA | R | 65 HRC

ATORN®

Design
- 4 or 6-edged high-feed milling cutter with a TiSi-based PVD coating
- Short cutting edges for increased stability, longer service life, greater removal rate and higher feed

Applications
For roughing in tool and mould making and in general mechanical engineering, also for dry milling or with air cooling.

16832



RockTec 65

d_1 (e8) mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h6) mm	Z	16832	...
4.0	0.4	1.5	8	57	3.7	6	4		**101**
4.0	0.4	1.5	15	57	3.7	6	4		**102**
5.0	0.5	2.0	10	57	4.6	6	4		**103**
5.0	0.5	2.0	21	57	4.6	6	4		**104**
6.0	0.6	2.5	12	57	5.5	6	4		**105**
6.0	0.6	2.5	26	57	5.5	6	4		**106**
8.0	0.8	3.0	16	63	7.4	8	6		**107**
8.0	0.8	3.0	31	63	7.4	8	6		**108**
10.0	1.0	3.5	20	72	9.2	10	6		**109**
10.0	1.0	3.5	36	72	9.2	10	6		**110**
12.0	1.2	4.0	24	83	11.0	12	6		**111**
12.0	1.2	4.0	41	83	11.0	12	6		**112**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti	GG(G)	Plastic
-	-	-	-	-	-	-	-	160	160	150	140	120	-	-	-	-	-

16664 Trochoidal milling cutter (steel)

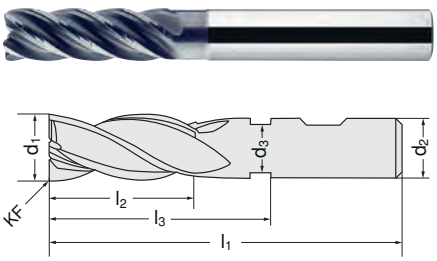
VHM AlCrN | Z 5 | 37°/38° | DIN 6535 HB | 45° | ≤ 1400 N/mm² | DIN 6535 HA

HHW

Design
- Extra long
- Uneven pitch
- With variable 37–38° twist angle for carbon steel
- With clearance
- Edge chamfer 45°

- 5 short cutting edges
- 3xD cutting length
- With chip breaker

16664



d_1 e8 mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 mm	KF mm	DIN 6535 HA 16664	DIN 6535 HA ...	DIN 6535 HB 16664	DIN 6535 HB ...
6.0	18	24	62	5.7	6	0.12		**106**		**206**
8.0	24	30	68	7.6	8	0.16		**108**		**208**
10.0	30	38	80	9.5	10	0.20		**110**		**210**
12.0	36	46	93	11.5	12	0.24		**112**		**212**
16.0	48	58	108	15.5	16	0.32		**116**		**216**
20.0	60	74	126	19.5	20	0.40		**120**		**220**

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 50HRC	< 55HRC	< 60HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
-	-	-	300	250	220	190	190	180	100	70	50	-	-	-	-	-	-

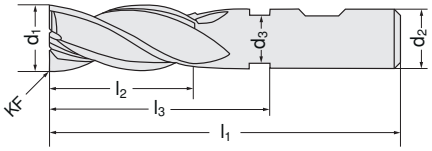
16665 Trochoidal milling cutter (VA)

VHM AlCrN | Z 5 | 41°/42° | DIN 6535 HB | 45° | max. | Ni/Co | Ti/Ni | VA

Design
- Extra long
- Uneven pitch
- With variable 41–42° twist angle for stainless steels and heat-resistant alloys
- With clearance
- Edge chamfer 45°
- 5 short cutting edges
- 3xD cutting length

DIN 6535 HA

16665



d_1 mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 mm	KF mm	DIN 6535 HA 16665 ...	DIN 6535 HB 16665 ...
6.0	18	24	62	5.7	6	0.12	106	206
8.0	24	30	68	7.6	8	0.16	108	208
10.0	30	38	80	9.5	10	0.20	110	210
12.0	36	46	93	11.5	12	0.24	112	212
16.0	48	58	108	15.5	16	0.32	116	216
20.0	60	74	126	19.5	20	0.40	120	220

Al <10%Si	Al> 10%Si	Cu	St <520N	St <750N	St <900N	St <1100N	St <1200N	St >1400N	> 45HRC	< 52HRC	< 58HRC	< 65HRC	VA <900N	VA >900N	Ti	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	190	170	130	-	-

16400 Mini end mill Ultra MS

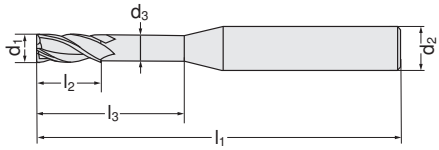
VHM AlCrN | HPC | Z 2 | 90° | DIN 6535 HA | max. | VA | Ti/Ni

ATORN®

Design
Solid carbide end mill with AlCrN coating.
Advantage:
Maximum machining performance.

Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steel up to 1300 N/mm².

16400



d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	16400 ...
0.5	0.7	50	2.0	0.45	4	101
0.5	0.7	50	4.0	0.45	4	102
0.5	0.7	50	6.0	0.45	4	103
0.5	0.7	50	8.0	0.45	4	104
0.8	1.2	50	4.0	0.75	4	105
0.8	1.2	50	6.0	0.75	4	106
0.8	1.2	50	8.0	0.75	4	107
0.8	1.2	50	10.0	0.75	4	108
0.8	1.2	50	12.0	0.75	4	109
1.0	1.5	50	6.0	0.95	4	110
1.0	1.5	50	8.0	0.95	4	111
1.0	1.5	50	10.0	0.95	4	112
1.0	1.5	50	12.0	0.95	4	113
1.0	1.5	50	16.0	0.95	4	114
1.2	1.8	50	6.0	1.15	4	115
1.2	1.8	50	8.0	1.15	4	116
1.2	1.8	50	10.0	1.15	4	117
1.2	1.8	50	12.0	1.15	4	118
1.5	2.3	50	6.0	1.45	4	119
1.5	2.3	50	8.0	1.45	4	120
1.5	2.3	50	10.0	1.45	4	121
1.5	2.3	50	12.0	1.45	4	122
1.5	2.3	50	16.0	1.45	4	123
1.5	2.3	60	20.0	1.45	4	124

d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	16400 ...
2.0	3.0	50	6.0	1.95	4	125
2.0	3.0	50	8.0	1.95	4	126
2.0	3.0	50	10.0	1.95	4	127
2.0	3.0	50	12.0	1.95	4	128
2.0	3.0	50	16.0	1.95	4	129
2.0	3.0	60	20.0	1.95	4	130
2.0	3.0	75	25.0	1.95	4	131
2.5	3.7	50	8.0	2.40	4	132
2.5	3.7	50	10.0	2.40	4	133
2.5	3.7	50	12.0	2.40	4	134
2.5	3.7	50	16.0	2.40	4	135
2.5	3.7	50	20.0	2.40	4	136
2.5	3.7	60	25.0	2.40	4	137
3.0	4.5	50	8.0	2.85	6	138
3.0	4.5	50	10.0	2.85	6	139
3.0	4.5	50	12.0	2.85	6	140
3.0	4.5	60	16.0	2.85	6	141
3.0	4.5	60	20.0	2.85	6	142
3.0	4.5	75	25.0	2.85	6	143
4.0	4.5	60	20.0	3.85	6	144
4.0	4.5	75	25.0	3.85	6	145
4.0	4.5	75	30.0	3.85	6	146
4.0	4.5	75	40.0	3.85	6	147

Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	40–130	40–130	40–130	40–80	20–60	20–60	25–80	20–40	25–80	20–40	20–30

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16401 Mini torus milling cutter Ultra MS

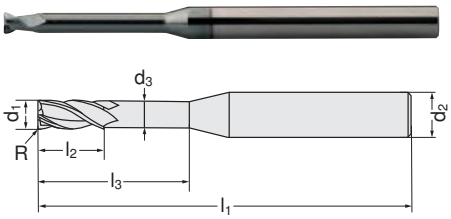
VHM AlCrN | HPC | Z 2 | R | DIN 6535 HA | max. | VA | Ti/Ni

ATORN®

Design
Solid carbide torus milling cutter with AlCrN coating.
Advantage:
Maximum machining performance.

Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steel up to 1300 N/mm².

16401



d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	R mm	16401	...
0.5	0.7	50	2.0	0.45	4	0.05		**101**
0.5	0.7	50	4.0	0.45	4	0.05		**102**
0.5	0.7	50	6.0	0.45	4	0.05		**103**
0.5	0.7	50	8.0	0.45	4	0.05		**104**
0.8	1.2	50	4.0	0.75	4	0.10		**105**
0.8	1.2	50	6.0	0.75	4	0.10		**106**
0.8	1.2	50	8.0	0.75	4	0.10		**107**
0.8	1.2	50	10.0	0.75	4	0.10		**108**
0.8	1.2	50	12.0	0.75	4	0.10		**109**
1.0	1.5	50	6.0	0.95	4	0.10		**110**
1.0	1.5	50	8.0	0.95	4	0.10		**111**
1.0	1.5	50	10.0	0.95	4	0.10		**112**
1.0	1.5	50	12.0	0.95	4	0.10		**113**
1.0	1.5	50	16.0	0.95	4	0.10		**114**
1.2	1.8	50	6.0	1.15	4	0.10		**115**
1.2	1.8	50	8.0	1.15	4	0.10		**116**
1.2	1.8	50	10.0	1.15	4	0.10		**117**
1.2	1.8	50	12.0	1.15	4	0.10		**118**
1.5	2.3	50	6.0	1.45	4	0.20		**119**
1.5	2.3	50	8.0	1.45	4	0.20		**120**
1.5	2.3	50	10.0	1.45	4	0.20		**121**
1.5	2.3	50	12.0	1.45	4	0.20		**122**
1.5	2.3	50	16.0	1.45	4	0.20		**123**

d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	R mm	16401	...
1.5	2.3	60	20.0	1.45	4	0.20		**124**
2.0	3.0	50	6.0	1.95	4	0.20		**125**
2.0	3.0	50	8.0	1.95	4	0.20		**126**
2.0	3.0	50	10.0	1.95	4	0.20		**127**
2.0	3.0	50	12.0	1.95	4	0.20		**128**
2.0	3.0	60	20.0	1.95	4	0.20		**130**
2.0	3.0	75	25.0	1.95	4	0.20		**131**
2.5	3.7	50	8.0	2.40	4	0.30		**132**
2.5	3.7	50	10.0	2.40	4	0.30		**133**
2.5	3.7	50	12.0	2.40	4	0.30		**134**
2.5	3.7	50	16.0	2.40	4	0.30		**135**
2.5	3.7	50	20.0	2.40	4	0.30		**136**
2.5	3.7	60	25.0	2.40	4	0.30		**137**
3.0	4.5	50	8.0	2.85	6	0.30		**138**
3.0	4.5	50	10.0	2.85	6	0.30		**139**
3.0	4.5	50	12.0	2.85	6	0.30		**140**
3.0	4.5	60	16.0	2.85	6	0.30		**141**
3.0	4.5	60	20.0	2.85	6	0.30		**142**
3.0	4.5	75	25.0	2.85	6	0.30		**143**
4.0	4.5	60	20.0	3.85	6	0.40		**144**
4.0	4.5	75	25.0	3.85	6	0.40		**145**
4.0	4.5	75	30.0	3.85	6	0.40		**146**
4.0	4.5	75	40.0	3.85	6	0.40		**147**

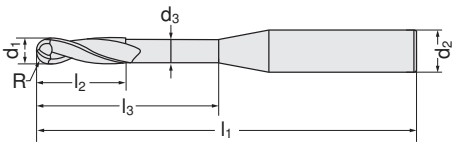
Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	40–130	40–130	40–130	40–80	20–60	20–60	25–80	20–40	25–80	20–40	20–30

16402 Mini radius cutter Ultra MS

VHM AlCrN | HPC | Z 2 | DIN 6535 HA | max. | VA | Ti/Ni

ATORN®

Design
Solid carbide radius cutter with AlCrN coating.
Advantage:
Maximum machining performance.
Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steel up to 1300 N/mm².



16402

d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	R mm	16402	...
0.5	0.4	50	2.0	0.45	4	0.25		101
0.5	0.4	50	4.0	0.45	4	0.25		102
0.5	0.4	50	6.0	0.45	4	0.25		103
0.5	0.4	50	8.0	0.45	4	0.25		104
0.8	0.6	50	2.0	0.75	4	0.40		105
0.8	0.6	50	4.0	0.75	4	0.40		106
0.8	0.6	50	6.0	0.75	4	0.40		107
0.8	0.6	50	8.0	0.75	4	0.40		108
0.8	0.6	50	10.0	0.75	4	0.40		109
1.0	0.8	50	3.0	0.95	4	0.50		110
1.0	0.8	50	4.0	0.95	4	0.50		111
1.0	0.8	50	6.0	0.95	4	0.50		112
1.0	0.8	50	8.0	0.95	4	0.50		113
1.0	0.8	50	10.0	0.95	4	0.50		114
1.0	0.8	50	12.0	0.5	4	0.50		115
1.0	0.8	50	20.0	0.95	4	0.50		116
1.5	1.2	50	8.0	1.45	4	0.75		117
1.5	1.2	50	12.0	1.45	4	0.75		118
1.5	1.2	50	16.0	1.45	4	0.75		119
2.0	1.6	50	6.0	1.95	4	1.00		120

d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	R mm	16402	...
2.0	1.6	50	8.0	1.95	4	1.00		121
2.0	1.6	50	10.0	1.95	4	1.00		122
2.0	1.6	50	12.0	1.95	4	1.00		123
2.0	1.6	50	16.0	1.95	4	1.00		124
2.0	1.6	60	20.0	1.95	4	1.00		125
2.0	1.6	75	25.0	1.95	4	1.00		126
3.0	2.4	50	8.0	2.85	6	1.50		127
3.0	2.4	50	10.0	2.85	6	1.50		128
3.0	2.4	60	16.0	2.85	6	1.50		129
3.0	2.4	60	20.0	2.85	6	1.50		130
3.0	2.4	75	25.0	2.85	6	1.50		131
3.0	2.4	75	30.0	2.85	6	1.50		132
4.0	3.2	50	10.0	3.85	6	2.00		133
4.0	3.2	60	16.0	3.85	6	2.00		134
4.0	3.2	60	20.0	3.85	6	2.00		135
4.0	3.2	75	25.0	3.85	6	2.00		136
4.0	3.2	75	30.0	3.85	6	2.00		137
4.0	3.2	75	35.0	3.85	6	2.00		138
4.0	3.2	100	40.0	3.85	6	2.00		139
4.0	3.2	100	50.0	3.85	6	2.00		140

Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	40–130	40–130	40–130	40–80	20–60	20–60	25–80	20–40	25–80	20–40	20–30

16403 Solid carbide square end mill Ultra MS

VHM AlCrN | Z 3 | 90° | HPC | max. | VA | Ti/Ni

ATORN®

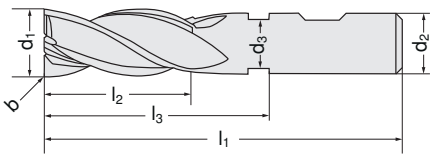
Design
Solid carbide square end mill with clearance and AlCrN coating.
Advantage:
Maximum machining performance.
Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steel up to 1300 N/mm².

DIN 6535 HA

16403 101-109

DIN 6535 HB

16403 201-209



						DIN 6535 HA		DIN 6535 HB	
d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	16403	...	16403	...
3.0	6	2.8	50	15	9		101		201
4.0	6	3.7	50	20	12		102		202
5.0	6	4.6	50	20	15		103		203
6.0	6	5.5	50	20	16		104		204
8.0	8	7.4	64	30	20		105		205
10.0	10	9.2	70	32	22		106		206
12.0	12	11.0	75	37	25		107		207
16.0	16	15.0	90	46	32		108		208
20.0	20	19.0	100	58	38		109		209

Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	120–140	120–140	120–140	50–70	50–70	50–70	70–80	50–60	70–80	60–70	20–30

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16405 Solid carbide radius cutter short Ultra MS

VHM AlCrN | Z 2 | HPC | max. | VA | Ti/Ni

ATORN®

Design
Solid carbide radius cutter with AlCrN coating.
Advantage:
Maximum machining performance.

Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steel up to 1300 N/mm².

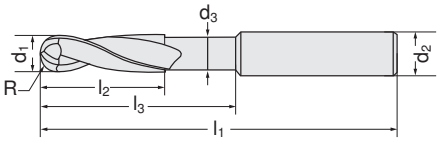
DIN 6535 HA

16405 101-109

DIN 6535 HB

16405 201-209

							DIN 6535 HA		DIN 6535 HB	
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	R mm	16405	...	16405	...
3.0	5	57	20	2.8	6	1.5		101		201
4.0	6	57	20	3.7	6	2.0		102		202
5.0	7	57	20	4.6	6	2.5		103		203
6.0	8	57	20	5.5	6	3.0		104		204
8.0	10	64	25	7.4	8	4.0		105		205
10.0	12	75	35	9.2	10	5.0		106		206
12.0	14	75	35	11.0	12	6.0		107		207
16.0	18	90	45	15.0	16	8.0		108		208
20.0	20	100	50	19.0	20	10.0		109		209



Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	120–140	120–140	120–140	50–70	50–70	50–70	70–80	50–60	70–80	60–70	20–30

16407 Solid carbide radius cutter long Ultra MS

VHM AlCrN | HPC | Z 2 | max. | VA | Ti/Ni

ATORN®

Design
Solid carbide radius cutter with AlCrN coating.
Advantage:
Maximum machining performance.

Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steel up to 1300 N/mm².

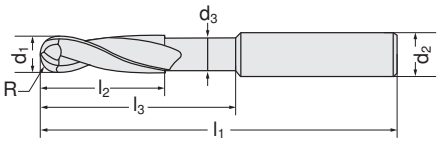
DIN 6535 HA

16407 101-109

DIN 6535 HB

16407 201-209

							DIN 6535 HA		DIN 6535 HB	
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 mm	R mm	16407	...	16407	...
3.0	5.0	75	21	2.8	6	1.5		101		201
4.0	8.0	75	28	3.7	6	2.0		102		202
5.0	9.0	75	32	4.6	6	2.5		103		203
6.0	10.0	75	40	5.5	6	3.0		104		204
8.0	12.0	75	40	7.4	8	4.0		105		205
10.0	14.0	100	60	9.2	10	5.0		106		206
12.0	16.0	100	60	11.0	12	6.0		107		207
16.0	32.0	125	80	15.0	16	8.0		108		208
20.0	38.0	125	80	19.0	20	10.0		109		209



Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	120–140	120–140	120–140	50–70	50–70	50–70	70–80	50–60	70–80	60–70	20–30

16544 Solid carbide end mill Ultra MS

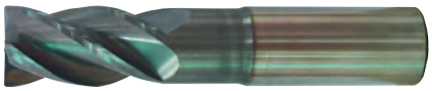
VHM AlCrN | HPC | 35°/38° | Z 4 | 45° | max. | VA | Ti/Ni

ATORN®

Design
Solid carbide cutter with clearance for roughing and finishing with variable pitch and uneven twist.
Advantage:
Maximum machining performance with unbeatable smoothness.

Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steels up to 1300 N/mm².

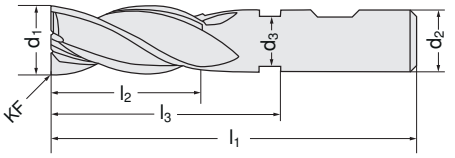
DIN 6535 HA



16544 101-108

DIN 6535 HB

16544 201-208



							DIN 6535 HA		DIN 6535 HB	
d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	16544	...	16544	...
4	6	3.7	57	20	11	0.1		101		201
5	6	4.6	57	20	13	0.1		102		202
6	6	5.5	57	20	13	0.1		103		203
8	8	7.4	64	30	20	0.2		104		204
10	10	9.2	72	32	22	0.2		105		205
12	12	11.0	83	37	26	0.2		106		206
16	16	15.0	92	46	32	0.3		107		207
20	20	19.0	104	58	38	0.4		108		208

Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	120–140	120–140	120–140	50–70	50–70	50–70	70–80	50–60	70–80	60–70	20–30

16550 Solid carbide torus milling cutter Ultra MS

VHM AlCrN | HPC | Z 4 | 35°/38° | R | max. | VA | Ti/Ni

ATORN®

Design
Solid carbide torus milling cutter with clearance, variable pitch and uneven twist.
Advantage:
Maximum machining performance with unbeatable smoothness.

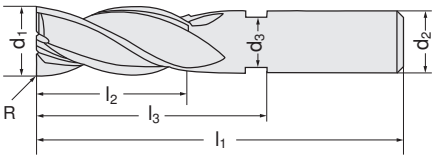
Applications
Especially suitable for processing stainless and acid-resistant steels, titanium and nickel alloys, bronze, brass and steels up to 1300 N/mm².

DIN 6535 HA

16550 301-321

DIN 6535 HB

16550 401-421



							DIN 6535 HA		DIN 6535 HB	
d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	R mm	16550	...	16550	...
4.0	6	3.7	57	20	11	0.3		301		401
4.0	6	3.7	57	20	11	0.5		302		402
5.0	6	4.6	57	20	13	0.3		303		403
5.0	6	4.6	57	20	13	0.5		304		404
6.0	6	5.5	57	20	13	0.3		305		405
6.0	6	5.5	57	20	13	0.5		306		406
6.0	6	5.5	57	20	13	1.0		307		407
8.0	8	7.4	64	30	20	0.5		308		408
8.0	8	7.4	64	30	20	1.0		309		409
10.0	10	9.2	72	32	22	0.5		310		410
10.0	10	9.2	72	32	22	1.0		311		411
12.0	12	11.0	83	37	26	0.5		312		412
12.0	12	11.0	83	37	26	1.0		313		413
12.0	12	11.0	83	37	26	2.0		314		414
12.0	12	11.0	83	37	26	3.0		315		415
16.0	16	15.0	92	46	32	1.0		316		416
16.0	16	15.0	92	46	32	2.0		317		417
16.0	16	15.0	92	46	32	3.0		318		418
20.0	20	19.0	104	58	38	1.0		319		419
20.0	20	19.0	104	58	38	2.0		320		420
20.0	20	19.0	104	58	38	3.0		321		421

Al<14%Si	Brass	Bronze	St<700N	St<900N	St<1000N	St<1300N	VA<900N	VA>900N	Ti<700N	Ti>700N	Ni-Co<700N	Ni-Co<1200N	Ni-based alloy
-	-	-	120–140	120–140	120–140	50–70	50–70	50–70	70–80	50–60	70–80	60–70	20–30

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16556 Solid carbide end mill HPC Power INOX

VHM TiAlN | HPC | Z 4 | 45° | 41°/43°/45° | VA | Ti/Ni

ATORN®

Design
- High-performance tool for roughing/finishing machining tasks with an uneven twist angle
- Face side for centre cutting
- With edge protection chamfer

Advantage:
- Maximum machining

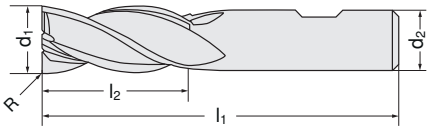
Applications
For machining VA and materials that are difficult to machine.

16556 104-120

DIN 6535 HA

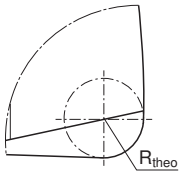
16556 204-220

DIN 6535 HB



16556 306-320

DIN 6535 HB



						DIN 6535 HA		DIN 6535 HB		DIN 6535 HB with internal cooling	
d_1 (h10) mm	l_2 mm	l_3 mm	l_1 mm	R theo (+0.05) mm	d_3 (h6) mm	16556	...	16556	...	16556	...
4.0	8	12	54	0.15	6		104		204		
5.0	10	15	54	0.2	6		105		205		
6.0	13	21	57	0.3	6		106		206		306
8.0	19	27	63	0.3	8		108		208		308
10.0	22	32	72	0.3	10		110		210		310
12.0	26	38	83	0.3	12		112		212		312
16.0	32	44	92	0.4	16		116		216		316
20.0	38	54	104	0.4	20		120		220		320

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300–330	-	250–275	-	-	-	-	-	-	-	-	-	-	100–130	100–130	30–45	-	-

16525 - 16526 Solid carbide premium end mill HPC INOX

VHM Duocon | HPC | Z 4 | 45° | ≠ | 35°/38° | Norm | DIN 6535 HA | DIN 6535 HB | VA

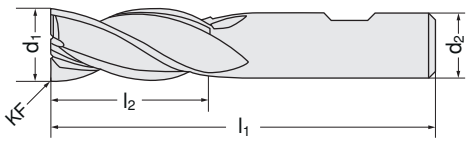
Design
- Specially edge-treated solid carbide HPC end mill with **Duocon coating**
- Uneven twist, uneven pitch
- With **the latest micro-geometry** for INOX processing
- High machining volumes possible
- Additional special feature of the HHW HPC Premium cutter is the face specially optimised for ramping

Note:
Make sure the tool and workpiece are strongly clamped.

Applications
High-performance tool especially for machining stainless steels. For roughing and finishing.

NEW

16525 103-120



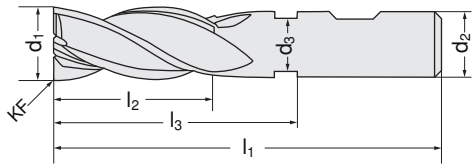
Short without clearance

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	KF x 45° mm	DIN 6535 HA 16525 ...	DIN 6535 HB 16525 ...
3.0	6	54	6	0.06	103	203
4.0	8	54	6	0.08	104	204
5.0	9	54	6	0.10	105	205
6.0	10	54	6	0.13	106	206
8.0	12	58	8	0.15	108	208
10.0	14	66	10	0.20	110	210
12.0	16	73	12	0.25	112	212
16.0	22	82	16	0.35	116	216
20.0	26	92	20	0.40	120	220

Long with clearance

NEW

16526 203-220



d_1 h10 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16526 ...	DIN 6535 HB 16526 ...
3.0	8	18	57	6	2.8	0.06	103	203
4.0	11	21	57	6	3.6	0.08	104	204
5.0	13	21	57	6	4.6	0.10	105	205
6.0	13	21	57	6	5.5	0.13	106	206
8.0	19	27	63	8	7.5	0.15	108	208
10.0	22	32	72	10	9.5	0.20	110	210
12.0	26	38	83	12	11.5	0.25	112	212
16.0	32	44	92	16	15.5	0.35	116	216
20.0	38	54	104	20	19.5	0.40	120	220

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16525																	
-	-	-	-	-	-	-	-	-	-	-	-	-	120	100	-	-	-
16526																	
-	-	-	-	-	-	-	-	-	-	-	-	-	110	80	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16630 Solid carbide roughing cutter

TiAlN Ultra | HSC | Z 4–6 | NR | ≈ 45° | 45° | VA | Uni | DIN 6535 HB

ATORN®

Design
- With clearance and edge protection chamfer
- With centre cutting
- 4-6 cutting edges

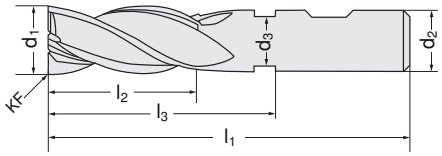
Advantage:
- Maximum machining performance

Applications
For roughing.

Quality
Solid carbide ultra-fine grain/TiAlN ultra-coated.

16630

DIN 6535 HA



d_1 h9 mm	d_2 mm	d_3 mm	l_1 mm	l_3 mm	l_2 mm	KF mm	Z	DIN 6535 HA 16630	...	DIN 6535 HB 16630	...
6.0	6	5.8	54	16	8	0.1	4		101		201
6.0	6	5.8	57	19	13	0.1	4		102		202
8.0	8	7.7	58	20	11	0.2	4		103		203
8.0	8	7.7	63	25	19	0.2	4		104		204
10.0	10	9.8	66	24	13	0.2	4		105		205
10.0	10	9.8	72	30	22	0.2	4		106		206
12.0	12	11.8	73	26	16	0.2	4		107		207
12.0	12	11.8	83	36	26	0.2	4		108		208
16.0	16	15.7	82	32	19	0.3	5		109		209
16.0	16	15.7	92	42	32	0.3	5		110		210
20.0	20	19.7	92	40	19	0.3	6		111		211
20.0	20	19.7	104	52	38	0.3	6		112		212

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1300N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300–400	300–400	120–150	135–180	135–155	135–155	120–135	70–100	70–100	-	-	-	-	40–60	40–60	30–40	100–140	-

16580 Solid carbide universal cutters

VHM | Z 2 | ≈ 25° | DIN 6535 HA | N | Uni

HW

Design
Short, 2 cutting edges, tip angle 90° (+/– 1°),
25° right-hand spiral, straight shank shape A.

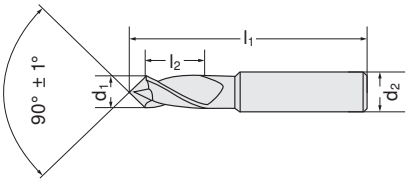
Applications
A new concept for shank tools with a focus on versatility. It allows up to 8 machining operations with just one tool.

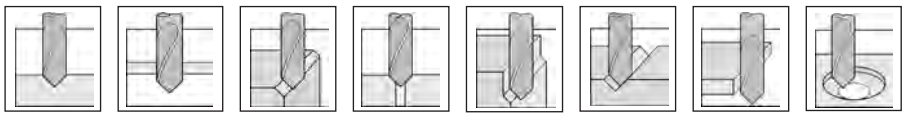
Quality
Solid carbide.

Note:
d_1 3–10 mm = h9,
d_1 12–20 mm = d9.

(1) = centring,
(2) = drilling,
(3) = combined milling/chamfering,
(4) = countersinking,
(5) = chamfering,
(6) = V-groove milling,
(7) = circumferential milling,
(8) = face/circular milling

16580





(1) (2) (3) (4) (5) (6) (7) (8)

d_1 mm	l_1 mm	l_2 mm	d_2 h6 mm	VHM 16580	...
3.0	50	7.5	4		101
4.0	50	10	5		102
5.0	50	12.5	6		103
6.0	58	15	8		104
8.0	72	20	10		105

d_1 mm	l_1 mm	l_2 mm	d_2 h6 mm	VHM 16580	...
10.0	90	23	12		106
12.0	90	26	12		107
16.0	92	34	16		108
20.0	100	42	20		109

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
120–150	120–150	50–120	70–75	50–60	40–50	-	30–40	25–30	-	-	-	-	30–35	30–35	25–30	30–40	100–150

16575 Solid carbide engraver's milling cutter 60°

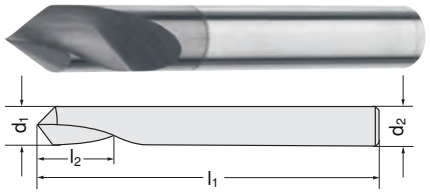
VHM TiAlN | Z 1 | 60° | DIN 6535 HA | N | Norm | Uni

HW

Design
- **1 cutting edge**
- With smooth straight shank in accordance with DIN 6535 HA

Applications
For engraving contours.

16575



d_1 h6 mm	l_2 mm	l_1 mm	d_2 h6 mm	16575 ...
3.0	10	40	3	**101**
4.0	10	40	4	**102**
6.0	10	50	6	**103**

Al<10%Si	Al>10% Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
220–240	170–200	140–160	120–140	100–120	80–100	70–80	60–70	50–60	-	-	-	-	60–70	60–70	-	120–140	200–240

16570 - 16571 Solid carbide 90° deburring tool

Z 4-6 | 90° | DIN 6535 HA | DIN 6535 HB | Uni

ATORN®

Design
- **Short**
- **4-6 cutting edges**
- With reinforced straight shank with driving surfaces in accordance with DIN 6535 HB (with Weldon)
- Ø 4 mm with smooth straight shank in accordance with DIN 6535 HA

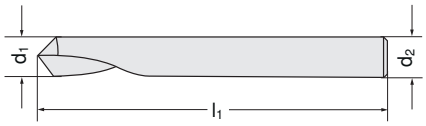
Note:
Tolerance 90° +/- 2°.

16570

VHM

16571

VHM TiAlN



			Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_1 mm	d_2 h6 mm	Z	16570 ...		16571 ...
4.0	51	4	4	**101**		**101**
6.0	64	6	4	**102**		**102**
8.0	64	8	5	**103**		**103**
10.0	70	10	6	**104**		**104**

			Solid carbide		Solid carbide/TiAlN	
d_1 h10 mm	l_1 mm	d_2 h6 mm	Z	16570 ...		16571 ...
12.0	78	12	6	**105**		**105**
16.0	89	16	6	**106**		**106**
20.0	104	20	6	**107**		**107**

Al<10%Si	Al >10% Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
16570																	
140–160	100–120	100–120	90–120	60–80	55–60	50–55	40–50	-	-	-	-	-	50–60	40–50	30–60	60–80	-
16571																	
280–350	200–250	150–180	120–140	110–120	100–110	70–80	60–70	-	-	-	-	-	80–120	60–90	30–60	80–120	-

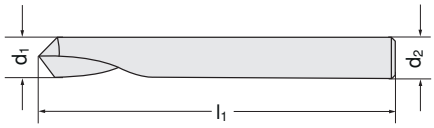
16573 VHM-Entgrater 60°

VHM TiAlN | Z 4-6 | 60° | DIN 6535 HA | DIN 6535 HB | Uni

ATORN®

Design
- **Short**
- **4-6 cutting edges**
- With reinforced straight shank with driving surfaces in accordance with DIN 6535 HB (with Weldon)
- Ø 4 mm with smooth straight shank in accordance with DIN 6535 HA

16573



			Solid carbide/TiAlN	
d_1 h10 mm	l_1 mm	d_2 h6 mm	Z	16573 ...
4.0	51	4	4	**101**
6.0	64	6	4	**102**
8.0	64	8	5	**103**

			Solid carbide/TiAlN	
d_1 h10 mm	l_1 mm	d_2 h6 mm	Z	16573 ...
10.0	70	10	6	**104**
12.0	78	12	6	**105**
16.0	89	16	6	**106**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
280–350	200–250	150–180	120–140	110–120	100–110	70–80	60–70	-	-	-	-	-	80–120	60–90	30–60	80–120	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16583 Solid carbide forward/reverse deburring tool

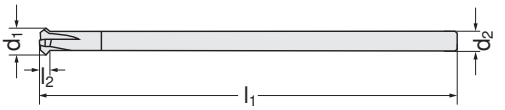
VHM TiAlN | Z 4 | DIN 6535 HA | Uni

Design
- **4 cutting edges, 45°**
- With smooth straight shank in accordance with DIN 6535 HA

Applications
For forward/reverse deburring and chamfering.

16583 101-102

16583 103-106



DIN 6535 HA

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	AP mm	16583	...
4.0	2	100	6	10		101
6.0	2	100	6	15		102
8.0	2	100	6	-		103

DIN 6535 HA

d_1 h10 mm	l_2 mm	l_1 mm	d_2 h6 mm	AP mm	16583	...
10.0	4	100	6	-		104
12.0	4	100	6	-		105
16.0	5	100	10	-		106

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300	250	250	90–120	80–120	80–100	50–80	40–70	30–35	-	-	-	-	80–120	60–90	30–60	50–100	-

16660 Solid carbide keyway cutter

VHM Alcrona | Z 6-10 | ähnl. DIN 1835B | DIN 850 | Uni

Design
- 6-10 cutting edges
- Right cutting
- Cross-toothed
- For cutting on periphery

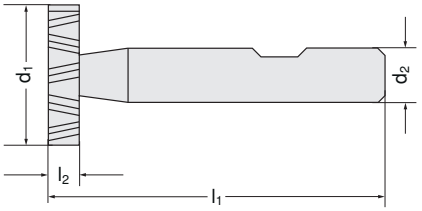
Advantage:
- High machining performance

Applications
For cutting grooves for disc springs in accordance with DIN 6888.

Note:
f_z for a_p = 0.25xD

16660

d_1 (h11) x l_2 mm	l_1 mm	d_2 (h6) mm	Z	16660	...
10.5 x 2.0	50	6	6		101
10.5 x 3.0	50	6	6		102
13.5 x 2.0	56	10	8		103
13.5 x 3.0	56	10	8		104
13.5 x 4.0	56	10	8		115
16.5 x 3.0	56	10	10		105
16.5 x 4.0	56	10	10		106
19.5 x 3.0	63	10	10		107
19.5 x 4.0	63	10	10		108
22.5 x 4.0	63	10	10		109
25.5 x 5.0	63	10	10		110
28.5 x 5.0	63	10	10		111
32.5 x 5.0	71	12	10		112
38.5 x 10.0	71	12	10		113
45.5 x 10.0	71	12	10		114



Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	120	100	90	80	70	-	-	-	-	-	80	-	-	120	-

16661 Solid carbide T-slot cutter

VHM Alcrona | N | NF | Z 6 | DIN 6535 HB | DIN 851 | Uni

Design
- 6 cutting edges
- Right cutting
- Cross-toothed
- For cutting on periphery and end face
- Straight shank with driving surface in accordance with DIN 1835 B

Advantage:
- High machining performance

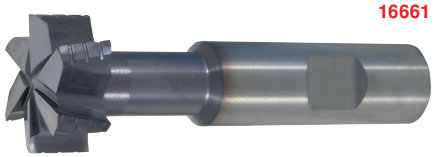
Applications
For milling T-slots.

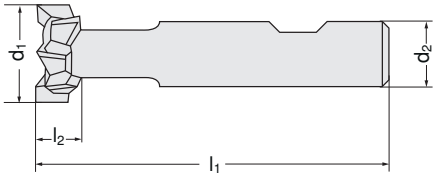
Note:
Drive up to full engagement f_z with 50%.

16661 101-107
Design
- Type N

16661 201-207
Design
- Type NF

16661





d_1 (h11) mm	l_2 (h11) mm	l_1 mm	d_2 (h6) mm	d_3 mm	t_{max} mm	Type N 16661	...	Type NF 16661	...
12.5	6	57	10	5	3.75		101		201
16.0	8	62	10	7	4.50		102		202
18.0	8	70	12	8	5.00		103		203
21.0	9	74	12	10	5.50		104		204
25.0	11	82	16	12	6.50		105		205
28.0	12	85	16	13	7.50		106		206
32.0	14	90	16	15	8.50		107		207

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	120	100	90	80	70	-	-	-	-	-	80	-	-	120	-

16662 Solid carbide angle cutter

VHM Alcrona | Z 6–9 | DIN 6535 HB | Uni

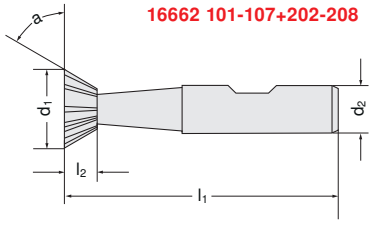
Design
- 6-9 cutting edges
- Right cutting
- Straight shank with driving surface in accordance with DIN 1835 B

Applications
For cutting angle grooves
(slide guideways etc.).

Note:
Drive up to full engagement fz with 50%.

16662 101-107
Design
- **Shape C**
- Cutting edge tapering in the direction of the shank
- For cutting on periphery and end face
- **a = 45°**

16662 101-107+202-208



16662 202-208
Design
- **Shape C**
- Cutting edge tapering in the direction of the shank
- For cutting on periphery and end face
- **a = 60°**

DIN 1833C

16662 101-107

16662 202-208

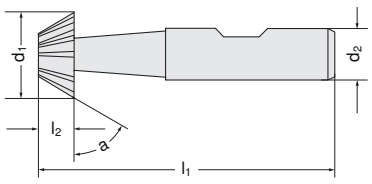
16662 301-307
Design
- **Shape D**
- Cutting edge tapering in the direction of the end face
- Only cuts on periphery
- **a = 45°**

DIN 1833D

16662 301-307

16662 401-407
Design
- **Shape D**
- Cutting edge tapering in the direction of the end face
- Only cuts on periphery
- **a = 60°**

16662 301–307+401–407



DIN 1833D

16662 401-407

d_1 (js16) mm	45° l_2 mm	60° l_2 mm	l_1 mm	d_2 (h6) mm	Z	45° / C 16662	...	60° / C 16662	...	45° / D 16662	...	60° / D 16662	...
16	4.0	6.3	60	10	6		101		202		301		401
20	5,0	8,0	63	12	8		102		203		302		402
22	6,0	9,0	67	12	8		103		204		303		403
25	6.3	10.0	67	12	8		104		205		304		404
28	7.5	11.0	80	16	9		105		206		305		405
32	8.0	12.5	71	16	9		106		207		306		406
38	10.0	16.0	80	16	9		107		208		307		407

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	120	100	90	80	70	-	-	-	-	-	80	-	-	120	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16658 Solid carbide quarter circle cutter

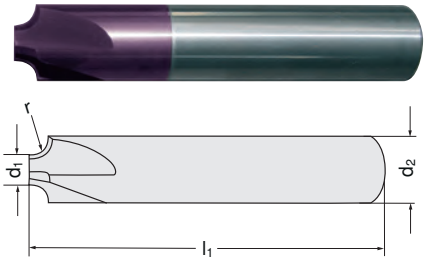
VHM TiAlN | Z 4 | DIN 6535 HA | Norm | 45 HRC | Uni

Design
- **4 cutting edges**
- Straight-grooved
- With smooth straight shank in accordance with DIN 6535 HA
- Radius tolerance +/- 0.01 mm

Applications
For materials up to HRC 45. For rounding and deburring of edges and contours. For high-strength materials as well as for aluminium and non-ferrous metals.

Quality
Universal carbide ultra-fine grain (P 20 - K 40) TiAlN-coated.

16658



Radius	d_1 mm	l_1 mm	d_2 mm	16658	...
0.2	5.6	58	6		102
0.3	5.4	58	6		103
0.5	7.0	70	8		105
1.0	6.0	70	8		110
1.5	7.0	75	10		115
2.0	6.0	75	10		120
2.5	7.0	75	12		125
3.0	6.0	75	12		130
3.5	9.0	80	16		135
4.0	8.0	80	16		140
4.5	7.0	80	16		145
5.0	10.0	80	20		150
6.0	8.0	80	20		160

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
120–600	100–400	80–250	60–150	50–120	50–100	40–90	40–80	30–70	55–75	-	-	-	30–80	20–70	20–60	60–130	-

16710 Solid carbide mini end mills

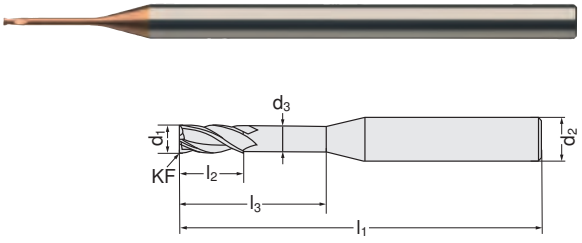
ATORN®

VHM ZrCN Ultra-N | HSC | Z 2 | ≈ 30° | DIN 6535 HA | 45° | max. | ALU | CU | MS | Kunststoffe

Design
- With edge chamfer

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16710	...
0.5	0.9	55	4	0.48	4	0.05		101
0.5	0.9	65	6	0.48	4	0.05		102
0.5	0.9	65	10	0.48	4	0.05		103
1.0	1.5	55	5	0.95	4	0.10		104
1.0	1.5	65	10	0.95	4	0.10		105
1.0	1.5	65	15	0.95	4	0.10		106
1.5	1.8	55	8	1.44	4	0.10		107
1.5	1.8	65	15	1.44	4	0.10		108
1.5	1.8	65	20	1.44	4	0.10		109
2.0	2.0	55	10	1.92	4	0.10		110
2.0	2.0	65	20	1.92	4	0.10		111
2.5	2.5	55	12	2.40	4	0.10		112
2.5	2.5	65	20	2.40	4	0.10		113

16710



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
400–450	180–320	250–420	180–320	300–450	400–550	250–420

16711 Solid carbide mini torus milling cutter

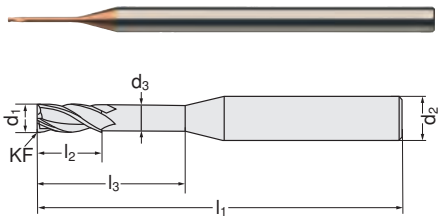
VHM ZrCN Ultra-N | HSC | Z 2 | ≈ 30° | DIN 6535 HA | R | max. | ALU | CU | MS | Kunststoffe

ATORN®

Design
Radius tolerance 0/-0.015

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16711	...
0.5	0.9	55	4	0.48	4	0.05		101
0.5	0.9	65	6	0.48	4	0.05		102
0.5	0.9	65	10	0.48	4	0.08		103
1.0	1.5	55	5	0.95	4	0.08		104
1.0	1.5	65	10	0.95	4	0.10		105
1.0	1.5	65	15	0.95	4	0.10		106
1.5	1.8	55	8	1.44	4	0.12		107
1.5	1.8	65	15	1.44	4	0.15		108
1.5	1.8	65	20	1.44	4	0.15		109
2.0	2.0	55	10	1.92	4	0.20		110
2.0	2.0	65	20	1.92	4	0.20		111
2.5	2.5	55	12	2.40	4	0.25		112
2.5	2.5	65	20	2.40	4	0.25		113

16711



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
400–450	180–320	250–420	180–320	300–450	400–550	250–420

16712 Solid carbide mini radius cutters

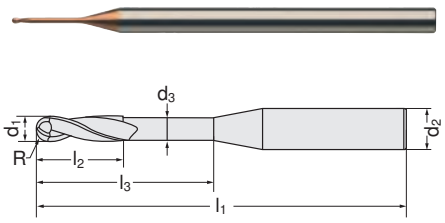
VHM ZrCN Ultra-N | HSC | Z 2 | ≈ 30° | DIN 6535 HA | max. | ALU | CU | MS | Kunststoffe

ATORN®

Design
Radius tolerance +/-0.01

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16712	...
0.5	0.9	55	4	0.48	4	0.25		101
0.5	0.9	65	6	0.48	4	0.25		102
0.5	0.9	65	10	0.48	4	0.25		103
1.0	1.5	55	5	0.95	4	0.50		104
1.0	1.5	65	10	0.95	4	0.50		105
1.0	1.5	65	15	0.95	4	0.50		106
1.5	1.8	55	8	1.44	4	0.75		107
1.5	1.8	65	15	1.44	4	0.75		108
1.5	1.8	65	20	1.44	4	0.75		109
2.0	2.0	55	10	1.92	4	1.00		110
2.0	2.0	65	20	1.92	4	1.00		111
2.5	2.5	55	12	2.40	4	1.75		112
2.5	2.5	65	20	2.40	4	1.75		113

16712



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
400–450	180–320	250–420	180–320	300–450	400–550	250–420

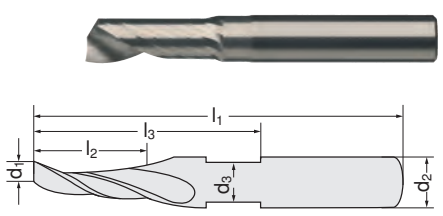
16715 Solid carbide single-tooth cutters

VHM poliert | HSC | Z 1 | ≈ 30° | DIN 6535 HA | 90° | max. | ALU | CU | MS | Kunststoffe

ATORN®

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	16715	...
1.5	6	50	22	1.45	3		101
2.0	8	50	22	1.80	3		102
3.0	12	50	22	2.80	3		103
4.0	15	57	29	3.80	4		104
5.0	17	60	32	4.80	5		105
6.0	20	64	28	5.80	6		106
8.0	24	64	28	7.80	8		107
10.0	25	73	33	9.70	10		108
12.0	32	84	39	11.70	12		109
16.0	38	93	45	15.70	16		110

16715



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16717 Solid carbide end mill

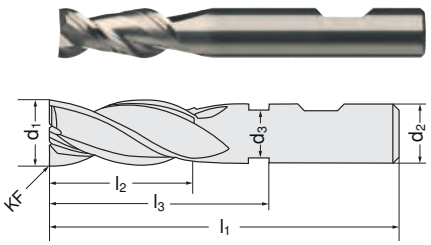
ATORN®

Design
- With edge chamfer

VHM poliert | HSC | Z 2 | ≈ 45° | DIN 6535 HB | 45° | max. | ALU | CU | MS | Kunst-stoffe

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16717	...
3.0	8	57	18	2.90	6	0.1		101
4.0	11	57	18	3.90	6	0.1		102
5.0	13	57	20	4.90	6	0.1		103
6.0	13	57	20	5.80	6	0.1		104
8.0	19	63	26	7.80	8	0.1		105
10.0	22	72	29	9.70	10	0.2		106
12.0	26	83	36	11.70	12	0.2		107
16.0	32	92	42	15.70	16	0.2		108
20.0	38	104	52	19.70	20	0.2		109

16717



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
300-400	120-200	160-300	120-200	200-250	300-400	160-300

16718 - 16719 Solid carbide end mill

ATORN®

Design
- With edge chamfer

VHM ZrCN Ultra-N | HSC | Z 2 | ≈ 45° | 45° | max. | ALU | CU | MS | Kunst-stoffe

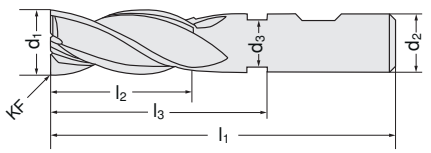
DIN 6535 HA

16718

DIN 6535 HB

16719

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16718	...	16719	...
3.0	8	57	18	2.9	6	0.1		101		101
4.0	11	57	18	3.9	6	0.1		102		102
5.0	13	57	20	4.9	6	0.1		103		103
6.0	13	57	20	5.8	6	0.1		104		104
8.0	19	63	26	7.8	8	0.1		105		105
10.0	22	72	29	9.7	10	0.2		106		106
12.0	26	83	36	11.7	12	0.2		107		107
16.0	32	92	42	15.7	16	0.2		108		108



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	250–500	200–350

16722 - 16724 Solid carbide end mill

ATORN®

Design
- With edge chamfer

VHM poliert | HSC | Z 3 | ≈ 45° | 45° | max. | ALU | CU | MS | Kunst-stoffe

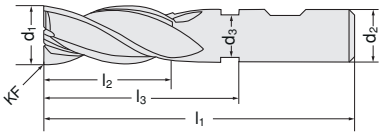
DIN 6535 HA

16722

DIN 6535 HB

16724

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16722	...	16724	...
3.0	12	57	16	2.8	6	0.1		101		101
4.0	12	57	18	3.8	6	0.1		102		102
5.0	15	57	18	4.7	6	0.1		103		103
6.0	16	57	21	5.6	6	0.1		104		104
8.0	22	64	28	7.6	8	0.1		105		105
10.0	25	73	33	9.6	10	0.2		106		106
12.0	28	84	39	11.4	12	0.2		107		107
16.0	35	93	45	15.4	16	0.2		108		108
20.0	40	104	54	19.4	20	0.2		109		109



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
300–450	125–200	175–300	175–300	200–350	300–450	175–300

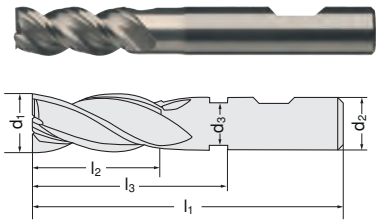
16725 Solid carbide end mill

ATORN®

Design
- Sharp-edged

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	16725 ...
3.0	12	57	16	2.8	6	**101**
4.0	12	57	18	3.8	6	**102**
5.0	15	57	18	4.7	6	**103**
6.0	16	57	21	5.6	6	**104**
8.0	22	64	28	7.6	8	**105**
10.0	25	73	33	9.6	10	**106**
12.0	28	84	39	11.4	12	**107**
16.0	35	93	45	15.4	16	**108**
20.0	40	104	54	19.4	20	**109**

16725



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
300–450	125–200	175–300	175–300	200–350	300–450	175–300

16726 - 16727 Solid carbide end mill

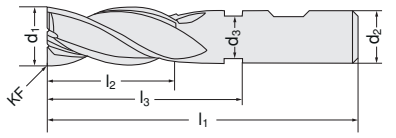
ATORN®

Design
- With edge chamfer

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16726 ...	16727 ...
3.0	12	57	16	2.8	6	0.1	**101**	**101**
4.0	12	57	18	3.8	6	0.1	**102**	**102**
5.0	15	57	18	4.7	6	0.1	**103**	**103**
6.0	16	57	21	5.6	6	0.1	**104**	**104**
8.0	22	64	28	7.6	8	0.1	**105**	**105**
10.0	25	73	33	9.6	10	0.2	**106**	**106**
12.0	28	84	39	11.4	12	0.2	**107**	**107**
16.0	35	93	45	15.4	16	0.2	**108**	**108**
20.0	40	104	54	19.4	20	0.2	**109**	**109**

16726

16727



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

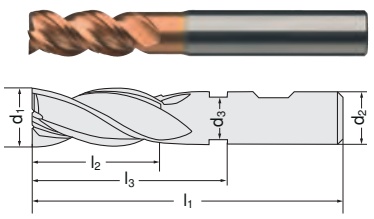
16728 Solid carbide end mill

ATORN®

Design
- Sharp-edged

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	16728 ...
3.0	12	57	16	2.8	6	**101**
4.0	12	57	18	3.8	6	**102**
5.0	15	57	18	4.7	6	**103**
6.0	16	57	21	5.6	6	**104**
8.0	22	64	28	7.6	8	**105**
10.0	25	73	33	9.6	10	**106**
12.0	28	84	39	11.4	12	**107**
16.0	35	93	45	15.4	16	**108**
20.0	40	104	54	19.4	20	**109**

16728



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

16729 - 16730 Solid carbide end mill

ATORN®

Design
- With edge chamfer

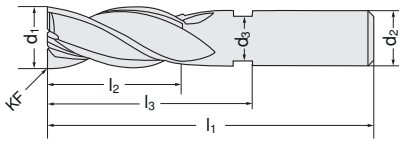
Z 3 | ≈ 45° | DIN 6535 HA | 45° | max. | ALU | CU | MS | Kunst-stoffe | VHM poliert | HSC

16729

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16729 ...	16730 ...
3.0	15	64	21	2.8	6	0.1	101	101
4.0	19	64	27	3.8	6	0.1	102	102
5.0	20	64	28	4.7	6	0.1	103	103
6.0	20	64	28	5.6	6	0.1	104	104
8.0	38	80	44	7.6	8	0.1	105	105
10.0	45	95	55	9.6	10	0.2	106	106
12.0	53	100	55	11.4	12	0.2	107	107
16.0	63	123	75	15.4	16	0.2	108	108
20.0	65	125	75	19.4	20	0.2	109	109

VHM ZrCN Ultra-N | HPC

16730



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
300–450	125–200	175–300	175–300	200–350	300–450	175–300

16731 Solid carbide end mill

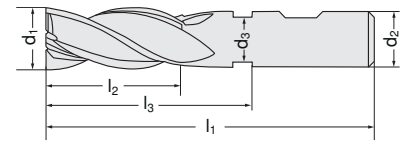
ATORN®

Design
- **Sharp-edged**

VHM ZrCN Ultra-N | HPC | Z 3 | ≈ 45° | DIN 6535 HA | 90° | max. | ALU | CU | MS | Kunst-stoffe

16731

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	16731 ...
3.0	15	64	21	2.8	6	101
4.0	19	64	27	3.8	6	102
5.0	20	64	28	4.7	6	103
6.0	20	64	28	5.6	6	104
8.0	38	80	44	7.6	8	105
10.0	45	95	55	9.6	10	106
12.0	53	100	55	11.4	12	107
16.0	63	123	75	15.4	16	108
20.0	65	125	75	19.4	20	109



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

16758 Solid carbide roughing cutter

VHM ZrN | HPC | Z 3 | 45° | Norm | max. | ALU

Design
- Robust roughing cutter with reinforced core
- Before and after coating polished chip spaces and special edge treatment

Advantage:
- Titanium-free ZrN coating for best sliding properties developed for aluminium processing.
- Maximum machining performance and unbeatable surface quality

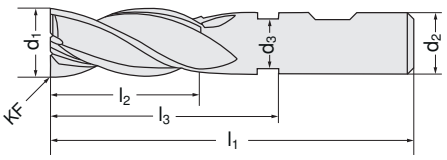
Applications
For roughing with the highest standards.

16758 103-125

16758 203-225

Short

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	DIN 1835 HA 16758 ...	DIN 1835 HB 16758 ...
3.0	8	57	12	2.8	6	0.1	103	203
4.0	11	57	18	3.8	6	0.1	104	204
5.0	13	57	18	4.8	6	0.1	105	205
6.0	13	57	18	5.8	6	0.2	106	206
8.0	21	63	25	7.8	8	0.2	108	208
10.0	22	72	30	9.7	10	0.2	110	210
12.0	26	83	36	11.7	12	0.2	112	212
16.0	36	92	42	15.7	16	0.2	116	216
18.0	36	92	42	17.6	18	0.2	118	218
20.0	41	104	52	19.5	20	0.2	120	220
25.0	50	125	65	24.5	25	0.3	125	225



Long

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	DIN 1835 HA 16758 ...	DIN 1835 HB 16758 ...
6.0	13	80	42	5.8	6	0.2	306	406
8.0	21	100	62	7.8	8	0.2	308	408
10.0	22	100	58	9.7	10	0.2	310	410
12.0	26	120	73	11.7	12	0.2	312	412
16.0	36	150	100	15.7	16	0.2	316	416
20.0	41	150	98	19.5	20	0.2	320	420

Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
370–550	210–300	160–220	-	-	-	-

16732 - 16734 Solid carbide roughing cutter

ATORN®

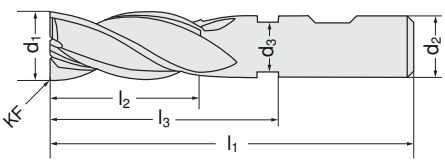
VHM ZrCN Ultra-N | HPC | Z 3 | ≈ 40° | 45° | max. | ALU | CU | MS | Kunststoffe

Design
- With edge chamfer

16732

16734

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16732 ...	16734 ...
6.0	13	57	18	5.6	6	0.4	101	101
8.0	21	63	25	7.6	8	0.4	102	102
10.0	22	72	30	9.6	10	0.4	103	103
12.0	26	83	36	11.4	12	0.4	104	104
16.0	36	92	42	15.4	16	0.4	105	105
20.0	41	104	52	19.4	20	0.4	106	106



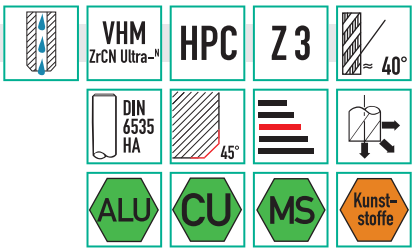
Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16735 Solid carbide roughing cutter with internal cooling

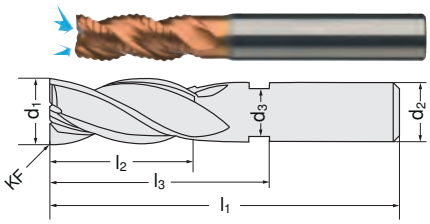
ATORN®

Design
- With edge chamfer



16735

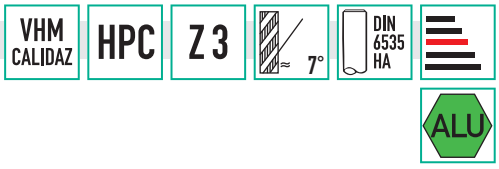
d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16735	...
6.0	13	57	18	5.6	6	0.4		101
8.0	21	63	25	7.6	8	0.4		102
10.0	22	72	30	9.6	10	0.4		103
12.0	26	83	36	11.4	12	0.4		104
16.0	36	92	42	15.4	16	0.4		105
20.0	41	104	52	19.4	20	0.4		106



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

16564 Solid carbide 3D aluminium roughing cutter

ATORN®

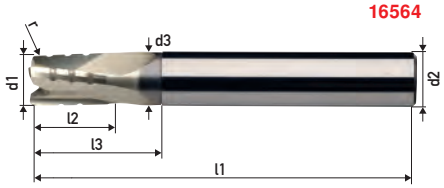


16564

Design
Centre cutting, with clearance, defined edge rounding. With straight shank in accordance with DIN 6535 HA.
Advantages: The highest cutting values can be reached in the range Vc=1000–1600 m/min with this tool thanks to the optimised cutting edge geometry (flat spirals of 7°, reinforced core, defined corner radius, chip breaker for creating discontinuous chips as well as defined edge rounding).

Applications
Especially for machining of non-ferrous metals.
Suitable for shrinking.
Quality
Multilayer PVD coating CALIDA Z (titanium-free).

Note:
Ensure stable machine conditions, secure workpiece clamping as well as sufficient coolant supply.



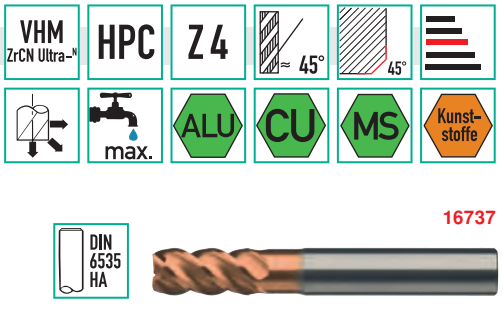
d_1e8 mm	l_2 mm	l_3 mm	l_1 mm	r mm	d_2h5 mm	d_3 mm	16564	...
6.0	8	21	57	0.6	6	5.7		106
8.0	10	27	63	0.8	8	7.7		108
10.0	12	32	72	1.0	10	9.7		110
12.0	16	38	83	1.2	12	11.7		112
16.0	20	44	92	1.6	16	15.7		116
20.0	25	54	104	2.0	20	19.0		120

Al, Al alloy	Al wrought alloy	Al<10%Si	Al >10% Si	Mg alloy	CU low alloy	Ms shrt chp.	Ms long chip.	Bronze shrt chp.	Bronze long chip.
700–730	850–890	300–330	200–240	200–240	200–230	290–315	200–240	290–315	200–240

16737 - 16738 Solid carbide end mill

ATORN®

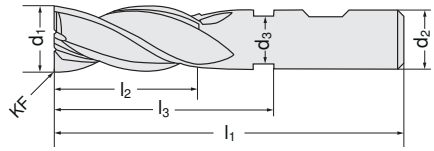
Design
- With edge chamfer



16737

16738

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16737	...	16738	...
3.0	6	57	10	2.8	6	0.1		101		101
4.0	8	57	14	3.8	6	0.1		102		102
5.0	10	57	16	4.7	6	0.1		103		103
6.0	12	57	19	5.6	6	0.2		104		104
8.0	16	63	25	7.6	8	0.2		105		105
10.0	20	72	30	9.6	10	0.2		106		106
12.0	24	83	36	11.4	12	0.2		107		107
16.0	32	92	42	15.4	16	0.2		108		108
20.0	40	104	52	19.4	20	0.2		109		109



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

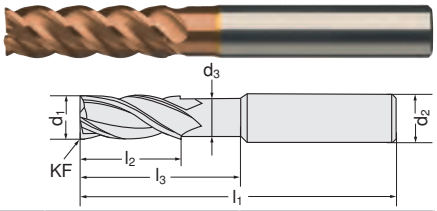
16739 Solid carbide end mill

ATORN®

Design
- With edge chamfer

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16739	...
4.0	16	62	22	3.8	6	0.1		101
5.0	17	62	24	4.7	6	0.1		102
6.0	18	62	24	5.6	6	0.2		103
8.0	24	72	30	7.6	8	0.2		104
10.0	30	80	38	9.6	10	0.2		105
12.0	36	93	46	11.4	12	0.2		106
16.0	48	108	58	15.4	16	0.2		107

16739



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

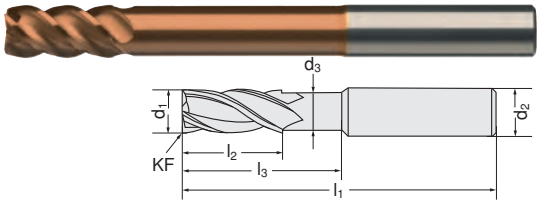
16740 Solid carbide end mill

ATORN®

Design
- With edge chamfer

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16740	...
6.0	12	80	42	5.6	6	0.2		101
8.0	16	100	58	7.6	8	0.2		102
10.0	20	100	62	9.6	10	0.2		103
12.0	24	120	75	11.4	12	0.2		104
16.0	32	150	100	15.4	16	0.2		105

16740



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
300-450	125-200	175-300	125-200	225-350	300-450	175-300

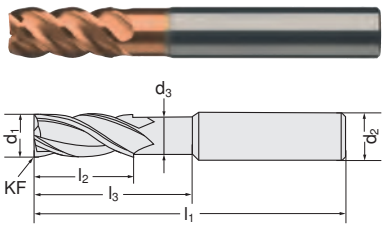
16741 Solid carbide end mill HPC

ATORN®

Design
- With edge chamfer

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16741	...
3.0	6	57	10	2.8	6	0.1		101
4.0	8	57	14	3.8	6	0.1		102
5.0	10	57	16	4.7	6	0.1		103
6.0	12	57	19	5.6	6	0.2		104
8.0	16	63	25	7.6	8	0.2		105
10.0	20	72	30	9.6	10	0.2		106
12.0	24	83	36	11.4	12	0.2		107
16.0	32	92	42	15.4	16	0.2		108
20.0	40	104	52	19.4	20	0.2		109

16741



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

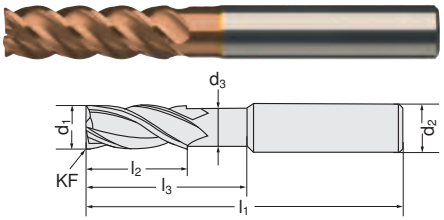
16742 Solid carbide end mill HPC

ATORN®

Design
- With edge chamfer

d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	KF mm	16742	...
4.0	16	62	22	3.8	6	0.1		101
5.0	17	62	24	4.7	6	0.1		102
6.0	18	62	24	5.6	6	0.2		103
8.0	24	68	30	7.6	8	0.2		104
10.0	30	80	38	9.6	10	0.2		105
12.0	36	93	46	11.4	12	0.2		106
16.0	48	108	58	15.4	16	0.2		107
20.0	60	126	74	19.4	20	0.2		108

16742



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16745 Solid carbide torus milling cutters

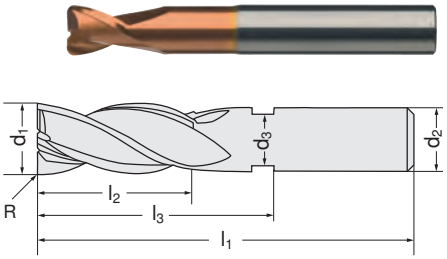
ATORN®

Design
Radius tolerance +/-0.015

VHM ZrCN Ultra-N | Z 2 | ≈ 30° | DIN 6535 HA | R | Kunststoffe | max. | ALU | CU | MS

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16745	...
3.0	4	50	14	2.9	3	0.3		101
4.0	5	50	16	3.8	4	0.3		102
5.0	6	54	18	4.8	5	0.3		103
6.0	7	57	21	5.7	6	0.3		104
6.0	7	57	21	5.7	6	1.0		105
6.0	7	57	21	5.7	6	2.0		106
8.0	9	63	27	7.7	8	0.3		107
8.0	9	63	27	7.7	8	1.0		108
8.0	9	63	27	7.7	8	2.0		109
10.0	11	72	32	9.6	10	0.3		110
10.0	11	72	32	9.6	10	1.5		111
10.0	11	72	32	9.6	10	3.0		112
12.0	12	83	38	11.6	12	1.5		113
12.0	12	83	38	11.6	12	4.0		114
16.0	16	92	44	15.5	16	2.0		115
16.0	16	92	44	15.5	16	4.0		116

16745



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
375-550	175-275	225-375	175-275	275-450	375-550	225-375

16746 Solid carbide torus milling cutters

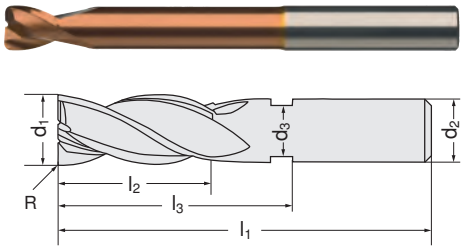
ATORN®

Design
Radius tolerance +/-0.015

VHM ZrCN Ultra-N | Z 2 | ≈ 30° | DIN 6535 HA | R | Kunststoffe | max. | ALU | CU | MS

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16746	...
3.0	4	75	32	2.80	3	0.3		101
4.0	5	75	36	3.75	4	0.3		102
5.0	6	75	40	4.70	5	0.3		103
6.0	7	80	44	5.60	6	0.3		104
6.0	7	80	44	5.60	6	1.0		105
6.0	7	80	44	5.60	6	2.0		106
8.0	9	100	54	7.60	8	0.3		107
8.0	9	100	54	7.60	8	1.0		108
8.0	9	100	54	7.60	8	2.0		109
10.0	11	100	60	9.50	10	0.3		110
10.0	11	100	60	9.50	10	1.5		111
10.0	11	100	60	9.50	10	3.0		112
12.0	12	120	75	11.50	12	1.5		113
12.0	12	120	75	11.50	12	4.0		114
16.0	16	150	92	15.50	16	2.0		115
16.0	16	150	92	15.50	16	4.0		116

16746

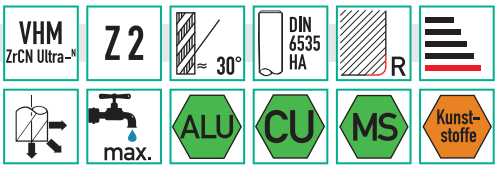


Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
375-550	175-275	225-375	175-275	275-450	375-550	225-375

16747 Solid carbide torus milling cutters

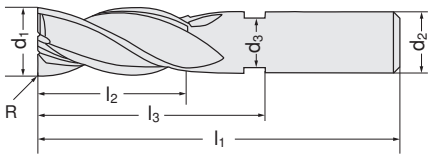
ATORN®

Design
Radius tolerance +/-0.015



16747

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16747 ...
6.0	7	120	80	5.6	6	0.3	**101**
6.0	7	120	80	5.6	6	1.0	**102**
8.0	9	130	90	7.6	8	0.3	**103**
8.0	9	130	90	7.6	8	1.0	**104**
8.0	9	130	90	7.6	8	2.0	**105**
10.0	11	150	110	9.5	10	0.3	**106**
10.0	11	150	110	9.5	10	3.0	**107**
12.0	12	160	115	11.5	12	1.5	**108**
12.0	12	160	115	11.5	12	4.0	**109**
16.0	16	200	140	15.5	16	2.0	**110**

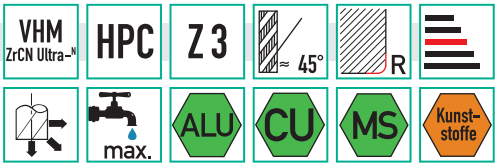


Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

16748 - 16749 Solid carbide torus milling cutters

ATORN®

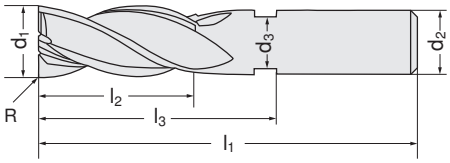
Design
Radius tolerance +/-0.015



d_1 (h9) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16748 ...	16749 ...
5.0	13	57	18	4.7	6	0.5	**101**	**101**
5.0	13	57	18	4.7	6	1.0	**102**	**102**
6.0	13	57	18	5.6	6	0.5	**103**	**103**
6.0	13	57	18	5.6	6	1.0	**104**	**104**
8.0	21	63	25	7.6	8	0.5	**105**	**105**
8.0	21	63	25	7.6	8	1.0	**106**	**106**
10.0	22	72	30	9.6	10	0.5	**107**	**107**
10.0	22	72	30	9.6	10	1.0	**108**	**108**
12.0	26	83	36	11.4	12	0.5	**109**	**109**
12.0	26	83	36	11.4	12	1.0	**110**	**110**
16.0	36	92	42	15.4	16	2.0	**111**	**111**
16.0	36	92	42	15.4	16	4.0	**112**	**112**
20.0	41	104	52	19.4	20	4.0	**113**	**113**

16748

16749



Al <10%Si	Al>10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
375-550	175-275	225-375	175-275	275-450	375-550	225-375

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16755 Solid carbide radius cutter

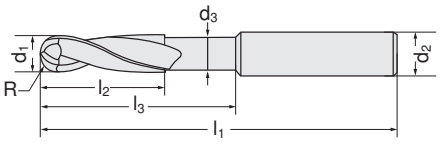
ATORN®

Design
Radius tolerance +/-0.015

VHM ZrCN Ultra-N | Z 2 | ≈ 45° | DIN 6535 HA | max. | ALU | CU | MS | Kunst-stoffe

16755

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16755	...
3.0	6	50	16	2.9	3	1.5		101
4.0	7	54	17	3.8	4	2.0		102
5.0	8	54	18	4.8	5	2.5		103
6.0	10	54	21	5.7	6	3.0		104
8.0	12	60	27	7.7	8	4.0		105
10.0	13	67	32	9.6	10	5.0		106
12.0	16	73	38	11.6	12	6.0		107
16.0	20	83	44	15.5	16	8.0		108



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
400-550	180-320	250-420	180-320	300-450	400-550	250-420

16756 Solid carbide radius cutter

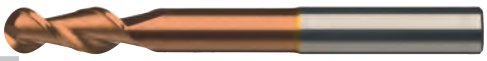
ATORN®

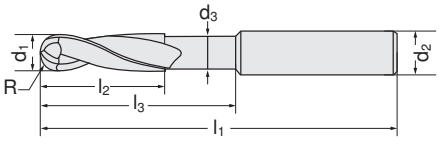
Design
Radius tolerance +/-0.015

VHM ZrCN Ultra-N | Z 2 | ≈ 45° | DIN 6535 HA | max. | ALU | CU | MS | Kunst-stoffe

16756

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16756	...
3.0	10	75	32	2.9	3	1.5		101
4.0	13	75	36	3.8	4	2.0		102
5.0	15	75	40	4.8	5	2.5		103
6.0	16	100	44	5.7	6	3.0		104
8.0	22	100	54	7.7	8	4.0		105
10.0	25	100	60	9.6	10	5.0		106
12.0	26	100	60	11.6	12	6.0		107
16.0	30	150	92	15.5	16	8.0		108





Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
400-550	180-320	250-420	180-320	300-450	400-550	250-420

16757 Solid carbide radius cutter

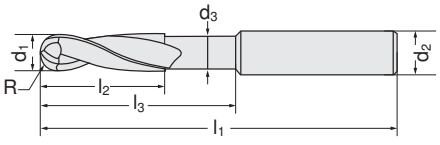
ATORN®

Design
Radius tolerance +/-0.015

VHM ZrCN Ultra-N | HPC | Z 2 | ≈ 45° | DIN 6535 HA | max. | ALU | CU | MS | Kunst-stoffe

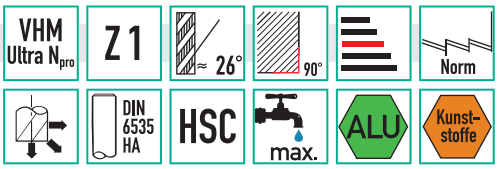
16757

d_1 (e8) mm	l_2 mm	l_1 mm	l_3 mm	d_3 mm	d_2 (h5) mm	R mm	16757	...
3.0	10	125	82	2.80	3	1.5		101
4.0	13	125	86	3.75	4	2.0		102
6.0	16	150	94	5.60	6	3.0		103
8.0	22	150	104	7.60	8	4.0		104
10.0	25	150	110	9.60	10	5.0		105
12.0	26	150	110	11.40	12	6.0		106



Al <10%Si	Al >10%Si	Cu long-chipping	Cu short-chipping	Duroplast	Thermoplastic	CFRP, GFRP
350–500	150–250	200–350	150–250	250–400	350–500	200–350

16886 Solid carbide single-tooth cutter Ultra Npro



ATORN®

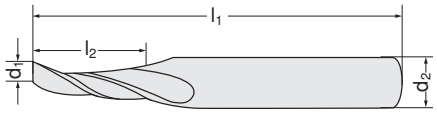
Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

Advantage:
- Very good chip removal, highest cutting performance
- Ultra-smooth coating
- For grooving and contour milling
- Extremely wear-resistant
- Micro-geometry at the cutting edge

Applications
Specially for use on modern turning and milling centres.

NEW

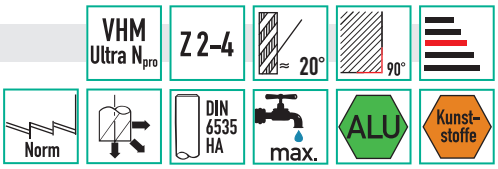
16886



d_1 h9 mm	l_2 mm	l_1 mm	d_2 h6 mm	16886	...
1.0	4	50	3		101
1.5	6	50	3		102
2.0	8	50	3		103
3.0	12	50	3		104
4.0	15	60	4		105
5.0	17	60	5		106
6.0	20	65	6		107
8.0	22	65	8		108
10.0	25	75	10		109
12.0	30	80	12		110

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
450	400	250	190	210	175	220	110

16887 Solid carbide square end mill Ultra Npro



ATORN®

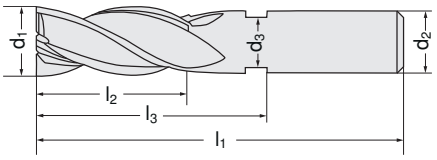
Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers
- With clearance

Advantage:
- Very good chip removal, highest cutting performance
- Ultra-smooth coating
- Extremely wear-resistant
- Micro-geometry at the cutting edges

Applications
Specially for use on modern turning and milling centres.

NEW

16887



d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	Z	16887	...
3.0	11	14	50	3	2.9	2		101
4.0	13	16	54	4	3.9	2		102
5.0	15	18	54	5	4.9	2		103
6.0	16	21	64	6	5.8	2		104
8.0	22	27	70	8	7.8	2		105
10.0	25	32	72	10	9.7	2		106
12.0	28	38	83	12	11.7	3		107
16.0	36	44	92	16	15.7	3		108
20.0	41	54	104	20	19.5	4		109

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
450	400	250	190	210	175	220	110

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16888 Solid carbide square end mill Ultra Npro

VHM Ultra N_{pro} | Z 2 | ≈ 45° | 45° | Norm | DIN 6535 HA | DIN 6535 HB | max. | ALU | Kunststoffe

ATORN®

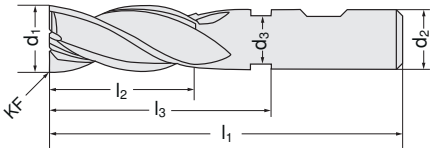
Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

Advantage:
- Very good chip removal, highest cutting performance
- With edge protection chamfer for more stable cutting edges
- Ultra-smooth coating
- Extremely wear-resistant

Applications
Specially for use on modern turning and milling centres.

NEW

16888 101-107



d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16888	...	DIN 6535 HB 16888	...
3.0	8	18	57	6	2.9	0.1		101		
4.0	11	18	57	6	3.9	0.1		102		
5.0	13	20	57	6	4.9	0.1		103		
6.0	13	20	57	6	5.8	0.1		104		
8.0	19	26	63	8	7.8	0.1		105		
10.0	22	29	72	10	9.7	0.2		106		
12.0	26	36	83	12	11.7	0.2		107		
16.0	32	42	92	16	15.7	0.2				108
20.0	38	52	104	20	19.5	0.2				109

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
450	400	225	170	190	160	220	110

16891 Solid carbide HPC high-performance cutter Ultra Npro

VHM Ultra N_{pro} | Z 3 | ≈ 45° | 45° | Norm | DIN 6535 HA | DIN 6535 HB | HPC | ≠ | max. | ALU | Kunststoffe

ATORN®

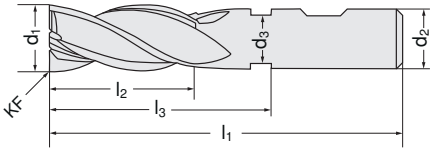
Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

Advantage:
- Very good chip removal, highest cutting performance
- Uneven tooth pitch reduces vibrations
- With edge protection chamfer for more stable cutting edges
- Extremely wear-resistant
- Ultra-smooth coating
- Micro-geometry at the cutting edges

Applications
Specially for use on modern turning and milling centres.

NEW

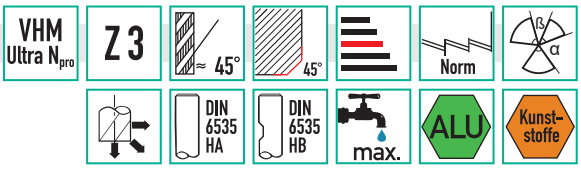
16891 101-107



d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16891	...	DIN 6535 HB 16891	...
3.0	12	16	57	6	2.9	0.1		101		
4.0	12	18	57	6	3.9	0.1		102		
5.0	15	18	57	6	4.9	0.1		103		
6.0	15	21	57	6	5.8	0.1		104		
8.0	22	28	64	8	7.8	0.1		105		
10.0	25	33	73	10	9.7	0.2		106		
12.0	28	39	84	12	11.7	0.2		107		
16.0	35	45	93	16	15.7	0.2				108
20.0	41	52	104	20	19.5	0.2				109

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
450	400	250	190	210	175	220	110

16889 Solid carbide end mill Ultra Npro



ATORN®

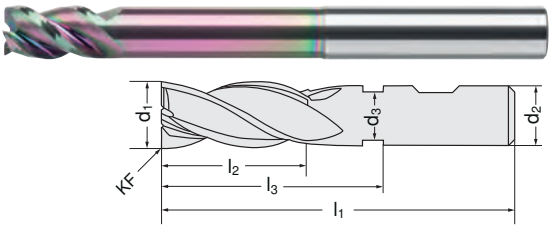
Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

Advantage:
- Very good chip removal, highest cutting performance
- Uneven tooth pitch reduces vibrations
- With edge protection chamfer for more stable cutting edges
- Ultra-smooth coating
- Extremely wear-resistant
- Micro-geometry at the cutting edges

Applications
Specially for use on modern turning and milling centres.

NEW

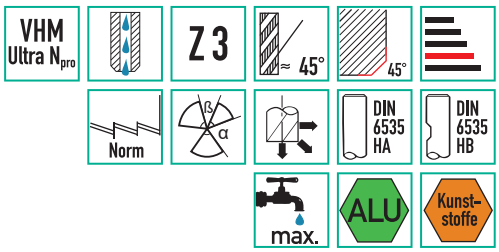
16889 101-106



d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16889 ...	DIN 6535 HB 16889 ...
4.0	6.5	24	80	6	3.9	0.1	101	
5.0	8	30	80	6	4.9	0.1	102	
6.0	10	42	80	6	5.8	0.2	103	
8.0	13	62	100	8	7.8	0.2	104	
10.0	16	58	100	10	9.7	0.2	105	
12.0	19	73	120	12	11.7	0.2	106	
16.0	25	92	150	16	15.7	0.2		107
20.0	32	100	150	20	19.5	0.2		108

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
300	280	225	170	190	160	150	80

16890 Solid carbide end mill with Ultra Npro internal cooling



ATORN®

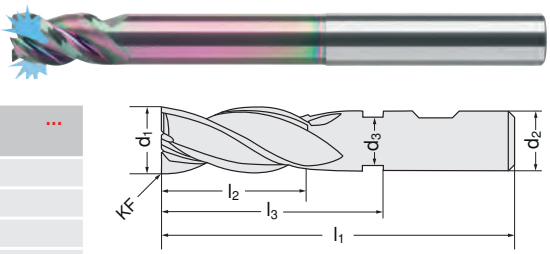
Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

Advantage:
- Very good chip removal, highest cutting performance
- Uneven tooth pitch reduces vibrations
- With edge protection chamfer for more stable cutting edges
- Extremely wear-resistant
- Ultra-smooth coating
- Micro-geometry at the cutting edges
- Radial coolant outlet

Applications
Specially for use on modern turning and milling centres.

NEW

16890 101-104



d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16890 ...	DIN 6535 HB 16890 ...
6.0	10	42	80	6	5.8	0.2	101	
8.0	13	62	100	8	7.8	0.2	102	
10.0	16	58	100	10	9.7	0.2	103	
12.0	19	73	120	12	11.7	0.2	104	
16.0	25	92	150	16	15.7	0.2		105
20.0	32	100	150	20	19.5	0.2		106

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
300	280	225	170	190	160	150	80

16898 Solid carbide roughing cutter Ultra Npro

ATORN®

Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

Advantage:
- Very good chip removal, highest cutting performance
- Extremely wear-resistant
- Ultra-smooth coating
- Roughing profile with micro-geometry

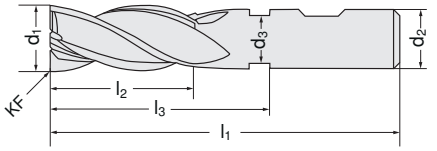
Applications
Specially for use on modern turning and milling centres.

NEW

VHM Ultra Npro | Z 3 | ≈ 40° | 45° | Norm | DIN 6535 HA | DIN 6535 HB | WF | max. | ALU | Kunst-stoffe

16898 101-104

16898 201-204



							DIN 6535 HA		DIN 6535 HB		DIN 6535 HA / IC		DIN 6535 HB / IC	
d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	d_3 mm	KF x 45° mm	16898	...	16898	...	16898	...	16898	...
6.0	14	20	57	6	5.9	0.2		101				201		
8.0	21	26	63	8	7.8	0.25		102				202		
10.0	23	31	72	10	9.8	0.3		103				203		
12.0	27	37	83	12	11.7	0.35		104				204		
16.0	36	43	92	16	15.7	0.4				105				205
20.0	41	52	104	20	19.5	0.4				106				206

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
520	490	275	210	230	195	280	-

16899 Solid carbide TVC end mill Ultra Npro

ATORN®

Design
- Solid carbide ultra-fine grain **trochoidal milling cutters** with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers
- Chip breaker at the circumference cutting edge

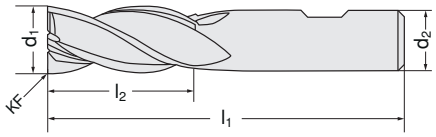
Advantage:
- Very good chip removal, highest cutting performance
- Ultra-smooth coating
- Extremely wear-resistant
- Micro-geometry at the cutting edges

Applications
Specially for use on modern turning and milling centres.
For trochoidal milling.

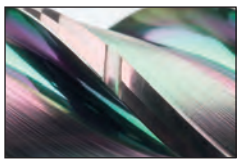
NEW

VHM Ultra Npro | Z 3 | ≈ 45° | 45° | Norm | DIN 6535 HA | DIN 6535 HB | max. | ALU | Kunst-stoffe

16899 101-104



					DIN 6535 HA		DIN 6535 HB	
d_1 h9 mm	l_2 mm	l_1 mm	d_2 h6 mm	KF x 45° mm	16899	...	16899	...
6.0	21	62	6	0.2		101		
8.0	28	68	8	0.2		102		
10.0	35	80	10	0.2		103		
12.0	42	93	12	0.2		104		
16.0	56	108	16	0.2				105
20.0	70	126	20	0.2				106



Offset chip breaker at the circumferential cutting edge

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
280	260	250	190	210	175	160	120

16892 Solid carbide HPC high-performance cutter Ultra Npro

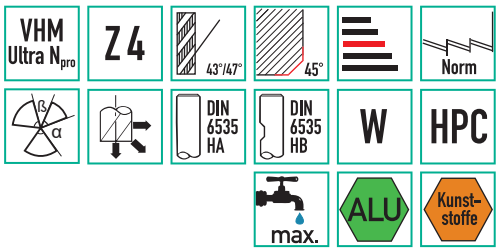
ATORN®

Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers
- Uneven pitch, uneven twist

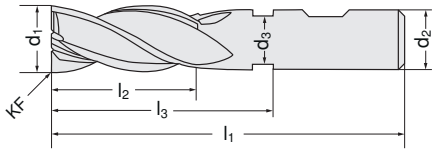
Advantage:
- Very good chip removal, highest cutting performance
- Uneven tooth pitch reduces vibrations
- With edge protection chamfer for more stable cutting edges
- Extremely wear-resistant
- Ultra-smooth coating
- Micro-geometry at the cutting edges

Applications
Specially for use on modern turning and milling centres.

NEW



16892 101-107



d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	KF x 45° mm	DIN 6535 HA 16892 ...	DIN 6535 HB 16892 ...
3.0	6	10	57	6	2.9	0.1	101	
4.0	8	14	57	6	3.9	0.1	102	
5.0	10	16	57	6	4.9	0.1	103	
6.0	12	19	57	6	5.8	0.1	104	
8.0	16	25	63	8	7.8	0.1	105	
10.0	20	30	72	10	9.7	0.2	106	
12.0	24	36	83	12	11.7	0.2	107	
16.0	32	42	92	16	15.7	0.2		108
20.0	40	52	104	20	19.5	0.2		109

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
380	360	240	180	210	150	-	-

16893 Solid carbide torus milling cutter Ultra Npro

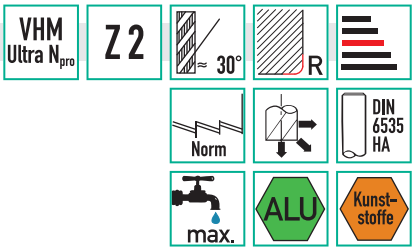
ATORN®

Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

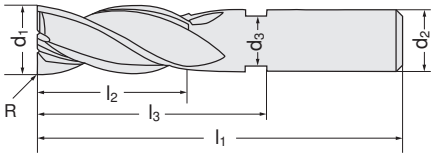
Advantage:
- Very good chip removal, highest cutting performance
- Extremely wear-resistant
- Ultra-smooth coating

Applications
Specially for use on modern turning and milling centres.

NEW



16893



d_1 h9 x R mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	16893 ...
3 x 0.3	4	14	50	6	2.9	101
4 x 0.3	5	16	50	6	3.9	102
5 x 0.3	6	18	54	6	4.9	103
6 x 0.3	7	21	57	6	5.8	104
6 x 1.0	7	21	57	6	5.8	105
6 x 2.0	7	21	57	6	5.8	106
8 x 0.3	9	27	63	8	7.8	107
8 x 1.0	9	27	63	8	7.8	108
8 x 2.0	9	27	63	8	7.8	109
10 x 0.3	11	32	72	10	9.7	110
10 x 1.5	11	32	72	10	9.7	111
10 x 3.0	11	32	72	10	9.7	112
12 x 1.5	13	38	83	12	11.7	113
12 x 4.0	13	38	83	12	11.7	114
16 x 2.0	17	44	92	16	15.7	115
16 x 5.0	17	44	92	16	15.7	116

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
320	280	250	190	210	175	240	160

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16894 Solid carbide torus milling cutter Ultra Npro

ATORN®

Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- With polishing sanding in the chip chambers

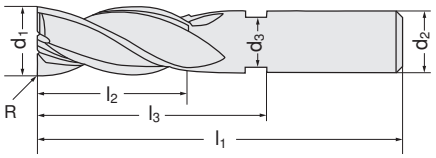
Advantage:
- Very good chip removal, highest cutting performance
- Extremely wear-resistant
- Ultra-smooth coating

Applications
Specially for use on modern turning and milling centres.

NEW

VHM Ultra N_{pro} | Z 2 | ≈ 30° | R | Norm | DIN 6535 HA | max. | ALU | Kunst-stoffe

16894



d_1 h9 x R mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	16894	...
3 x 0.3	4	32	75	6	2.9		**101**
4 x 0.3	5	36	75	6	3.9		**102**
5 x 0.3	6	40	75	6	4.9		**103**
6 x 0.3	7	44	80	6	5.8		**104**
6 x 1.0	7	44	80	6	5.8		**105**
6 x 2.0	7	44	80	6	5.8		**106**
8 x 0.3	9	54	100	8	7.8		**107**
8 x 1.0	9	54	100	8	7.8		**108**
8 x 2.0	9	54	100	8	7.8		**109**
10 x 0.3	11	60	100	10	9.7		**110**
10 x 1.5	11	60	100	10	9.7		**111**
10 x 3.0	11	60	100	10	9.7		**112**
12 x 1.5	13	75	120	12	11.7		**113**
12 x 4.0	13	75	120	12	11.7		**114**
16 x 2.0	17	92	150	16	15.7		**115**
16 x 5.0	17	92	150	16	15.7		**116**

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
220	180	250	190	210	175	160	120

16895 Solid carbide TVC/HPC torus milling cutter Ultra Npro

ATORN®

Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- Uneven pitch

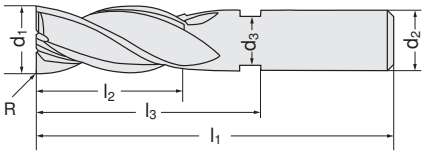
Advantage:
- Very good chip removal, highest cutting performance
- Uneven tooth pitch reduces vibrations
- Extremely wear-resistant
- Ultra-smooth coating
- Micro-geometry at the face cutting edges

Applications
Specially for use on modern turning and milling centres.
For trochoidal milling.

NEW

VHM Ultra N_{pro} | Z 3 | ≈ 45° | R | Norm | DIN 6535 HA | β α | HPC | max. | ALU | Kunst-stoffe

16895

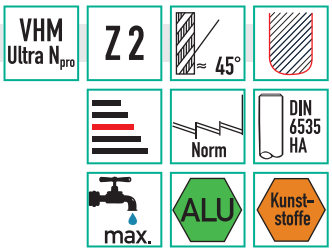


Offset chip breaker at the circumferential cutting edge

d_1 h9 x R mm	l_2 mm	l_3 mm	l_1 mm	d_2 h6 mm	d_3 mm	16895	...
6 x 0.5	25	31	71	6	5.8		**101**
6 x 1.0	25	31	71	6	5.8		**102**
8 x 0.5	33	41	80	8	7.8		**103**
8 x 1.0	33	41	80	8	7.8		**104**
8 x 2.0	33	41	80	8	7.8		**105**
10 x 0.5	41	51	95	10	9.7		**106**
10 x 1.0	41	51	95	10	9.7		**107**
10 x 2.0	41	51	95	10	9.7		**108**
12 x 0.5	49	61	109	12	11.7		**109**
12 x 1.0	49	61	109	12	11.7		**110**
12 x 2.0	49	61	109	12	11.7		**111**
16 x 2.0	65	81	132	16	15.7		**112**
16 x 3.0	65	81	132	16	15.7		**113**
20 x 2.0	82	101	154	20	19.5		**114**
20 x 3.0	82	101	154	20	19.5		**115**

Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
280	260	250	190	210	175	160	120

16896 Solid carbide radius cutter short Ultra Npro



ATORN®

Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- Radius tolerance +/- 0.01 mm

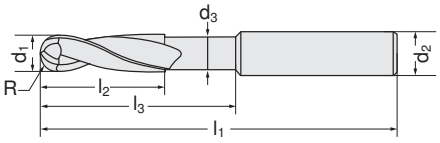
Advantage:
- Very good chip removal, highest cutting performance
- Extremely wear-resistant
- Ultra-smooth coating

Applications
Specially for use on modern turning and milling centres.

NEW

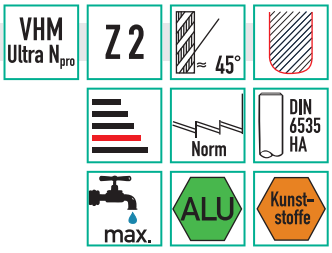
16896

d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	d_3 mm	KF x 45° mm	16896	...
3.0	6	16	50	3	2.9	0.1		101
4.0	7	17	54	4	3.9	0.1		102
5.0	8	18	54	5	4.9	0.1		103
6.0	10	21	54	6	5.8	0.1		104
8.0	12	27	59	8	7.8	0.1		105
10.0	13	32	67	10	9.7	0.2		106
12.0	16	38	73	12	11.7	0.2		107
16.0	20	44	83	16	15.7	0.2		108



Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
800	600	275	210	230	190	500	-

16897 Solid carbide radius cutter Ultra Npro



ATORN®

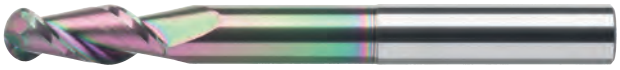
Design
- Solid carbide ultra-fine grain cutter with **Ultra Npro coating** (same as DLC)
- Radius tolerance +/- 0.01 mm

Advantage:
- Very good chip removal, highest cutting performance
- Extremely wear-resistant
- Ultra-smooth coating

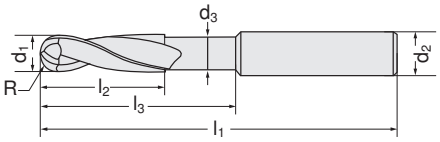
Applications
Specially for use on modern turning and milling centres.

NEW

16897



d_1 h9 mm	l_2 mm	l_3 mm	l_1 mm	d_2 mm	d_3 mm	KF x 45° mm	16897	...
3.0	10	32	75	3	2.9	0.1		101
4.0	13	36	75	4	3.9	0.1		102
5.0	15	40	75	5	4.9	0.1		103
6.0	16	44	100	6	5.8	0.1		104
8.0	22	54	100	8	7.8	0.1		105
10.0	25	60	100	10	9.7	0.2		106
12.0	26	60	100	12	11.7	0.2		107
16.0	30	92	150	16	15.7	0.2		108



Al <10%Si	Al >10%Si	Brass long-chipping	Brass short-chipping	Bronze long-chipping	Bronze short-chipping	Thermoplastic	CFRP, GFRP
700	550	250	190	210	170	450	-

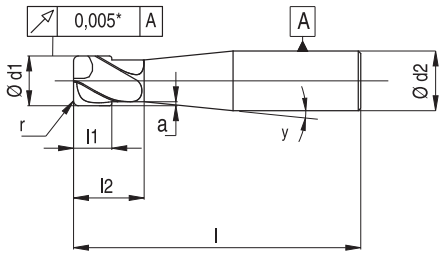
16702 Solid carbide end mill for graphite

VHM | Z 2–3 | DIN 6535 HA | Graphit | GFK

Design

Long and extra long, right cutting,
2–3 cutting edges, right-hand twist approx. 40°,
centre cutting, with smooth straight shank in
accordance with DIN 6535 HA.

16702



d_1 g7 mm	r mm	d_2 h5 mm	l mm	l_1 mm	Z	y (°)	16702	...
2.0	0.1	2	50	10	3	–		102
2.0	0.1	3	50	10	3	15		103
3.0	0.1	3	50	10	3	–		104
4.0	0.2	4	60	15	3	–		106
L 4.0	0.3	4	102	10	2	–		107
5.0	0.2	5	60	20	3	–		109
L 5.0	0.5	5	102	13	2	–		110
6.0	0.3	6	78	30	3	–		112
L 6.0	0.5	6	102	42	2	–		113
XL 6.0	0.5	6	150	26	2	–		114
8.0	0.3	8	78	30	3	–		116
L 8.0	0.5	8	150	41	2	–		117
10.0	0.3	10	78	30	3	–		119
L 10.0	0.5	10	150	42	2	–		120
12.0	0.3	12	89	30	3	–		122

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Graphite
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200

16703 Solid carbide diamond copy milling cutter DC Ultra

VHM | Z 4 | ≈ 30° | DIN 6535 HA | Norm | Graphit | GFK

ATORN®

Design
- Solid carbide cutter with crystalline diamond coating
- Special cemented carbide with excellent coating adhesion for the longest possible service life
- Shaft tolerance: h5
- Coating thickness: 6 + 2 µm
- Concentricity: 5 µm
- Radius accuracy: +/- 3 µm

Applications
For milling graphite, copper and GFRP materials.

16703

Short

d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h5) mm	16703	...
4.0	0.40	8	16	50	3.7	4		101
4.0	0.50	8	16	50	3.7	4		102
4.0	1.00	8	16	50	3.7	4		103
5.0	0.50	10	18	54	4.6	5		104
5.0	1.00	10	18	54	4.6	5		105
6.0	0.50	13	21	57	5.5	6		106
6.0	1.00	13	21	57	5.5	6		107
6.0	1.50	13	21	57	5.5	6		108
8.0	0.50	15	27	63	7.4	8		109
8.0	1.00	15	27	63	7.4	8		110
8.0	1.50	15	27	63	7.4	8		111
8.0	2.00	15	27	63	7.4	8		112
10.0	0.50	18	32	72	9.2	10		113
10.0	1.00	18	32	72	9.2	10		114
10.0	1.50	18	32	72	9.2	10		115
10.0	2.00	18	32	72	9.2	10		116
12.0	0.50	26	38	83	11.0	12		117
12.0	1.00	26	38	83	11.0	12		118
12.0	1.50	26	38	83	11.0	12		119
12.0	2.00	26	38	83	11.0	12		120
16.0	0.50	32	50	92	15.0	16		121
16.0	1.00	32	50	92	15.0	16		122
16.0	1.50	32	50	92	15.0	16		123
16.0	2.00	32	50	92	15.0	16		124

Long

d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h5) mm	16703	...
4.0	0.40	8	36	80	3.7	4		201
4.0	0.50	8	36	80	3.7	4		202
4.0	1.00	8	36	80	3.7	4		203
5.0	0.50	10	40	80	4.6	5		204
5.0	1.00	10	40	80	4.6	5		205
6.0	0.50	13	44	90	5.5	6		206
6.0	1.00	13	44	90	5.5	6		207
6.0	1.50	13	44	90	5.5	6		208
8.0	0.50	15	54	100	7.4	8		209
8.0	1.00	15	54	100	7.4	8		210
8.0	1.50	15	54	100	7.4	8		211
8.0	2.00	15	54	100	7.4	8		212
10.0	0.50	18	60	100	9.2	10		213
10.0	1.00	18	60	100	9.2	10		214
10.0	1.50	18	60	100	9.2	10		215
10.0	2.00	18	60	100	9.2	10		216
12.0	0.50	26	75	120	11.0	12		217
12.0	1.00	26	75	120	11.0	12		218
12.0	1.50	26	75	120	11.0	12		219
12.0	2.00	26	75	120	11.0	12		220
16.0	0.50	32	85	120	15.0	16		221
16.0	1.00	32	85	120	15.0	16		222
16.0	1.50	32	85	120	15.0	16		223
16.0	2.00	32	85	120	15.0	16		224

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Graphite
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140–340

16704 Solid carbide diamond radius cutter DC Ultra

VHM | Z 2 | ≈ 30° | DIN 6535 HA | Norm | Graphit | GFK

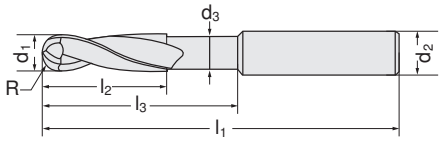
ATORN®

Design
- Solid carbide cutter with crystalline diamond coating (DiaDur)
- Special cemented carbide with excellent coating adhesion for the longest possible service life
- Shaft tolerance: h5
- Coating thickness: 10 + 2 µm
- Concentricity: 5 µm
- Radius accuracy: +/- 3 µm

Applications
For milling graphite, copper and GFRP materials.

16704 101-151

16704 152-161



d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h5) mm	16704 ...
0.2	0.10	0.2	1	55	0.18	4	**101**
0.3	0.15	0.3	1	55	0.27	4	**102**
0.3	0.15	0.3	3	55	0.27	4	**103**
0.3	0.15	0.3	5	55	0.27	4	**104**
0.3	0.15	0.3	8	55	0.27	4	**105**
0.4	0.20	0.4	4	55	0.35	4	**106**
0.4	0.20	0.4	6	55	0.35	4	**107**
0.4	0.20	0.4	8	55	0.35	4	**108**
0.5	0.25	0.5	5	55	0.45	4	**109**
0.5	0.25	0.5	10	55	0.45	4	**110**
0.6	0.30	0.6	6	55	0.56	4	**111**
0.6	0.30	0.6	9	55	0.56	4	**112**
0.6	0.30	0.6	12	55	0.56	4	**113**
0.7	0.35	0.7	7	55	0.65	4	**114**
0.7	0.35	0.7	14	55	0.65	4	**115**
0.8	0.40	0.8	8	55	0.75	4	**116**
0.8	0.40	0.8	12	55	0.75	4	**117**
0.8	0.40	0.8	16	55	0.75	4	**118**
1.0	0.50	1.0	5	55	0.90	4	**119**
1.0	0.50	1.0	10	55	0.90	4	**120**
1.0	0.50	1.0	15	55	0.90	4	**121**
1.0	0.50	1.0	20	55	0.90	4	**122**
1.0	0.50	1.0	25	55	0.90	4	**123**
1.0	0.50	1.0	30	55	0.90	4	**124**
1.2	0.60	1.2	5	55	1.10	4	**125**
1.2	0.60	1.2	10	55	1.10	4	**126**
1.2	0.60	1.2	15	55	1.10	4	**127**
1.5	0.75	1.5	5	55	1.40	4	**128**
1.5	0.75	1.5	10	55	1.40	4	**129**
1.5	0.75	1.5	15	55	1.40	4	**130**
1.5	0.75	1.5	20	55	1.40	4	**131**

d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h5) mm	16704 ...
1.5	0.75	1.5	25	55	1.40	4	**132**
1.8	0.90	1.8	10	55	1.70	4	**133**
1.8	0.90	1.8	20	55	1.70	4	**134**
2.0	1.00	2	10	55	1.90	4	**135**
2.0	1.00	2	15	55	1.90	4	**136**
2.0	1.00	2	20	55	1.90	4	**137**
2.0	1.00	2	25	65	1.90	4	**138**
2.0	1.00	2	30	65	1.90	4	**139**
3.0	1.50	3	10	65	2.90	4	**140**
3.0	1.50	3	15	65	2.90	4	**141**
3.0	1.50	3	20	65	2.90	4	**142**
3.0	1.50	3	25	75	2.90	4	**143**
3.0	1.50	3	30	75	2.90	4	**144**
4.0	2.00	4	20	65	3.90	6	**145**
4.0	2.00	4	30	75	3.90	6	**146**
4.0	2.00	4	40	90	3.90	6	**147**
5.0	2.50	5	20	65	4.90	6	**148**
5.0	2.50	5	30	75	4.90	6	**149**
5.0	2.50	5	40	90	4.90	6	**150**
5.0	2.50	5	50	90	4.90	6	**151**
6.0	3.00	6	30	75	5.90	6	**152**
6.0	3.00	6	40	90	5.90	6	**153**
6.0	3.00	6	50	90	5.90	6	**154**
6.0	3.00	6	60	100	5.90	6	**155**
8.0	4.00	8	30	80	7.80	8	**156**
8.0	4.00	8	60	100	7.80	8	**157**
10.0	5.00	10	30	80	9.80	10	**158**
10.0	5.00	10	60	100	9.80	10	**159**
12.0	6.00	12	30	80	11.80	12	**160**
12.0	6.00	12	60	100	11.80	12	**161**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Graphite
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140–340

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16705 Solid carbide diamond torus milling cutter DC Ultra

VHM | HSC | Z 2 | ≈ 30° | DIN 6535 HA | Norm | Graphit | GFK

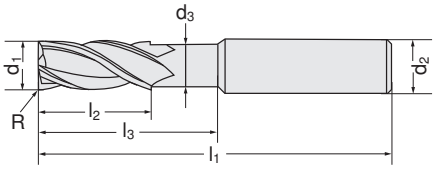
ATORN®

Design
- Solid carbide cutter with crystalline diamond coating
- Special cemented carbide with excellent coating adhesion for the longest possible service life
- Shaft tolerance: h5
- Coating thickness: 10 + 2 µm
- Concentricity: 5 µm
- Radius accuracy: +/- 3 µm

Applications
For milling graphite, copper and GFRP materials.

16705 201-257

16705 258-275



d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h5) mm	16705 ...
0.2	0.05	0.20	1	55	0.19	4	**201**
0.3	0.05	0.30	1	55	0.27	4	**202**
0.3	0.05	0.30	3	55	0.27	4	**203**
0.4	0.05	0.40	2	55	0.35	4	**204**
0.4	0.05	0.40	4	55	0.35	4	**205**
0.4	0.05	0.40	8	55	0.35	4	**206**
0.5	0.05	0.50	2	55	0.45	4	**207**
0.5	0.05	0.50	5	55	0.45	4	**208**
0.5	0.05	0.50	10	55	0.45	4	**209**
0.6	0.06	0.80	3	55	0.56	4	**210**
0.6	0.06	0.80	6	55	0.56	4	**211**
0.6	0.06	0.80	9	55	0.56	4	**212**
0.6	0.06	1.80	12	55	0.56	4	**213**
0.8	0.08	1.00	4	55	0.75	4	**214**
0.8	0.08	1.00	8	55	0.75	4	**215**
0.8	0.08	1.00	12	55	0.75	4	**216**
0.8	0.08	1.00	16	55	0.75	4	**217**
1.0	0.10	1.00	5	55	0.90	4	**218**
1.0	0.10	1.00	10	55	0.90	4	**219**
1.0	0.10	1.00	15	55	0.90	4	**220**
1.0	0.10	1.00	20	55	0.90	4	**221**
1.0	0.10	1.00	25	55	0.90	4	**222**
1.2	0.12	1.50	5	55	1.10	4	**223**
1.2	0.12	1.50	10	55	1.10	4	**224**
1.2	0.12	1.50	15	55	1.10	4	**225**
1.5	0.15	2.00	5	55	1.50	4	**226**
1.5	0.15	2.00	10	55	1.50	4	**227**
1.5	0.15	2.00	15	55	1.50	4	**228**
1.5	0.15	2.00	20	55	1.50	4	**229**
1.5	0.15	2.00	25	55	1.50	4	**230**
1.8	0.18	2.00	10	55	1.70	4	**231**
1.8	0.18	2.00	20	55	1.70	4	**232**
2.0	0.20	2.00	10	56	1.90	4	**233**
2.0	0.20	2.00	15	56	1.90	4	**234**
2.0	0.20	2.00	20	56	1.90	4	**235**
2.0	0.20	2.00	25	56	1.90	4	**236**
2.0	0.50	2.00	10	56	1.90	4	**237**
2.0	0.50	2.00	15	56	1.90	4	**238**

d_1 mm	R mm	l_2 mm	l_3 mm	l_1 mm	d_3 mm	d_2 (h5) mm	16705 ...
2.0	0.50	2.00	20	65	1.90	4	**239**
2.0	0.50	2.00	25	65	1.90	4	**240**
3.0	0.30	3.00	15	65	2.90	4	**241**
3.0	0.30	3.00	25	75	2.90	4	**242**
3.0	0.50	3.00	10	65	2.90	4	**243**
3.0	0.50	3.00	15	65	2.90	4	**244**
3.0	0.50	3.00	20	65	2.90	4	**245**
3.0	0.50	3.00	25	75	2.90	4	**246**
3.0	0.50	3.00	30	75	2.90	4	**247**
4.0	0.30	4.00	15	65	3.90	6	**248**
4.0	0.40	4.00	15	65	3.90	6	**249**
4.0	0.40	4.00	25	75	3.90	6	**250**
4.0	0.50	4.00	20	65	3.90	6	**251**
4.0	0.50	4.00	30	75	3.90	6	**252**
4.0	0.50	5.00	40	90	3.90	6	**253**
5.0	0.50	5.00	20	75	4.90	6	**254**
5.0	0.50	5.00	30	75	4.90	6	**255**
5.0	0.50	5.00	40	90	4.90	6	**256**
5.0	0.50	5.00	50	90	4.90	6	**257**
6.0	0.50	6.00	30	75	5.90	6	**258**
6.0	0.50	6.00	40	90	5.90	6	**259**
6.0	0.50	6.00	50	90	5.90	6	**260**
6.0	0.50	6.00	60	90	5.90	6	**261**
6.0	1.00	6.00	30	75	5.90	6	**262**
6.0	1.00	6.00	40	90	5.90	6	**263**
8.0	0.50	8.00	30	80	7.80	8	**264**
8.0	0.50	8.00	60	100	8.80	8	**265**
8.0	1.00	8.00	30	80	9.80	8	**266**
8.0	1.00	8.00	60	100	10.80	8	**267**
10.0	0.50	10.00	30	80	9.80	10	**268**
10.0	0.50	10.00	60	100	9.80	10	**269**
10.0	1.00	10.00	30	80	9.80	10	**270**
10.0	1.00	10.00	60	100	9.80	10	**271**
12.0	0.50	12.00	30	80	11.80	12	**272**
12.0	0.50	12.00	60	100	11.80	12	**273**
12.0	1.00	12.00	30	80	11.80	12	**274**
12.0	1.00	12.00	60	100	11.80	12	**275**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Graphite
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140–340

16909 Solid carbide HSC compression milling cutters

VHM | Norm | DIN 6535 HA | HSC | GFK CFK | Aramid | Faser Plast | NEW

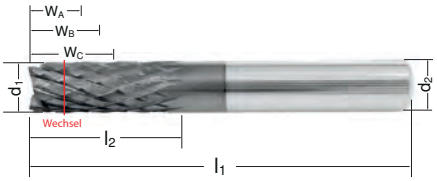
ATORN®

Design
- With opposing chip flutes
- With chip breaker and spiral from left to right
- Simultaneous drawing and pushing cut
- Finishing quality (Ra < 2 µm)

Advantage:
- Prevention of delamination

Applications
For machining fibre plastics as well as carbon and epoxy resin or polyester-based fibreglass.

Quality
Dia.HC-coated surface.



Alternating twist short

d_1 h10 mm	l_2 mm	l_1 mm	W_A mm	d_2 mm	16909 ...
6.0	13	57	4	6	**101**
8.0	19	63	6	8	**102**
10.0	22	72	7	10	**103**
12.0	26	83	8	12	**104**

16909 101-104

Alternating twist medium

d_1 h10 mm	l_2 mm	l_1 mm	W_B mm	d_2 mm	16909 ...
6.0	13	57	6.5	6	**105**
8.0	19	63	9.5	8	**106**
10.0	22	72	11	10	**107**
12.0	26	83	13	12	**108**

16909 105-108

Alternating twist long

d_1 h10 mm	l_2 mm	l_1 mm	W_C mm	d_2 mm	16909 ...
6.0	22	60	11	6	**109**
8.0	32	78	16	8	**110**
10.0	35	78	17.5	10	**111**
12.0	40	83	20	12	**112**

16909 109-112

Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	300–500	300–500	-	-	-	-

16911 VHM HSC end mill

VHM | Norm | DIN 6535 HA | HSC | GFK CFK | Aramid | Faser Plast | NEW

ATORN®

Design
- With large chip flutes and synchronous chip breaker
- Diamond-coated surface

Advantage:
- Continuous cutting with good chip removal

Applications
For machining fibre composite materials.

Quality
Dia.HC-coated surface.

Z5

16911 103-108

Helix W 0° — **5 cutting edges**

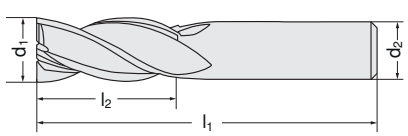
d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16911 ...
4.0	14	40	6	**103**
5.0	16	50	6	**104**
6.0	18	50	6	**105**
8.0	20	63	8	**106**
10.0	25	72	10	**107**
12.0	30	83	12	**108**

Z6

16911 111-118

Helix W 10° — **6 cutting edges**

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16911 ...
4.0	20	50	6	**111**
5.0	16	50	6	**112**
6.0	18	50	6	**113**
L 6.0	35	75	6	**114**
8.0	20	63	8	**115**
L 8.0	40	100	8	**116**
10.0	25	72	10	**117**
12.0	30	83	12	**118**



Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	100–150	100–200	90–140	-	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16912 - 16914 Solid carbide HSC end mill with spur cut

VHM poliert | Norm | DIN 6535 HA | HSC | GFK CFK | Aramid | Faser Plast

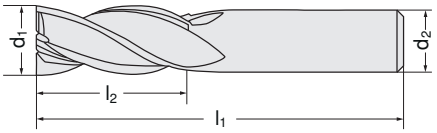
NEW

ATORN®

Design
- With pyramid cross-toothing with extremely sharp cutting edges
- Multi-tooth milling cutter face

Advantage:
- Can be used for a wide variety of materials

Applications
Fine: For machining fibre plastics with high fibre content
Medium: Soft fibre plastics with a tendency to stick
Coarse: Sandwich materials and foams



Fine toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16912 ...
4.0	15	40	4	105
5.0	16	50	5	107
6.0	18	50	6	109
8.0	25	63	8	111
10.0	30	72	10	113
12.0	32	83	12	114

16912

Medium toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16913 ...
4.0	15	40	4	105
5.0	16	50	5	107
6.0	18	50	6	109
8.0	25	63	8	111
10.0	30	72	10	113
12.0	32	83	12	114

16913

Coarse toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16914 ...
4.0	15	40	4	105
5.0	16	50	5	107
6.0	18	50	6	109
8.0	25	63	8	111
10.0	30	72	10	113
12.0	32	83	12	114

16914

Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	100–150	100–200	90–140	-	-	-

16915 Solid carbide HSC honeycomb cutter

VHM poliert | Norm | DIN 6535 HA | HSC | Honey Comb

NEW

ATORN®

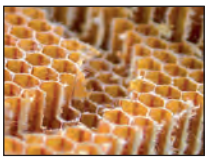
Design
- With special toothing for drawing cut
- Extremely sharp multi-flute toothing

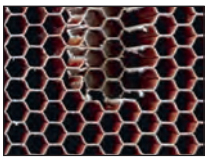
Advantage:
- Good surface for further machining

Applications
For machining honeycomb materials.

16915

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16915 ...
6.0	16	50	6	101
8.0	19	63	8	102
10.0	22	72	10	103
12.0	26	83	12	104
16.0	17	100	12	106
20.0	17	100	12	107





Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	-	-	-	-	-	350

16916 - 16921 Solid carbide HSC end mill with groove cutter tip

Z 2 | Norm | DIN 6535 HA | HSC | GFK CFK | Aramid | Faser Plast | NEW

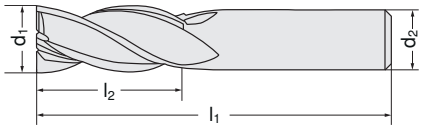
ATORN®

Design
- With pyramid cross-toothing with groove cutter tip for drilling, grooving and trimming
- Extremely sharp cutting edges

Advantage:
- Can be used for a wide variety of materials

Applications
Fine: For machining fibre plastics with high fibre content
Medium: soft fibre plastics with a tendency to stick
Coarse: Sandwich materials and foams

Quality
Surface polished or Dia.HC-coated.



Fine toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	Solid carbide 16916 ...	Solid carbide Dia.HC 16919 ...
4.0	15	40	4	105	105
5.0	16	50	5	107	107
6.0	18	50	6	109	109
L 6.0	35	75	6	110	110
8.0	25	63	8	111	111
L 8.0	40	100	8	112	112
10.0	30	72	10	113	113
12.0	32	83	12	114	114

VHM poliert — 16916

VHM — 16919

Medium toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	Solid carbide 16917 ...	Solid carbide Dia.HC 16920 ...
4.0	15	40	4	105	105
5.0	16	50	5	107	107
6.0	18	50	6	109	109
L 6.0	35	75	6	110	110
8.0	25	63	8	111	111
L 8.0	40	100	8	112	112
10.0	30	72	10	113	113
12.0	32	83	12	114	114

VHM poliert — 16917

VHM — 16920

Coarse toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	Solid carbide 16918 ...	Solid carbide Dia.HC 16921 ...
4.0	15	40	4	105	105
5.0	16	50	5	107	107
6.0	18	50	6	109	109
L 6.0	35	75	6	110	110
8.0	25	63	8	111	111
L 8.0	40	100	8	112	112
10.0	30	72	10	113	113
12.0	32	83	12	114	114

VHM poliert — 16918

VHM — 16921

Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	100–150	100–200	90–140	-	-	-

16925 Solid carbide HSC radius cutter

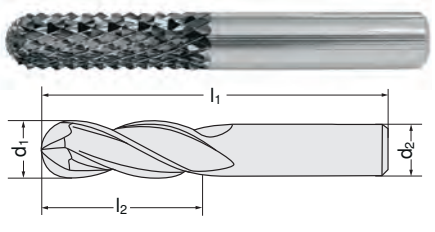
VHM | Norm | DIN 6535 HA | HSC | GFK CFK | Aramid | Faser Plast | NEW

ATORN®

Design
- With pyramid cross-toothing for drawing cut
- Extremely sharp toothing

Applications
For soft fibre plastics with a tendency to stick.
Face radius for copy machining.

16925



Medium toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	Solid carbide Dia.HC 16925 ...
4.0	15	40	4	103
6.0	18	50	6	107
8.0	25	63	8	109
L 8.0	40	100	8	110
10.0	30	72	10	111
12.0	32	83	12	112

Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	100–150	100–200	90–140	-	-	-

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16926 - 16928 Solid carbide HPC end mill with drill tip

VHM poliert | Norm | DIN 6535 HA | 135° | HSC

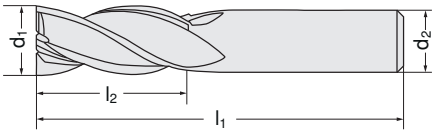
ATORN®

NEW | Honey Comb | GFK CFK | Aramid | Faser Plast

Design
- With pyramid cross-toothing with extremely sharp cutting edges
- With 135° drill tip for drilling and trimming

Advantage:
- Can be used for a wide variety of materials

Applications
Fine: For machining fibre plastics with high fibre content
Medium: Soft fibre plastics with a tendency to stick
Coarse: Sandwich materials and foams



Fine toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16926	...
4.0	15	40	4		105
5.0	16	50	5		107
6.0	18	50	6		109
8.0	25	63	8		111
10.0	30	72	10		113
12.0	32	83	12		114

16926

Medium toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16927	...
4.0	15	40	4		105
5.0	16	50	5		107
6.0	18	50	6		109
8.0	25	63	8		111
10.0	30	72	10		113
12.0	32	83	12		114

16927

Coarse toothing

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16928	...
4.0	15	40	4		105
5.0	16	50	5		107
6.0	18	50	6		109
8.0	25	63	8		111
10.0	30	72	10		113
12.0	32	83	12		114

16928

Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	100–150	100–200	90–140	-	-	-

16933 Solid carbide HSC cutter for aramid

VHM poliert | Norm | DIN 6535 HA | HSC

ATORN®

NEW | Aramid

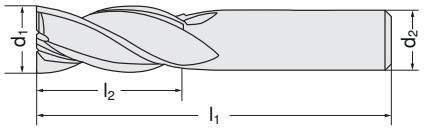
Design
- With opposing toothing
- Right cutting with right/left-hand spiral
- Extremely sharp cutting edges
- Shearing cut

Applications
For machining aramid.

Quality
Surface polished.

16933

d_1 h10 mm	l_2 mm	l_1 mm	d_2 mm	16933	...
6.0	20	50	6		101
8.0	22	63	8		102
10.0	25	72	10		103
12.0	30	83	12		104



Al<8%Si	Al>8%Si	Cu alloy	Duro	Thermo	GFRP	CFRP	Aramid	Composite ceramic	Faserplast	Honeycomb
-	-	-	-	-	-	-	100–130	-	-	-

16760 - 16780 Interchangeable head holder

ATORN®

Design
- Precision-ground mounts

Interchangeable head holder, short (steel)

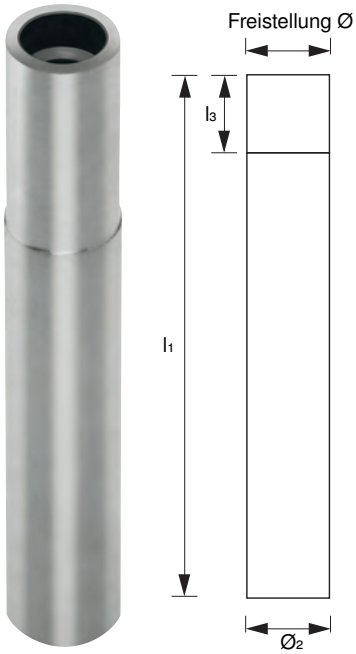
HPC | DIN 1835 B | h6

Size	$Ø_2$ mm	l_1 mm	Clearance Ø mm	l_3 mm	16760	...
20	10	65	9.6	5		102
30	12	75	11.6	5		103
40	16	80	15.4	6		104
50	20	90	19.2	6		105

Interchangeable head holder, long (steel)

DIN 1835 HA | h6

Size	$Ø_2$ mm	l_1 mm	Clearance Ø mm	l_3 mm	16760	...
20	10	75	9.6	18		202
30	12	85	11.6	21		203
40	16	95	15.4	23		204
50	20	110	19.2	28		205



Interchangeable head holder, extra long (solid carbide)

DIN 1835 HA | h6

Size	$Ø_2$ mm	l_1 mm	Clearance Ø mm	l_3 mm	16760	...
20	10	111	9.6	56		302
30	12	128	11.6	63		303
40	16	149	15.4	79		304
50	20	174	19.2	94		305

Interchangeable head holder, conical 5° (steel)

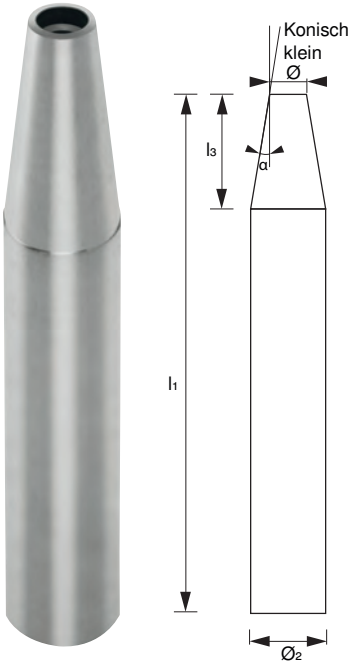
DIN 1835 HA | h6

Size	$Ø_2$ mm	l_1 mm	Ø conical small mm	l_3 mm	16761	...
20	16	105	9.6	36		102
30	20	120	11.6	48		103
40	20	135	15.4	26		104
50	25	150	19.2	33		105

Interchangeable head holder, conical 1° (steel)

DIN 1835 HA | h6

Size	$Ø_2$ mm	l_1 mm	Ø conical small mm	l_3 mm	16761	...
20	16	110	9.6	36		202
30	20	130	11.6	53		203
40	20	145	15.4	59		204
50	25	180	19.2	74		205



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= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

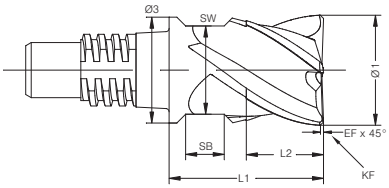
Continued

ATORN®

Design
- Solid carbide milling system for replaceable inserts
- High concentricity < 10 µm thanks to conical and flat face

Advantages:
- Guaranteed repetitive accuracy
- High stability and rigidity due to the pilot and the flat face
- Low-vibration
- Short set-up times

Solid carbide cutter 35/38°



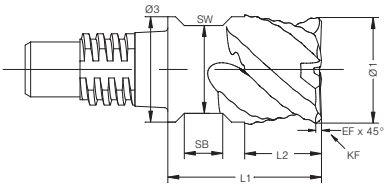
VHM TiAlN | HPC | Z 4 | 35°/38° | 45° | ≤ 1200 N/mm² | GG(G)

16763

Size	Ø$_1$ mm	l$_2$ mm	l$_1$ mm	Clearance mm	KF mm	SW x SB mm	Z	16763	...
20	10	7	14	9.6	0.3	8 x 3	4		102
30	12	9	17	11.6	0.3	10 x 4	4		103
40	16	12	21	15.4	0.4	13 x 5	4		104
50	20	15	26	19.2	0.5	16 x 5	4		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	190	170	150	130	130	110	-	-	-	-	75	-	-	170	-

Solid carbide roughing cutter type NRf



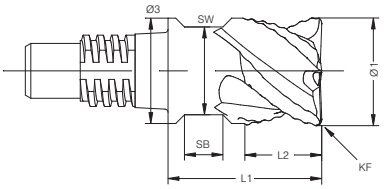
VHM AlTiN | MTC | Z 4-6 | ≈ 45° | 45° | ≤ 1200 N/mm² | VA

16764

Size	Ø$_1$ mm	l$_2$ mm	l$_1$ mm	Clearance mm	KF mm	SW x SB mm	Z	16764	...
20	10	7	14	9.6	0.2	8 x 3	4		102
30	12	9	17	11.6	0.2	10 x 4	4		103
40	16	12	21	15.4	0.25	13 x 5	5		104
50	20	15	26	19.2	0.25	16 x 5	6		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	190	190	180	125	120	110	-	-	-	-	90	90	-	160	-

Solid carbide roughing cutter type NR



VHM AlTiN | MTC | Z 4-5 | ≈ 45° | 45° | VA | Uni

16765

Size	Ø$_1$ mm	l$_2$ mm	l$_1$ mm	Clearance mm	KF mm	SW x SB mm	Z	16765	...
20	10	7	14	9.6	0.2	8 x 3	4		102
30	12	9	17	11.6	0.2	10 x 4	4		103
40	16	12	21	15.4	0.25	13 x 5	5		104
50	20	15	26	19.2	0.25	16 x 5	5		105

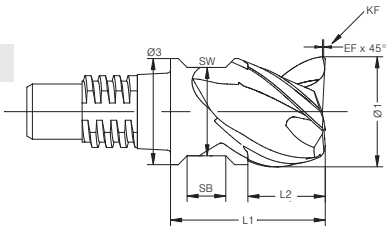
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	190	190	180	130	120	110	-	-	-	90	-	-	160	-

Continued

16760 - 16780 Interchangeable head milling system

Continued

Solid carbide aluminium cutter



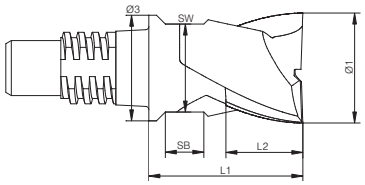
VHM ZrN | HPC | Z 3 | ≈ 45° | 45° | ALU

16766

Size	Ø1 mm	l2 mm	l1 mm	Clearance mm	KF mm	SW x SB mm	Z	16766	...
20	10	7	14	9.6	0.2	8 x 3	3		102
30	12	9	17	11.6	0.2	10 x 4	3		103
40	16	12	21	15.4	0.2	13 x 5	3		104
50	20	15	26	19.2	0.2	16 x 5	3		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400	250	160	450	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Solid carbide square end mill



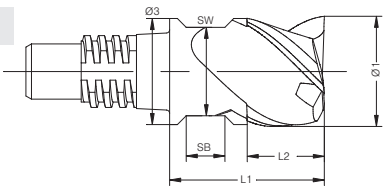
VHM TiAlN | Z 2 | ≈ 30° | 90° | Uni

16767

Size	Ø1 mm	l2 mm	l1 mm	Clearance mm	SW x SB mm	Z	16767	...
20	10	7	14	9.6	8 x 3	2		102
30	12	9	17	11.6	10 x 4	2		103
40	16	12	21	15.4	13 x 5	2		104
50	20	15	26	19.2	16 x 5	2		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
250	200	200	200	220	195	175	165	160	150	-	-	-	120	-	-	180	-

Solid carbide end mill



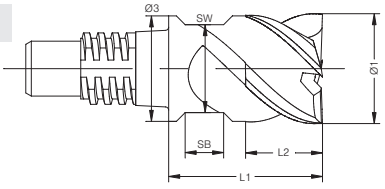
VHM TiAlN | Z 3 | ≈ 45° | 90° | Uni

16768

Size	Ø1 mm	l2 mm	l1 mm	Clearance mm	SW x SB mm	Z	16768	...
20	10	7	14	9.6	8 x 3	3		102
30	12	9	17	11.6	10 x 4	3		103
40	16	12	21	15.4	13 x 5	3		104
50	20	15	26	19.2	16 x 5	3		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
250	200	200	200	220	195	175	165	160	150	-	-	-	120	-	-	180	-

Solid carbide end mill



VHM TiAlN | Z 4 | ≈ 45° | 90° | Uni

16769

Size	Ø1 mm	l2 mm	l1 mm	Clearance mm	SW x SB mm	Z	16769	...
20	10	7	14	9.6	8 x 3	4		102
30	12	9	17	11.6	10 x 4	4		103
40	16	12	21	15.4	13 x 5	4		104
50	20	15	26	19.2	16 x 5	4		105

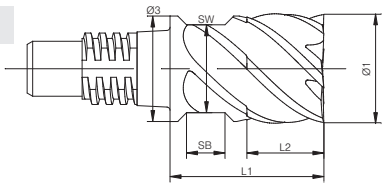
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
250	200	200	200	220	195	175	165	160	150	-	-	-	120	-	-	180	-

Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Continued

Solid carbide finishing cutters



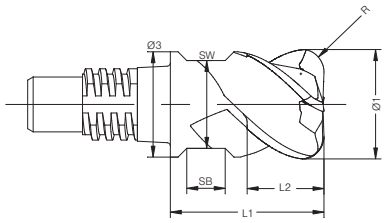
VHM TiAlN | Z 6–8 | ≈ 45° | Uni

16770

Size	Ø1 mm	l2 mm	l1 mm	Clearance mm	SW x SB mm	Z	16770	...
20	10	7	14	9.6	8 x 3	6		102
30	12	9	17	11.6	10 x 4	6		103
40	16	12	21	15.4	13 x 5	6		104
50	20	15	26	19.2	16 x 5	8		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	200	220	195	175	165	160	150	-	-	-	-	120	-	-	180	-

Solid carbide torus milling cutters



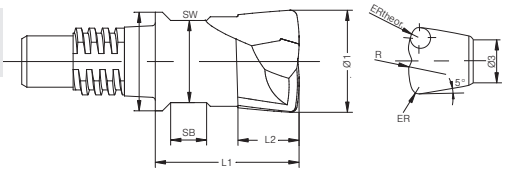
naco blue | HPC | HSC | Z 4 | ≈ 45° | Trocken-bearbeitung | ≤ 1400 N/mm² | 60 HRC

16771

Size	Ø1 x R mm	l2 mm	l1 mm	Clearance mm	SW x SB mm	Z	16771	...
20	10 x 0.5	7	14	9.6	8 x 3	4		106
20	10 x 1.0	7	14	9.6	8 x 3	4		107
20	10 x 1.5	7	14	9.6	8 x 3	4		108
20	10 x 2.0	7	14	9.6	8 x 3	4		109
30	12 x 0.5	9	17	11.6	10 x 4	4		110
30	12 x 1.0	9	17	11.6	10 x 4	4		111
30	12 x 1.5	9	17	11.6	10 x 4	4		112
30	12 x 2.0	9	17	11.6	10 x 4	4		113
40	16 x 0.5	12	21	15.4	13 x 5	4		114
40	16 x 1.0	12	21	15.4	13 x 5	4		115
40	16 x 1.5	12	21	15.4	13 x 5	4		116
40	16 x 2.0	12	21	15.4	13 x 5	4		117
50	20 x 1.0	15	26	19.2	16 x 5	4		118

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
HPC																	
-	-	-	195	185	180	150	140	130	-	-	-	-	-	-	-	-	-
HSC																	
-	-	-	350	330	320	270	250	230	-	-	-	-	-	-	-	-	-

Solid carbide high-feed milling cutter



VHM AlTiN | HSC | Z 2 | ≈ 15° | Trocken-bearbeitung | ≤ 1400 N/mm² | 60 HRC

16772

Size	Ø1 mm	l2 mm	l1 mm	Clearance mm	ER mm	R mm	ERtheor. mm	SW x SB mm	Z	16772	...
20	10	7	14	9.6	0.64	15	0.9	8 x 3	2		102
30	12	9	17	11.6	0.75	15	1.1	10 x 4	2		103
40	16	12	21	15.4	1.06	25	1.45	13 x 5	2		104
50	20	15	26	19.2	1.25	50	1.65	16 x 5	2		105

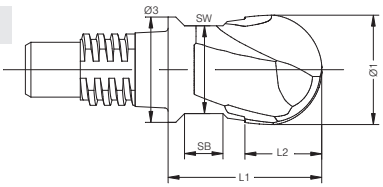
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	200	180	150	130	125	120	95	90	70	-	-	-	-	-	-

Continued

16760 - 16780 Interchangeable head milling system

Continued

Solid carbide radius cutter



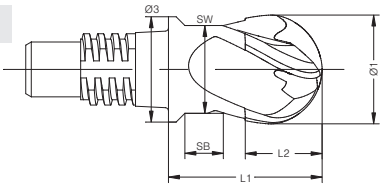
naco blue | HPC | HSC | Z 2 | ≈ 30° | Trocken-bearbeitung | V 1400 N/mm² | 60 HRC

16773

Size	Ø$_1$ mm	l$_2$ mm	l$_1$ mm	Clearance mm	SW x SB mm	Z	16773	...
20	10	7	14	9.6	8 x 3	2		102
30	12	9	17	11.6	10 x 4	2		103
40	16	12	21	15.4	13 x 5	2		104
50	20	15	26	19.2	16 x 5	2		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	570	450	350	300	270	240	180	160	150	-	-	-	-	-	-

Solid carbide full radius cutter



VHM TiAlN | Z 4 | ≈ 30° | Uni

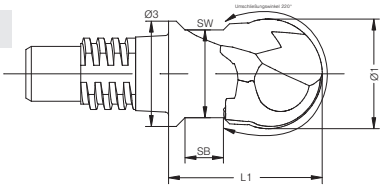
16774

Size	Ø$_1$ mm	l$_2$ mm	l$_1$ mm	Clearance mm	SW x SB mm	Z	16774	...
20	10	7	14	9.6	8 x 3	4		102
30	12	9	17	11.6	10 x 4	4		103
40	16	12	21	15.4	13 x 5	4		104
50	20	15	26	19.2	16 x 5	4		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	200	220	195	175	165	160	150	-	-	-	-	120	-	-	180	-

Solid carbide ball head cutter

Design
- Enclosing angle 220°



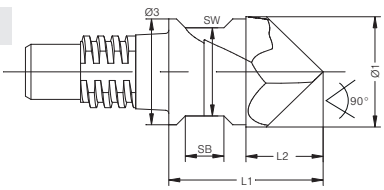
VHM AlTiN | HSC | Z 2 | ≈ 15° | Trocken-bearbeitung | V 1400 N/mm² | 60 HRC

16775

Size	Ø$_1$ mm	l$_2$ mm	l$_1$ mm	Clearance mm	SW x SB mm	Z	16775	...
20	10	7	14	9.6	8 x 3	2		102
30	12	9	17	11.6	10 x 4	2		103
40	16	12	21	15.4	13 x 5	2		104
50	20	15	26	19.2	16 x 5	2		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	450	350	300	250	210	170	120	90	70	-	-	-	-	-	-

Solid carbide multi-mill



VHM TiAlN | Z 2 | ≈ 30° | 90° | Uni

16776

Size	Ø$_1$ mm	l$_2$ mm	l$_1$ mm	Clearance mm	SW x SB mm	Z	16776	...
20	10	7	14	9.6	8 x 3	2		102
30	12	9	17	11.6	10 x 4	2		103
40	16	12	21	15.4	13 x 5	2		104
50	20	15	26	19.2	16 x 5	2		105

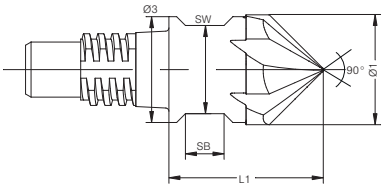
Continued

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300	280	200	120	105	90	75	70	65	-	-	-	-	80	-	-	120	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Continued

Solid carbide deburring tool



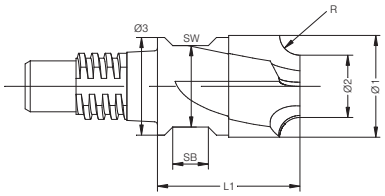
VHM TiAlN | Z 6 | 90° | Uni

16777

Size	$Ø_1$ mm	l_2 mm	l_1 mm	Clearance mm	SW x SB mm	Z	16777	...
20	10	7	14	9.6	8 x 3	6		102
30	12	9	17	11.6	10 x 4	6		103
40	16	12	21	15.4	13 x 5	6		104
50	20	15	26	19.2	16 x 5	6		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300	280	300	190	170	160	150	130	120	-	-	-	-	110	75	-	-	-

Solid carbide quarter circle cutter



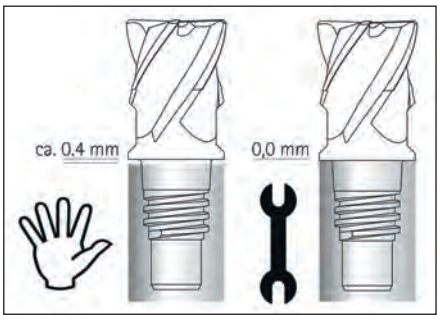
VHM TiAlN | Z 4 | 90° | Uni

16778

Size	$Ø_1$ x R mm	l_2 mm	l_1 mm	Clearance mm	SW x SB mm	Z	16778	...
20	10 x 1.5	7	14	9.6	8 x 3	4		103
20	10 x 2.0	7	14	9.6	8 x 3	4		104
30	12 x 2.5	9	17	11.6	10 x 4	4		105
30	12 x 3.0	9	17	11.6	10 x 4	4		106
40	16 x 3.5	12	21	15.4	13 x 5	4		107
40	16 x 4.0	12	21	15.4	13 x 5	4		108
40	16 x 4.5	12	21	15.4	13 x 5	4		109
50	20 x 5.0	15	26	19.2	13 x 5	4		110
50	20 x 6.0	15	26	19.2	16 x 5	4		111

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<50HRC	<55HRC	<60HRC	<65HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300	280	300	190	170	160	150	130	120	-	-	-	-	110	75	-	-	-

Installation instructions:
- Clean the interface on the milling head and on the tool holder
- Screw the milling head clockwise and hand-tighten into the interchangeable head holder (note: Caution risk of injury — use cut protection gloves when installing)
- Tighten the milling head with the torque wrench and the specified torques (see table) form-fit.



Single open-end wrench

Plug-in tool

Torque wrench

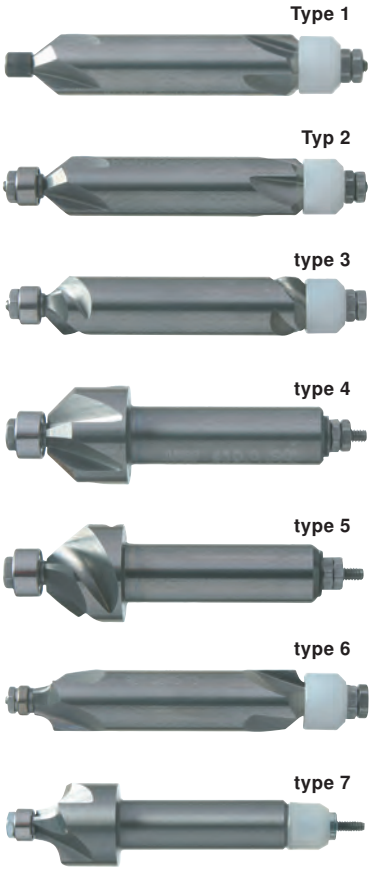
Size mm	SW mm	Torque Nm	16779	...	16780	...	55780	...
20	8	13		102		102		202
30	10	25		103		103		202
40	13	30		104		104		202
50	16	40		105		105		202

16750 Solid carbide form milling cutter

Design
- Double-edged (art. no. 16750 139-152 single-edged)
- Clamping shank 6 mm
- Start-up pin hardened

Applications
For edge and contour deburring tools.
Chip angle 0° for short-chipping, hard materials.
Chip angle 6° for tough materials.
Chip angle 12° for tough to soft materials.
Chip angle 30° for soft materials.

Quality
Universal carbide ultra-fine grain.



Type	Applications/Design	D x L mm	Tip angle/ Radius	Z	Chip angle	Coating	16750	...
1	with rotating start-up pin (Ø 2.5 mm)	6 x 34	90°	4	0°	TiAlN		102
2	with ball bearing start roller (Ø 3.0 mm)	6 x 34	90°	4	0°	–		103
2	with ball bearing start roller (Ø 4.0 mm)	6 x 34	90°	4	0°	TiAlN		106
2	with ball bearing start roller (Ø 4.0 mm)	6 x 34	90°	6	0°	–		111
2	with ball bearing start roller (Ø 4.0 mm)	6 x 34	90°	6	0°	TiAlN		112
1	with rotating start-up pin (Ø 2.5 mm)	6 x 34	90°	4	6°	TiAlN		114
2	with ball bearing start roller (Ø 3.0 mm)	6 x 34	90°	4	6°	TiAlN		116
2	with ball bearing start roller (Ø 4.0 mm)	6 x 34	90°	4	6°	–		117
2	with ball bearing start roller (Ø 3.0 mm)	6 x 34	90°	4	12°	–		122
2	with ball bearing start roller (Ø 4.0 mm)	6 x 34	90°	4	12°	–		125
3	with rotating start-up pin (Ø 2.5 mm)	6 x 34	90°	3	30°	TiAlN-ALU		130
3	with ball bearing start roller (Ø 3.0 mm)	6 x 34	90°	3	30°	–		131
3	with ball bearing start roller (Ø 4.0 mm)	6 x 34	90°	3	30°	–		134
4	with ball bearing start roller (Ø 4.0 mm)	10 x 34	90°	6	0°	–		137
4	with ball bearing start roller (Ø 5.0 mm)	10 x 34	90°	6	0°	–		139
4	with ball bearing start roller (Ø 5.0 mm)	10 x 34	90°	6	0°	TiAlN		140
4	with ball bearing start roller (Ø 4.0 mm)	10 x 34	90°	3	6°	–		141
4	with ball bearing start roller (Ø 5.0 mm)	10 x 34	90°	3	6°	TiAlN		144
5	with ball bearing start roller (Ø 4.0 mm)	10 x 34	90°	3	30°	–		145
6	with ball bearing start roller (Ø 3.0 mm)	6 x 34	R 0.5 mm	3	0°	-		151
6	with ball bearing start roller (Ø 3.0 mm)	6 x 34	R 1.0 mm	3	0°	-		152
6	with ball bearing start roller (Ø 3.0 mm)	6 x 34	R 1.5 mm	3	0°	-		153
7	with ball bearing start roller (Ø 4.0 mm)	10 x 34	R 2.0 mm	3	0°	-		154
7	with ball bearing start roller (Ø 4.0 mm)	10 x 34	R 2.5 mm	3	0°	-		155
7	with ball bearing start roller (Ø 4.0 mm)	10 x 34	R 3.0 mm	3	0°	-		156
7	with ball bearing start roller (Ø 4.0 mm)	10 x 34	R 3.0 mm	3	0°	-		156

Recommendations for the use of solid carbide form milling cutter art. no. 16750 ++ Ideal + Limited suitability

Type	MILLING CUTTER	Steel: Hardened steels	Steel: Tool steels	Steel: Case-hardening steels, Heat-treated steels	Steel: Carbon steel (short-chipping)	Copper alloys/ cast iron: Copper, soft brass, soft	Copper alloys/ cast iron: Nickel-brass, hard Bronze	Copper alloys/ cast iron: Cast iron	Stainless steel: Soft, tough varieties	Stainless steel: High-strength, brittle varieties	Stainless steel: Carbon alloy (short-chipping)	Aluminium: Soft, long-chipping	Aluminium: Carbon alloy (short-chipping)	Plastics: Soft, long-chipping	Plastics: Hard, short-chipping
1	16750 102	++	++		++		++	++							
2	16750 103				++		++	+					++		++
2	16750 106	++	++		++		++	++							
2	16750 111				++		++	+					+		++
2	16750 112	++	++		++		++	++							
1	16750 114			++	++		++			++	++				
2	16750 116			++	++		++			++	++				
2	16750 117				++		++				++		++		++
2	16750 122				++	+	++		+		+	+	++	+	++
2	16750 125				++	+	++		+		+	+		+	++
3	16750 130					++						++	++	++	++
3	16750 131					++			+			++	++	++	++
3	16750 134					++			+			++	++	++	++
4	16750 137				++		++	+					+		
4	16750 139				++		++	+					+		
4	16750 140	++	+		++		++	++							
4	16750 141				++		++		+		+	+	++	+	++
4	16750 144			++	++		++		++		++				
5	16750 145					++			+			++	++	++	++
6	16750 151	+	++	++	++	++	++	++	+	++	++	++	++	++	++
6	16750 152	+	++	++	++	++	++	++	+	++	++	++	++	++	++
6	16750 153		+	++	++	++	++	++	+	++	++	++	++	++	++
7	16750 154		+	++	++	++	++	++	+	++	++	++	++	++	++
7	16750 155		+	+	++	++	++	++	+	++	++	+	++	++	++
7	16750 156		+	+	++	++	++	++	+	+	++	+	++	++	++

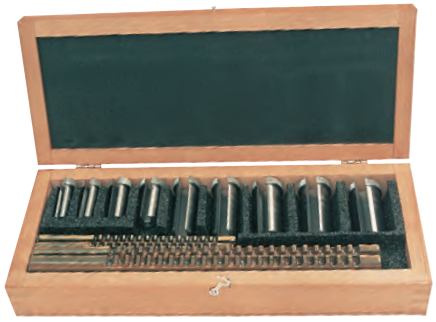
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

16880 Push-type broach (keyways broach) sets

Design
Chip angle 8–10°.
Each broach **complete with inserts**
(e.g. for 3 strokes = 2 inserts).
Delivered in wooden case.
Applications
For the production of **keyways in accordance with DIN 6885.** For cast iron, steel, brass and aluminium. Use especially on manually operated arbor presses. Short sweeping time (60 seconds), low set-up time and easy handling. Clear specification of a groove for hole and the groove depth through the guide bush and inserts.

Quality
HSS.

16880



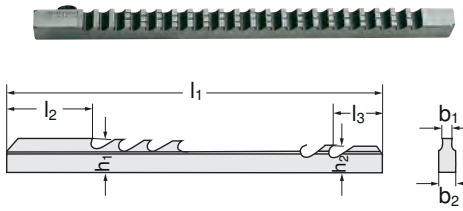
Set size	Broaches	Guide bush Ø (d_1) mm	for holes Ø mm	Sweeping length mm	16880	...
210	2 pcs. RD I (b_1 = 2/3 mm)	6/ 7/8/9/10	6–10	6–30		101
218	2 pcs. RD II (b_1 = 4/5 mm)	12/14/15/ 16	12–28	8–43		202
	2 pcs. RD III (b_1 = 6/8 mm)	18/20/22/24/25		10–64		
240	2 pcs. RD I (b_1 = 2/3 mm)	8/10	8–36	6–30		203
	2 pcs. RD II (b_1 = 4/5 mm)	12/14/15/16		8–43		
	2 pcs. RD III (b_1 = 6/8 mm)	18/20/22/24/25/28/30		10–64		
224	3 pcs. RD IV (b_1 = 10 / 12/14 mm)	32/35/38/40/42/45/50	34–48	20–150		204
212	2 pcs. RD V (b_1 = 16/18 mm)	52/55/58/60/65	54–64	20–150		205

16881 Push-type broach (keyways broaches)

Design
Chip angle 8–10°.
Each broach **complete with inserts**
(e.g. for 3 strokes = 2 inserts).
Art. no. 16881 101 without insert.
Delivery without guide bushes
(see art. no. 16882).
Applications
For the production of **keyways in accordance with DIN 6885.** For cast iron, steel, brass and aluminium. Use especially on manually operated arbor presses. Short sweeping time (60 seconds), low set-up time and easy handling. Clear specification of a groove for hole and the groove depth through the guide bush and inserts.

Quality
HSS.

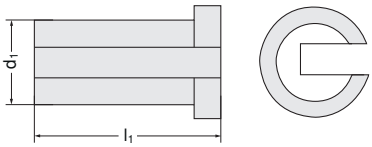
16881



Type	b_1 mm	b_2 mm	l_1 mm	l_2 mm	l_3 mm	h_1 mm	h_2 mm	Groove depth mm	for holes Ø mm	Sweeping length mm	Number of strokes	Tolerance mm	16881	...
RD I	2	3.18	133	32	15	6.18	5.00	1.10	6–8	6–30	1	+/-0.011		101
RD I	3	3.18	133	32	15	5.75	4.85	1.50	8–10	6–30	2	+/-0.012		102
RD II	4	6.35	178	48	23	9.90	8.77	1.90	10–12	8–43	2	+/-0.015		103
RD II	5	6.35	178	49	22	10.03	8.59	2.40	12–17	8–43	2	+/-0.015		104
RD III	5	9.53	302	65	23	16.39	14.95	2.40	17–22	10–64	2	+/-0.015		105
RD III	6	9.53	302	65	26	16.55	14.87	2.90	17–22	10–64	2	+/-0.015		106
RD III	8	9.53	302	65	23	16.64	14.55	3.50	22–30	10–64	2	+/-0.018		107
RD IV	10	14.29	352	65	33	23.99	22.29	3.50	30–38	20–150	3	+/-0.018		108
RD IV	12	14.29	352	65	35	23.74	22.05	3.50	38–44	20–150	3	+/-0.021		109
RD IV	14	14.29	352	65	33	23.69	21.71	4.00	44–50	20–150	3	+/-0.021		110
RD V	16	19.05	387	48	40	24.24	22.47	4.50	50–58	20–150	4	+/-0.021		111
RD V	18	19.05	387	48	41	24.06	22.22	4.60	58–65	20–150	4	+/-0.021		112
RD VI	20	25.4	489	65	39	31.80	30.11	5.10	65–75	20–150	5	+/-0.026		113
RD VI	22	25.4	489	65	39	31.54	29.99	5.60	75–85	20–150	5	+/-0.026		114
RD VI	24	25.4	489	65	37	31.17	29.66	5.60	85 - 95	20–150	5	+/-0.026		115
RD VI	25	25.4	489	65	39	30.98	29.46	5.60	85 - 95	20–150	5	+/-0.026		116

16882 Guide bushes

Design
Bore tolerance H 7.
Up to RD III 36 x 65 mm with collar.
Applications
For push-type broaches (keyways broaches) art. no. 16881.



16882

For type	d_1 x l_1 mm	16882 ...
RD I	6 x 32	101
RD I	7 x 32	102
RD I	8 x 32	103
RD I	9 x 32	104
RD I	10 x 32	105
RD II	11 x 46	110
RD II	12 x 46	111
RD II	13 x 46	112
RD II	14 x 46	113
RD II	15 x 46	114
RD II	16 x 46	115
RD II	17 x 46	116
RD II	18 x 46	117
RD II	19 x 46	118
RD III	17 x 65	130
RD III	18 x 65	131
RD III	19 x 65	132
RD III	20 x 65	133
RD III	22 x 65	135
RD III	24 x 65	137

For type	d_1 x l_1 mm	16882 ...
RD III	25 x 65	138
RD III	26 x 65	139
RD III	27 x 65	140
RD III	28 x 65	141
RD III	30 x 65	142
RD III	32 x 65	143
RD III	34 x 65	144
RD III	35 x 65	145
RD III	36 x 65	146
RD IV	32 x 102	150
RD IV	34 x 102	151
RD IV	35 x 102	152
RD IV	36 x 102	153
RD IV	38 x 102	154
RD IV	40 x 102	155
RD IV	42 x 102	156
RD IV	44 x 102	157
RD IV	45 x 127	158
RD IV	46 x 127	159
RD IV	48 x 127	160

For type	d_1 x l_1 mm	16882 ...
RD IV	50 x 127	161
RD IV	52 x 127	162
RD IV	54 x 127	163
RD IV	55 x 127	164
RD IV	56 x 127	165
RD V	52 x 127	175
RD V	54 x 127	176
RD V	55 x 127	177
RD V	56 x 127	178
RD V	58 x 127	179
RD V	60 x 154	180
RD V	62 x 154	181
RD V	64 x 154	182
RD V	65 x 154	183
RD V	66 x 154	184
RD V	68 x 154	185
RD V	70 x 154	186
RD V	72 x 154	187
RD VI	70 x 154	193

16883 Replacement inserts for push-type broaches

Applications
For push-type broaches (keyways broaches) art. no. 16881.

16883

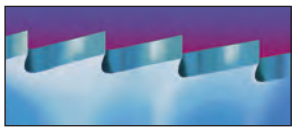
Size mm	Thickness mm	For type	16883 ...
3	0.787	I	101
4	0.965	II	102
5	1.270	II	103
5	1.194	III	104
6	1.575	III	105

Size mm	Thickness mm	For type	16883 ...
8	1.981	III	106
10	1.422	IV	107
12	1.422	IV	108
14	1.575	IV	109
16	1.575	V	110

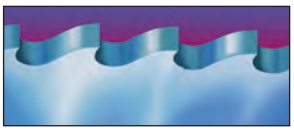
Size 16883	Thickness mm	For type mm	...
18	1.575	V	111
20	1.575	VI	112
22	1.575	VI	113
24	1.575	VI	114
25	1.575	VI	115

Info

17002 - 17051 tooth shapes (DIN 1840) of metal circular saw blades

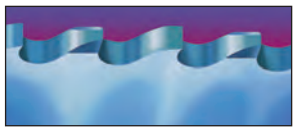


Tooth shape A
Fine-toothed



Tooth shape B
Coarse-toothed

Tooth shape BW
Coarse-toothed, alternate bevel



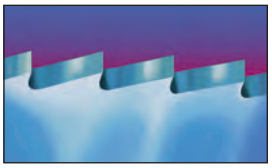
Tooth shape C
High-performance toothing (HZ) with pre- and post-cutting edge

17002 Metal circular saw blades, DIN 1837 A

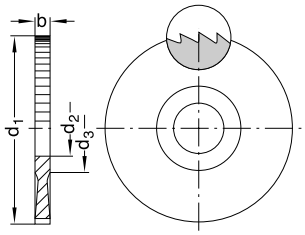
HSS

Design
Tooth shape A, DIN 1840, fine-toothed, hollow ground.
Applications
Low tooth pitches with small chip pockets for shallow cuts and thin-walled workpieces (1–5 mm) only. Particularly suitable for processing brittle, short-chipping materials.
Quality
HSS.

Note:
For saw blade holders see art. no. 21636.



Tooth shape A



17002

d_1 x b x d_2 mm	No. of teeth	17002 ...
20 x 0.20 x 5	80	101
20 x 0.25 x 5	64	102
20 x 0.30 x 5	64	103
20 x 0.40 x 5	64	104
20 x 0.50 x 5	48	105
20 x 0.60 x 5	48	106
20 x 0.80 x 5	48	107
20 x 1.00 x 5	40	108
20 x 1.20 x 5	40	109
20 x 1.60 x 5	40	110
20 x 2.00 x 5	32	111
20 x 3.00 x 5	32	113
25 x 0.20 x 8	80	117
25 x 0.25 x 8	80	118
25 x 0.30 x 8	80	119
25 x 0.40 x 8	64	120
25 x 0.50 x 8	64	121
25 x 1.00 x 8	48	124
25 x 1.20 x 8	48	125
25 x 1.60 x 8	40	126
25 x 2.00 x 8	40	127
25 x 2.50 x 8	40	128
25 x 3.00 x 8	32	129
32 x 0.20 x 8	100	133
32 x 0.25 x 8	100	134
32 x 0.30 x 8	80	135
32 x 0.40 x 8	80	136
32 x 0.50 x 8	80	137
32 x 0.60 x 8	64	138
32 x 0.80 x 8	64	139
32 x 1.00 x 8	64	140
32 x 1.20 x 8	48	141
32 x 1.60 x 8	48	142
32 x 2.00 x 8	48	143
32 x 2.50 x 8	40	144
32 x 3.00 x 8	40	145
40 x 0.20 x 10	128	149
40 x 0.25 x 10	100	150

d_1 x b x d_2 mm	No. of teeth	17002 ...
40 x 0.30 x 10	100	151
40 x 0.40 x 10	100	152
40 x 0.50 x 10	80	153
40 x 0.60 x 10	80	154
40 x 0.80 x 10	80	155
40 x 1.00 x 10	64	156
40 x 1.20 x 10	64	157
40 x 1.60 x 10	64	158
40 x 2.00 x 10	48	159
40 x 2.50 x 10	48	160
40 x 3.00 x 10	48	161
50 x 0.20 x 13	128	165
50 x 0.25 x 13	128	166
50 x 0.30 x 13	128	167
50 x 0.40 x 13	100	168
50 x 0.50 x 13	100	169
50 x 0.60 x 13	100	170
50 x 0.80 x 13	80	171
50 x 1.00 x 13	80	172
50 x 1.20 x 13	80	173
50 x 1.60 x 13	64	174
50 x 2.00 x 13	64	175
50 x 2.50 x 13	64	176
50 x 3.00 x 13	48	177
63 x 0.30 x 16	128	183
63 x 0.40 x 16	128	184
63 x 0.50 x 16	128	185
63 x 0.80 x 16	100	187
63 x 1.00 x 16	100	188
63 x 1.20 x 16	80	189
63 x 1.60 x 16	80	190
63 x 2.00 x 16	80	191
63 x 2.50 x 16	64	192
63 x 3.00 x 16	64	193
63 x 4.00 x 16	64	194
63 x 6.00 x 16	48	196
80 x 0.30 x 22	160	199
80 x 0.40 x 22	160	200

d_1 x b x d_2 mm	No. of teeth	17002 ...
80 x 0.50 x 22	128	201
80 x 0.80 x 22	128	203
80 x 1.00 x 22	100	204
80 x 1.20 x 22	100	205
80 x 1.60 x 22	100	206
80 x 2.00 x 22	80	207
80 x 2.50 x 22	80	208
80 x 3.00 x 22	80	209
80 x 4.00 x 22	64	210
80 x 6.00 x 22	64	212
100 x 0.50 x 22	160	217
100 x 0.80 x 22	128	219
100 x 1.00 x 22	128	220
100 x 1.20 x 22	128	221
100 x 1.60 x 22	100	222
100 x 2.00 x 22	100	223
100 x 2.50 x 22	100	224
100 x 3.00 x 22	80	225
100 x 4.00 x 22	80	226
100 x 6.00 x 22	64	228
125 x 0.60 x 22	160	234
125 x 0.80 x 22	160	235
125 x 1.00 x 22	160	236
125 x 1.20 x 22	128	237
125 x 1.60 x 22	128	238
125 x 2.00 x 22	128	239
125 x 2.50 x 22	100	240
125 x 3.00 x 22	100	241
125 x 4.00 x 22	100	242
125 x 6.00 x 22	80	244
160 x 1.00 x 32	160	252
160 x 1.20 x 32	160	253
160 x 1.60 x 32	160	254
160 x 2.00 x 32	128	255
160 x 2.50 x 32	128	256
160 x 3.00 x 32	128	257
160 x 4.00 x 32	100	258

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	45–50	40–45	35–40	30–35	25–30	-	-	-	-	-	25–30	20–25	-	25–40	-

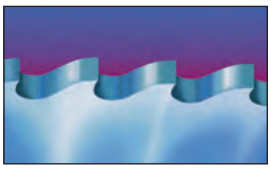
( ) = Items with prices in brackets partly available from stock.

17005 Metal circular saw blades, DIN 1838 B

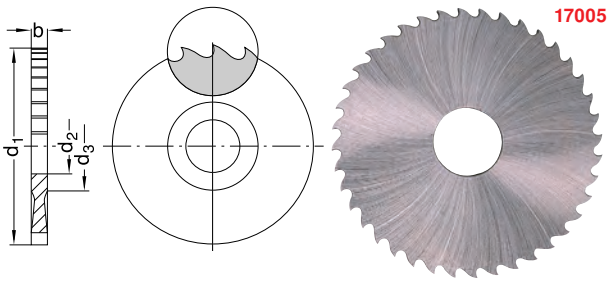
HSS

Design
Tooth shape B, DIN 1840, coarse-toothed, hollow ground.
Applications
For medium and deep cuts in thicker workpieces (3 mm and above); larger, well-designed chip pockets enable universal use.
Quality
HSS.

Note:
For saw blade holders see art. no. 21636.



Tooth shape B



17005

d_1 x b x d_2 mm	No. of teeth	17005	...
50 x 1.0 x 13	40		101
50 x 1.2 x 13	40		102
50 x 1.6 x 13	32		103
50 x 2.0 x 13	32		104
50 x 3.0 x 13	24		106
50 x 4.0 x 13	24		107
63 x 1.0 x 16	48		110
63 x 1.2 x 16	40		111
63 x 1.6 x 16	40		112
63 x 2.0 x 16	40		113
63 x 3.0 x 16	32		115
63 x 4.0 x 16	32		116
63 x 5.0 x 16	24		117
63 x 6.0 x 16	24		118
80 x 1.0 x 22	48		119
80 x 1.2 x 22	48		120
80 x 1.6 x 22	48		121
80 x 2.0 x 22	40		122

d_1 x b x d_2 mm	No. of teeth	17005	...
80 x 3.0 x 22	40		124
80 x 4.0 x 22	32		125
80 x 5.0 x 22	32		126
80 x 6.0 x 22	32		127
100 x 1.0 x 22	64		128
100 x 1.2 x 22	64		129
100 x 1.6 x 22	48		130
100 x 2.0 x 22	48		131
100 x 3.0 x 22	40		133
100 x 4.0 x 22	40		134
100 x 5.0 x 22	40		135
100 x 6.0 x 22	32		136
125 x 1.0 x 22	80		137
125 x 1.2 x 22	64		138
125 x 1.6 x 22	64		139
125 x 2.0 x 22	64		140
125 x 3.0 x 22	48		142
125 x 4.0 x 22	48		143

d_1 x b x d_2 mm	No. of teeth	17005	...
125 x 5.0 x 22	40		144
160 x 1.0 x 32	80		146
160 x 1.6 x 32	80		148
160 x 2.0 x 32	64		149
160 x 3.0 x 32	64		151
160 x 4.0 x 32	48		152
160 x 5.0 x 32	48		153
200 x 1.0 x 32	100		155
200 x 1.6 x 32	80		157
200 x 2.0 x 32	80		158
200 x 3.0 x 32	64		160
200 x 4.0 x 32	64		161
200 x 5.0 x 32	64		162
250 x 1.6 x 32	100	)	166
250 x 2.0 x 32	100		167
250 x 3.0 x 32	80		169
250 x 4.0 x 32	80		170
250 x 5.0 x 32	64		171

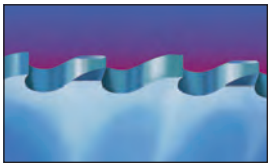
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–140	50–80	30–50	32–35	28–32	25–30	25–28	20–25	15–20	-	-	-	-	25–30	20–25	-	25–40	60–100

17008 Metal circular saw blades, DIN 1838 C

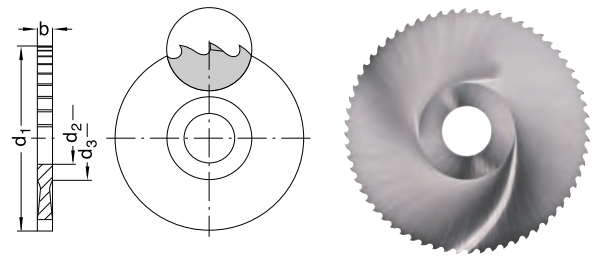
HSS

Design
Tooth shape C, DIN 1840, hollow ground, high-performance toothing (HZ) with pre- and post-cutters. Depending on the tooth pitch, the pre-cutters are up to 0.3 mm higher than the post-cutters and thus only suitable for continuous cuts, otherwise a step is formed at the bottom of the cut by the pre-cutting edge. Chip-separating tooth shape for outstanding cutting performance.
Applications
For medium and deep cuts in thicker workpieces (3 mm and above). Particularly suitable for materials with low to medium strength.
Quality
HSS.

Note:
For saw blade holders see art. no. 21636.



Tooth shape C



17008

d_1 x b x d_2 mm	No. of teeth	17008	...
50 x 1.0 x 13	40		101
50 x 1.2 x 13	40		102
50 x 1.6 x 13	32		103
50 x 2.0 x 13	32		104
63 x 1.0 x 16	48		110
63 x 1.6 x 16	40		112
63 x 2.0 x 16	40		113
63 x 3.0 x 16	32		115
63 x 4.0 x 16	32		116
80 x 1.0 x 22	48		119
80 x 1.6 x 22	48		121
80 x 2.0 x 22	40		122

d_1 x b x d_2 mm	No. of teeth	17008	...
80 x 3.0 x 22	40		124
80 x 4.0 x 22	32		125
100 x 1.0 x 22	64		128
100 x 1.6 x 22	48		130
100 x 2.0 x 22	48		131
100 x 2.5 x 22	48		132
100 x 3.0 x 22	40		133
100 x 4.0 x 22	40		134
125 x 1.0 x 22	80		137
125 x 1.6 x 22	64		139
125 x 2.0 x 22	64		140
125 x 2.5 x 22	48		141

d_1 x b x d_2 mm	No. of teeth	17008	...
125 x 3.0 x 22	48		142
125 x 4.0 x 22	48		143
160 x 1.2 x 32	80		147
160 x 1.6 x 32	80		148
160 x 2.0 x 32	64		149
160 x 3.0 x 32	64		151
200 x 1.6 x 32	80		157
200 x 2.0 x 32	80		158
200 x 3.0 x 32	64		160
250 x 1.6 x 32	100		166
250 x 2.0 x 32	100		167
250 x 3.0 x 32	80		169

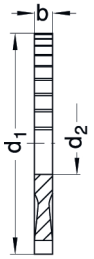
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–140	50–80	30–50	32–35	28–32	-	-	-	-	-	-	-	-	-	-	-	-	60–100

ATORN®

17030

Design
- Curved tooth shape B
- Coarse-toothed
- Laterally hollow ground
- Bore without wedge taper
- Tolerance: d_1 = j15, b = j11, d_2 = H6

NEW

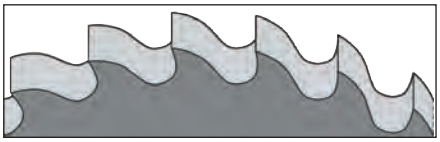


Applications
For larger cross-sections and greater cutting depths.
Better chip formation than with fine-toothed versions.

Quality
Solid carbide.

Note:
Cutting speed 3–5 times higher than with HSS saw blades.
The advantages are shorter processing times, a longer service life and clean cutting surfaces.
Prerequisites are stable machine conditions, good workpiece clamping and coolant supply.

Tooth shape B, coarse-toothed



d_1 x b x d_2 mm	No. of teeth	17030 ...
15 x 0.2 x 5	20	500
15 x 0.25 x 5	20	501
15 x 0.3 x 5	20	502
15 x 0.35 x 5	20	503
15 x 0.4 x 5	20	504
15 x 0.5 x 5	20	505
15 x 0.6 x 5	20	506
15 x 0.7 x 5	20	507
15 x 0.8 x 5	20	508
15 x 0.9 x 5	20	509
15 x 1.0 x 5	20	510
15 x 1.1 x 5	20	511
15 x 1.2 x 5	20	512
15 x 1.3 x 5	20	513
15 x 1.4 x 5	20	514
15 x 1.5 x 5	20	515
15 x 1.6 x 5	20	516
15 x 1.7 x 5	20	517
15 x 1.8 x 5	20	518
15 x 1.9 x 5	20	519
15 x 2.0 x 5	20	520
15 x 2.5 x 5	20	521
15 x 3.0 x 5	20	522
15 x 3.5 x 5	20	523
15 x 4.0 x 5	20	524
15 x 4.5 x 5	20	525
15 x 5.0 x 5	20	526
15 x 5.5 x 5	20	527
15 x 6.0 x 5	20	528
20 x 0.2 x 5	20	529
20 x 0.25 x 5	20	530
20 x 0.3 x 5	20	531
20 x 0.35 x 5	20	532
20 x 0.4 x 5	20	533
20 x 0.5 x 5	20	534
20 x 0.6 x 5	20	535
20 x 0.7 x 5	20	536
20 x 0.8 x 5	20	537
20 x 0.9 x 5	20	538
20 x 1.0 x 5	20	539
20 x 1.1 x 5	20	540
20 x 1.2 x 5	20	541
20 x 1.3 x 5	20	542
20 x 1.4 x 5	20	543
20 x 1.5 x 5	20	544
20 x 1.6 x 5	20	545
20 x 1.7 x 5	20	546
20 x 1.8 x 5	20	547
20 x 1.9 x 5	20	548
20 x 2.0 x 5	20	549
20 x 2.5 x 5	20	550
20 x 3.0 x 5	20	551
20 x 3.5 x 5	20	552
20 x 4.0 x 5	20	553
20 x 4.5 x 5	20	554
20 x 5.0 x 5	20	555
20 x 5.5 x 5	20	556
20 x 6.0 x 5	20	557
25 x 0.2 x 8	20	558
25 x 0.25 x 8	20	559
25 x 0.3 x 8	20	560
25 x 0.35 x 8	20	561
25 x 0.4 x 8	20	562
25 x 0.5 x 8	20	563
25 x 0.6 x 8	20	564
25 x 0.7 x 8	20	565
25 x 0.8 x 8	20	566
25 x 0.9 x 8	20	567
25 x 1.0 x 8	20	568
25 x 1.1 x 8	20	569
25 x 1.2 x 8	20	570
25 x 1.3 x 8	20	571
25 x 1.4 x 8	20	572
25 x 1.5 x 8	20	573
25 x 1.6 x 8	20	574
25 x 1.7 x 8	20	575
25 x 1.8 x 8	20	576
25 x 1.9 x 8	20	577
25 x 2.0 x 8	20	578
25 x 2.5 x 8	20	579
25 x 3.0 x 8	20	580
25 x 3.5 x 8	20	581
25 x 4.0 x 8	20	582
25 x 4.5 x 8	20	583
25 x 5.0 x 8	20	584
25 x 5.5 x 8	20	585
25 x 6.0 x 8	20	586
30 x 0.2 x 8	30	587
30 x 0.25 x 8	30	588
30 x 0.3 x 8	30	589
30 x 0.35 x 8	30	590
30 x 0.4 x 8	30	591
30 x 0.5 x 8	30	592
30 x 0.6 x 8	30	593
30 x 0.7 x 8	30	594
30 x 0.8 x 8	24	595
30 x 0.9 x 8	24	596
30 x 1.0 x 8	24	597
30 x 1.1 x 8	24	598
30 x 1.2 x 8	24	599
30 x 1.3 x 8	24	600
30 x 1.4 x 8	24	601
30 x 1.5 x 8	24	602
30 x 1.6 x 8	24	603
30 x 1.7 x 8	24	604
30 x 1.8 x 8	24	605
30 x 1.9 x 8	24	606
30 x 2.0 x 8	24	607
30 x 2.5 x 8	24	608
30 x 3.0 x 8	24	609
30 x 3.5 x 8	24	610
30 x 4.0 x 8	24	611
30 x 4.5 x 8	24	612
30 x 5.0 x 8	24	613
30 x 5.5 x 8	24	614
30 x 6.0 x 8	24	615
40 x 0.2 x 10	40	616
40 x 0.25 x 10	40	617
40 x 0.3 x 10	40	618
40 x 0.35 x 10	40	619
40 x 0.4 x 10	40	620
40 x 0.5 x 10	40	621
40 x 0.6 x 10	40	622
40 x 0.7 x 10	40	623
40 x 0.8 x 10	32	624
40 x 0.9 x 10	32	625
40 x 1.0 x 10	32	626
40 x 1.1 x 10	32	627
40 x 1.2 x 10	32	628

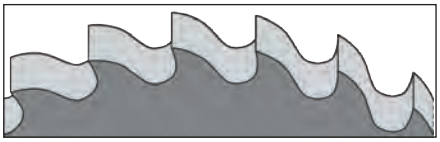
Continued

17030 Solid carbide circular saw blades, coarse-toothed, DIN 1838

VHM

Continued

Tooth shape B, coarse-toothed



d_1 x b x d_2 mm	No. of teeth	17030	...
40 x 1.3 x 10	32		629
40 x 1.4 x 10	32		630
40 x 1.5 x 10	32		631
40 x 1.6 x 10	32		632
40 x 1.7 x 10	32		633
40 x 1.8 x 10	32		634
40 x 1.9 x 10	32		635
40 x 2.0 x 10	32		636
40 x 2.5 x 10	32		637
40 x 3.0 x 10	32		638
40 x 3.5 x 10	32		639
40 x 4.0 x 10	32		640
40 x 4.5 x 10	32		641
40 x 5.0 x 10	32		642
40 x 5.5 x 10	32		643
40 x 6.0 x 10	32		644
50 x 0.2 x 13	48		645
50 x 0.25 x 13	48		646
50 x 0.3 x 13	48		647
50 x 0.35 x 13	48		648
50 x 0.4 x 13	48		649
50 x 0.5 x 13	48		650
50 x 0.6 x 13	48		651
50 x 0.7 x 13	40		652
50 x 0.8 x 13	40		653
50 x 0.9 x 13	40		654
50 x 1.0 x 13	40		655
50 x 1.1 x 13	40		656
50 x 1.2 x 13	40		657
50 x 1.3 x 13	32		658
50 x 1.4 x 13	32		659
50 x 1.5 x 13	32		660
50 x 1.6 x 13	32		661
50 x 1.7 x 13	32		662
50 x 1.8 x 13	32		663
50 x 1.9 x 13	32		664
50 x 2.0 x 13	32		665
50 x 2.5 x 13	32		666
50 x 3.0 x 13	24		667
50 x 3.5 x 13	24		668
50 x 4.0 x 13	24		669
50 x 4.5 x 13	24		670
50 x 5.0 x 13	24		671
50 x 5.5 x 13	20		672
50 x 6.0 x 13	20		673
63 x 0.3 x 16	64		674
63 x 0.35 x 16	64		675
63 x 0.4 x 16	64		676
63 x 0.5 x 16	64		677
63 x 0.6 x 16	48		678
63 x 0.7 x 16	48		679
63 x 0.8 x 16	48		680
63 x 0.9 x 16	48		681
63 x 1.0 x 16	48		682

d_1 x b x d_2 mm	No. of teeth	17030	...
63 x 1.1 x 16	40		683
63 x 1.2 x 16	40		684
63 x 1.3 x 16	40		685
63 x 1.4 x 16	40		686
63 x 1.5 x 16	40		687
63 x 1.6 x 16	40		688
63 x 1.7 x 16	40		689
63 x 1.8 x 16	40		690
63 x 1.9 x 16	40		691
63 x 2.0 x 16	40		692
63 x 2.5 x 16	32		693
63 x 3.0 x 16	32		694
63 x 3.5 x 16	32		695
63 x 4.0 x 16	32		696
63 x 4.5 x 16	32		697
63 x 5.0 x 16	24		698
63 x 5.5 x 16	24		699
63 x 6.0 x 16	24		700
80 x 0.3 x 22	64		701
80 x 0.35 x 22	64		702
80 x 0.4 x 22	64		703
80 x 0.5 x 22	64		704
80 x 0.6 x 22	64		705
80 x 0.7 x 22	64		706
80 x 0.8 x 22	64		707
80 x 0.9 x 22	48		708
80 x 1.0 x 22	48		709
80 x 1.1 x 22	48		710
80 x 1.2 x 22	48		711
80 x 1.3 x 22	48		712
80 x 1.4 x 22	48		713
80 x 1.5 x 22	48		714
80 x 1.6 x 22	48		715
80 x 1.7 x 22	40		716
80 x 1.8 x 22	40		717
80 x 1.9 x 22	40		718
80 x 2.0 x 22	40		719
80 x 2.5 x 22	40		720
80 x 3.0 x 22	40		721
80 x 3.5 x 22	32		722
80 x 4.0 x 22	32		723
80 x 4.5 x 22	32		724
80 x 5.0 x 22	32		725
80 x 5.5 x 22	32		726
80 x 6.0 x 22	32		727
100 x 0.5 x 22	80		728
100 x 0.6 x 22	80		729
100 x 0.7 x 22	80		730
100 x 0.8 x 22	64		731
100 x 0.9 x 22	64		732
100 x 1.0 x 22	64		733
100 x 1.1 x 22	64		734
100 x 1.2 x 22	64		735
100 x 1.3 x 22	48		736

d_1 x b x d_2 mm	No. of teeth	17030	...
100 x 1.4 x 22	48		737
100 x 1.5 x 22	48		738
100 x 1.6 x 22	48		739
100 x 1.7 x 22	48		740
100 x 1.8 x 22	48		741
100 x 1.9 x 22	48		742
100 x 2.0 x 22	48		743
100 x 2.5 x 22	48		744
100 x 3.0 x 22	40		745
100 x 3.5 x 22	40		746
100 x 4.0 x 22	40		747
100 x 4.5 x 22	40		748
100 x 5.0 x 22	40		749
100 x 5.5 x 22	32		750
100 x 6.0 x 22	32		751
125 x 0.6 x 22	80		752
125 x 0.7 x 22	80		753
125 x 0.8 x 22	80		754
125 x 0.9 x 22	80		755
125 x 1.0 x 22	80		756
125 x 1.1 x 22	64		757
125 x 1.2 x 22	64		758
125 x 1.3 x 22	64		759
125 x 1.4 x 22	64		760
125 x 1.5 x 22	64		761
125 x 1.6 x 22	64		762
125 x 1.7 x 22	64		763
125 x 1.8 x 22	64		764
125 x 1.9 x 22	64		765
125 x 2.0 x 22	64		766
125 x 2.5 x 22	48		767
125 x 3.0 x 22	48		768
125 x 3.5 x 22	48		769
125 x 4.0 x 22	48		770
125 x 4.5 x 22	40		771
125 x 5.0 x 22	40		772
125 x 5.5 x 22	40		773
125 x 6.0 x 22	40		774
160 x 1.0 x 32	80		783
160 x 1.2 x 32	80		784
160 x 1.5 x 32	80		785
160 x 1.6 x 32	80		786
160 x 2.0 x 32	64		787
160 x 2.5 x 32	64		788
160 x 3.0 x 32	64		789
160 x 4.0 x 32	48		790
200 x 1.5 x 32	80		791
200 x 1.6 x 32	80		792
200 x 2.0 x 32	80		793
200 x 2.5 x 32	80		794
200 x 3.0 x 32	64		795
200 x 4.0 x 32	64		796

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–1000	400–800	150–600	100–180	100–180	100–180	60–120	40–80	20–60	-	-	-	-	60–160	60–160	20–60	100–150	150–1000

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Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

ATORN®

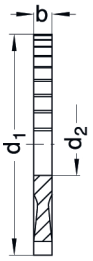
Design
- Angular tooth shape A
- Fine-toothed
- Laterally hollow ground
- Bore without wedge taper
- Tolerance: d_1 = j15, b = j11, d_2 = H6

Applications
For thin-walled work pieces and shallow cutting depths.

Quality
Solid carbide.

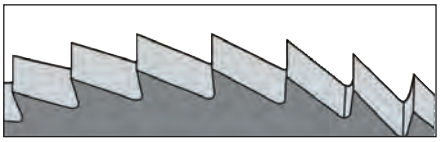
Note:
Cutting speed 3–5 times higher than with HSS saw blades.
The advantages are shorter processing times, a longer service life and clean cutting surfaces.
Prerequisites are stable machine conditions, good workpiece clamping and coolant supply.

NEW



17031

Tooth shape A, fine-toothed



d_1 x b x d_2 mm	No. of teeth	17031 ...
15 x 0.1 x 5	64	500
15 x 0.15 x 5	64	501
15 x 0.2 x 5	64	502
15 x 0.25 x 5	64	503
15 x 0.3 x 5	64	504
15 x 0.35 x 5	64	505
15 x 0.4 x 5	64	506
15 x 0.5 x 5	48	507
15 x 0.6 x 5	48	508
15 x 0.7 x 5	48	509
15 x 0.8 x 5	40	510
15 x 0.9 x 5	40	511
15 x 1.0 x 5	40	512
15 x 1.1 x 5	40	513
15 x 1.2 x 5	40	514
15 x 1.3 x 5	40	515
15 x 1.4 x 5	40	516
15 x 1.5 x 5	40	517
15 x 1.6 x 5	40	518
15 x 1.7 x 5	40	519
15 x 1.8 x 5	40	520
15 x 1.9 x 5	40	521
15 x 2.0 x 5	40	522
15 x 2.5 x 5	40	523
15 x 3.0 x 5	40	524
15 x 3.5 x 5	40	525
15 x 4.0 x 5	40	526
15 x 4.5 x 5	40	527
15 x 5.0 x 5	40	528
15 x 5.5 x 5	40	529
15 x 6.0 x 5	40	530
20 x 0.1 x 5	80	531
20 x 0.15 x 5	80	532
20 x 0.2 x 5	80	533
20 x 0.25 x 5	64	534
20 x 0.3 x 5	64	535
20 x 0.35 x 5	64	536
20 x 0.4 x 5	64	537
20 x 0.5 x 5	48	538
20 x 0.6 x 5	48	539
20 x 0.7 x 5	48	540
20 x 0.8 x 5	48	541
20 x 0.9 x 5	40	542
20 x 1.0 x 5	40	543
20 x 1.1 x 5	40	544
20 x 1.2 x 5	40	545
20 x 1.3 x 5	40	546
20 x 1.4 x 5	40	547
20 x 1.5 x 5	40	548
20 x 1.6 x 5	40	549
20 x 1.7 x 5	40	550
20 x 1.8 x 5	32	551
20 x 1.9 x 5	32	552
20 x 2.0 x 5	32	553
20 x 2.5 x 5	32	554
20 x 3.0 x 5	32	555
20 x 3.5 x 5	24	556
20 x 4.0 x 5	24	557
20 x 4.5 x 5	24	558
20 x 5.0 x 5	24	559
20 x 5.5 x 5	24	560
20 x 6.0 x 5	24	561
25 x 0.1 x 8	80	562
25 x 0.15 x 8	80	563
25 x 0.2 x 8	80	564
25 x 0.25 x 8	80	565
25 x 0.3 x 8	80	566
25 x 0.35 x 8	64	567
25 x 0.4 x 8	64	568
25 x 0.5 x 8	64	569
25 x 0.6 x 8	64	570
25 x 0.7 x 8	48	571
25 x 0.8 x 8	48	572
25 x 0.9 x 8	48	573
25 x 1.0 x 8	48	574
25 x 1.1 x 8	48	575
25 x 1.2 x 8	48	576
25 x 1.3 x 8	40	577
25 x 1.4 x 8	40	578
25 x 1.5 x 8	40	579
25 x 1.6 x 8	40	580
25 x 1.7 x 8	40	581
25 x 1.8 x 8	40	582
25 x 1.9 x 8	40	583
25 x 2.0 x 8	40	584
25 x 2.5 x 8	40	585
25 x 3.0 x 8	32	586
25 x 3.5 x 8	32	587
25 x 4.0 x 8	32	588
25 x 4.5 x 8	32	589
25 x 5.0 x 8	32	590
25 x 5.5 x 8	24	591
25 x 6.0 x 8	24	592
30 x 0.1 x 8	100	593
30 x 0.15 x 8	100	594
30 x 0.2 x 8	100	595
30 x 0.25 x 8	100	596
30 x 0.3 x 8	80	597
30 x 0.35 x 8	80	598
30 x 0.4 x 8	80	599
30 x 0.5 x 8	80	600
30 x 0.6 x 8	64	601
30 x 0.7 x 8	64	602
30 x 0.8 x 8	64	603
30 x 0.9 x 8	64	604
30 x 1.0 x 8	64	605
30 x 1.1 x 8	64	606
30 x 1.2 x 8	48	607
30 x 1.3 x 8	48	608
30 x 1.4 x 8	48	609
30 x 1.5 x 8	48	610
30 x 1.6 x 8	48	611
30 x 1.7 x 8	48	612
30 x 1.8 x 8	48	613
30 x 1.9 x 8	48	614
30 x 2.0 x 8	48	615
30 x 2.5 x 8	40	616
30 x 3.0 x 8	40	617
30 x 3.5 x 8	40	618
30 x 4.0 x 8	40	619
30 x 4.5 x 8	32	620
30 x 5.0 x 8	32	621
30 x 5.5 x 8	32	622
30 x 6.0 x 8	32	623
40 x 0.1 x 10	128	624
40 x 0.15 x 10	128	625
40 x 0.2 x 10	128	626
40 x 0.25 x 10	100	627
40 x 0.3 x 10	100	628
40 x 0.35 x 10	100	629
40 x 0.4 x 10	80	630
40 x 0.5 x 10	80	631
40 x 0.6 x 10	80	632
40 x 0.7 x 10	80	633
40 x 0.8 x 10	80	634

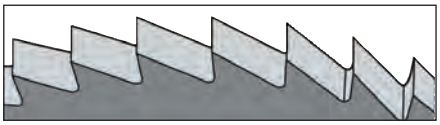
Continued ▶

17031 Solid carbide circular saw blades, fine-toothed, DIN 1837

VHM

Continued

Tooth shape A, fine-toothed



d_1 x b x d_2 mm	No. of teeth	17031 ...
40 x 0.9 x 10	64	635
40 x 1.0 x 10	64	636
40 x 1.1 x 10	64	637
40 x 1.2 x 10	64	638
40 x 1.3 x 10	64	639
40 x 1.4 x 10	64	640
40 x 1.5 x 10	64	641
40 x 1.6 x 10	64	642
40 x 1.7 x 10	48	643
40 x 1.8 x 10	48	644
40 x 1.9 x 10	48	645
40 x 2.0 x 10	48	646
40 x 2.5 x 10	48	647
40 x 3.0 x 10	48	648
40 x 3.5 x 10	48	649
40 x 4.0 x 10	40	650
40 x 4.5 x 10	40	651
40 x 5.0 x 10	40	652
40 x 5.5 x 10	40	653
40 x 6.0 x 10	40	654
50 x 0.1 x 13	128	655
50 x 0.15 x 13	128	656
50 x 0.2 x 13	128	657
50 x 0.25 x 13	128	658
50 x 0.3 x 13	128	659
50 x 0.35 x 13	100	660
50 x 0.4 x 13	100	661
50 x 0.5 x 13	100	662
50 x 0.6 x 13	100	663
50 x 0.7 x 13	80	664
50 x 0.8 x 13	80	665
50 x 0.9 x 13	80	666
50 x 1.0 x 13	80	667
50 x 1.1 x 13	80	668
50 x 1.2 x 13	80	669
50 x 1.3 x 13	64	670
50 x 1.4 x 13	64	671
50 x 1.5 x 13	64	672
50 x 1.6 x 13	64	673
50 x 1.7 x 13	64	674
50 x 1.8 x 13	64	675
50 x 1.9 x 13	64	676
50 x 2.0 x 13	64	677
50 x 2.5 x 13	64	678
50 x 3.0 x 13	48	679
50 x 3.5 x 13	48	680
50 x 4.0 x 13	48	681
50 x 4.5 x 13	48	682
50 x 5.0 x 13	48	683
50 x 5.5 x 13	40	684
50 x 6.0 x 13	40	685
63 x 0.2 x 16	160	686
63 x 0.25 x 16	160	687
63 x 0.3 x 16	128	688
63 x 0.35 x 16	128	689
63 x 0.4 x 16	128	690
63 x 0.5 x 16	128	691
63 x 0.6 x 16	100	692
63 x 0.7 x 16	100	693
63 x 0.8 x 16	100	694
63 x 0.9 x 16	100	695
63 x 1.0 x 16	100	696
63 x 1.1 x 16	80	697
63 x 1.2 x 16	80	698
63 x 1.3 x 16	80	699
63 x 1.4 x 16	80	700
63 x 1.5 x 16	80	701
63 x 1.6 x 16	80	702
63 x 1.7 x 16	80	703
63 x 1.8 x 16	80	704
63 x 1.9 x 16	80	705
63 x 2.0 x 16	80	706
63 x 2.5 x 16	64	707
63 x 3.0 x 16	64	708
63 x 3.5 x 16	64	709
63 x 4.0 x 16	64	710
63 x 4.5 x 16	64	711
63 x 5.0 x 16	48	712
63 x 5.5 x 16	48	713
63 x 6.0 x 16	48	714
80 x 0.3 x 22	160	715
80 x 0.35 x 22	160	716
80 x 0.4 x 22	160	717
80 x 0.5 x 22	128	718
80 x 0.6 x 22	128	719
80 x 0.7 x 22	128	720
80 x 0.8 x 22	128	721
80 x 0.9 x 22	100	722
80 x 1.0 x 22	100	723
80 x 1.1 x 22	100	724
80 x 1.2 x 22	100	725
80 x 1.3 x 22	100	726
80 x 1.4 x 22	100	727
80 x 1.5 x 22	100	728
80 x 1.6 x 22	100	729
80 x 1.7 x 22	80	730
80 x 1.8 x 22	80	731
80 x 1.9 x 22	80	732
80 x 2.0 x 22	80	733
80 x 2.5 x 22	80	734
80 x 3.0 x 22	80	735
80 x 3.5 x 22	64	736
80 x 4.0 x 22	64	737
80 x 4.5 x 22	64	738
80 x 5.0 x 22	64	739
80 x 5.5 x 22	64	740
80 x 6.0 x 22	64	741
100 x 0.5 x 22	160	742
100 x 0.6 x 22	160	743
100 x 0.7 x 22	128	744
100 x 0.8 x 22	128	745
100 x 0.9 x 22	128	746
100 x 1.0 x 22	128	747
100 x 1.1 x 22	128	748
100 x 1.2 x 22	128	749
100 x 1.3 x 22	100	750
100 x 1.4 x 22	100	751
100 x 1.5 x 22	100	752
100 x 1.6 x 22	100	753
100 x 1.7 x 22	100	754
100 x 1.8 x 22	100	755
100 x 1.9 x 22	100	756
100 x 2.0 x 22	100	757
100 x 2.5 x 22	100	758
100 x 3.0 x 22	80	759
100 x 3.5 x 22	80	760
100 x 4.0 x 22	80	761
100 x 4.5 x 22	80	762
100 x 5.0 x 22	80	763
100 x 5.5 x 22	64	764
100 x 6.0 x 22	64	765
125 x 0.6 x 22	160	766
125 x 0.7 x 22	160	767
125 x 0.8 x 22	160	768
125 x 0.9 x 22	160	769
125 x 1.0 x 22	160	770
125 x 1.1 x 22	128	771
125 x 1.2 x 22	128	772
125 x 1.3 x 22	128	773
125 x 1.4 x 22	128	774
125 x 1.5 x 22	128	775
125 x 1.6 x 22	128	776
125 x 1.7 x 22	128	777
125 x 1.8 x 22	128	778
125 x 1.9 x 22	128	779
125 x 2.0 x 22	128	780
125 x 2.5 x 22	100	781
125 x 3.0 x 22	100	782
125 x 3.5 x 22	100	783
125 x 4.0 x 22	100	784
125 x 4.5 x 22	100	785
125 x 5.0 x 22	80	786
125 x 5.5 x 22	80	787
125 x 6.0 x 22	80	788
160 x 1.0 x 32	160	797
160 x 1.2 x 32	160	798
160 x 1.5 x 32	160	799
160 x 1.6 x 32	160	800
160 x 2.0 x 32	128	801
160 x 2.5 x 32	128	802
160 x 3.0 x 32	128	803
160 x 4.0 x 32	128	804
200 x 1.5 x 32	160	805
200 x 1.6 x 32	160	806
200 x 2.0 x 32	160	807
200 x 2.5 x 32	160	808
200 x 3.0 x 32	128	809
200 x 4.0 x 32	128	810

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
400–1000	400–600	150–600	100–180	100–180	100–180	60–120	40–80	20–60	-	-	-	-	60–160	60–160	20–60	100–150	150–1000

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21636 Saw blade mounts

Design
With straight shank for mounting on surface chucks, high degree of concentricity.
Applications
For mounting saw blades with a diameter of 20–100 mm and saw blade thicknesses of 0.2–6 mm (see art. no. 17002–17008 and 17030–17031).

Note:
Saw blade not included in delivery.

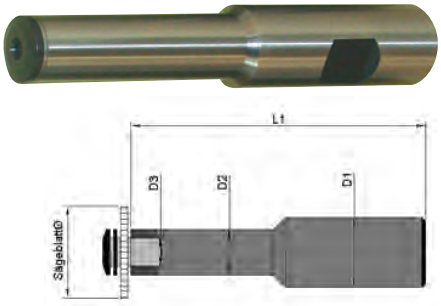
21636 300
Design
Set, 6 pieces, consisting of all sizes of art. no. 21636 301–306, including case.

21636 301-308
Design
Individual.

21636 300

		Set	
Set contents	**Holder Ø mm**	**21636**	**...**
Six pieces	20/25/32/40/50/63		**300**

21636 301-308



					Individual	
For saw blade Ø mm	**L1 mm**	**Ø D1 mm**	**Ø D2 mm**	**Ø D3 mm**	**21636**	**...**
20	94	20	10.0	5		**301**
25	104	20	13.0	8		**302**
32	110	20	16.0	8		**303**
40	114	20	19.5	10		**304**
50	141	25	24.5	13		**305**
63	141	25	24.5	16		**306**
80	160	25	34.0	22		**307**
100	160	25	39.5	22		**308**

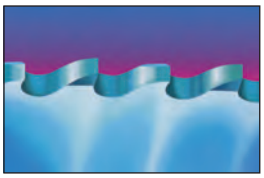
17010 - 17011 Metal circular saw blades

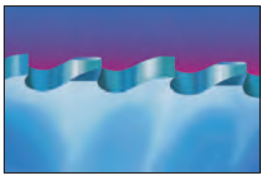
HSS | HSS-E

17010 - 17011

Design
With combined driving holes, steam-treated surface; prevents material build-up on the side of the blade and improves the service life.

Tooth shape BW: alternate bevel.
Tooth shape C: High-performance toothing (HZ) with pre- and post-cutting edge.

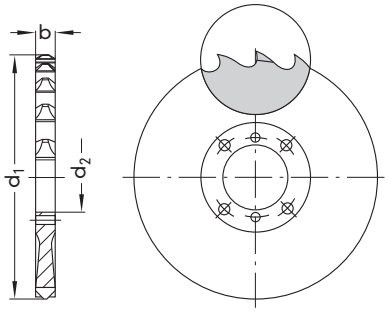

Tooth shape BW


Tooth shape C

Applications
For circular saws,
e.g. **EISELE, ULMIA and TRENNJÄGER.**

17010
Quality
HSS, steam-treated.

17011
Quality
HSS-E, steam-treated.



d_1 x b x d_2 mm	Secondary holes: no./Ø/pitch circle	No. of teeth	Tooth shape	HSS 17010	...	HSS-E 17011	...
225 x 2.0 x 40	2/8/55 + 4/12/64	180	BW		110		
225 x 2.0 x 40	2/8/55 + 4/12/64	120	C		111		
225 x 2.0 x 40	2/8/55 + 4/12/64	90	C		112		
250 x 2.0 x 40	2/8/55 + 4/12/64	200	BW		116		116
250 x 2.0 x 40	2/8/55 + 4/12/64	128	C		117		117
250 x 2.0 x 40	2/8/55 + 4/12/64	100	C		118		118
250 x 2.5 x 40	2/8/55 + 4/12/64	200	BW		120		
250 x 2.5 x 40	2/8/55 + 4/12/64	128	C		121		
250 x 2.5 x 40	2/8/55 + 4/12/64	100	C		122		
275 x 2.0 x 40	2/8/55 + 4/12/64	220	BW		125		125
275 x 2.0 x 40	2/8/55 + 4/12/64	144	C		126		126
275 x 2.0 x 40	2/8/55 + 4/12/64	110	C		127		127
275 x 2.5 x 40	2/8/55 + 4/12/64	220	BW		129		129
275 x 2.5 x 40	2/8/55 + 4/12/64	144	C		130		130
275 x 2.5 x 40	2/8/55 + 4/12/64	110	C		131		131
300 x 2.5 x 40	2/8/55 + 4/12/64	160	C		134		134
300 x 2.5 x 40	2/8/55 + 4/12/64	120	C		135		135
315 x 2.5 x 40	2/8/55 + 4/12/64	250	BW		137		137
315 x 2.5 x 40	2/8/55 + 4/12/64	160	C		138		138
315 x 2.5 x 40	2/8/55 + 4/12/64	120	C		139		139
315 x 3.0 x 40	2/8/55 + 4/12/64	250	BW		141		141
315 x 3.0 x 40	2/8/55 + 4/12/64	160	C		142		142
315 x 3.0 x 40	2/8/55 + 4/12/64	120	C		143		143
350 x 2.5 x 40	2/8/55 + 4/12/64	220	C		145		
350 x 2.5 x 40	2/8/55 + 4/12/64	180	C		146		
350 x 2.5 x 40	2/8/55 + 4/12/64	110	C		147		
350 x 3.0 x 40	2/8/55 + 4/12/64	180	C		149		149
350 x 3.0 x 40	2/8/55 + 4/12/64	140	C		150		150
400 x 3.0 x 40	2/8/55 + 2/15/80 + 4/12/64	200	C		152		
400 x 3.0 x 40	2/8/55 + 2/15/80 + 4/12/64	160	C		153		
425 x 3.5 x 40	2/15/80 + 4/12/64	220	C		155		
425 x 3.5 x 40	2/15/80 + 4/12/64	160	C		156		

17014 Metal circular saw blades

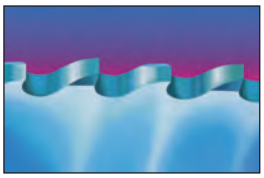
HSS

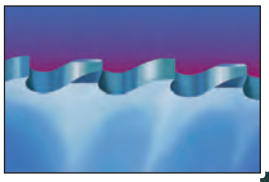
Design
With combined driving holes. Steam-treated surface; prevents material build-up on the side of the blade and improves the service life.

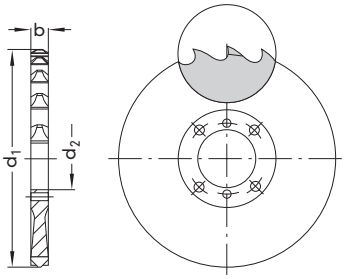
Tooth shape BW: alternate bevel.
Tooth shape C: High-performance toothing (HZ) with pre- and post-cutting edge.

Applications
For circular saws with a 32-mm hole, e.g. Italian brands.

Quality
HSS, steam-treated.


Tooth shape BW


Tooth shape C



17014

d_1 x b x d_2 mm	Secondary holes: no./Ø/pitch circle	No. of teeth	Tooth shape	17014	...
225 x 2.0 x 32	2/8/45 + 2/9/50 + 2/11/63	180	BW		105
225 x 2.0 x 32	2/8/45 + 2/9/50 + 2/11/63	120	C		106
225 x 2.0 x 32	2/8/45 + 2/9/50 + 2/11/63	90	C		107
250 x 2.0 x 32	2/8/45 + 2/9/50 + 2/11/63	200	BW		110
250 x 2.0 x 32	2/8/45 + 2/9/50 + 2/11/63	128	C		111
250 x 2.0 x 32	2/8/45 + 2/9/50 + 2/11/63	100	C		112
275 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	220	BW		116
275 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	144	C		117
275 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	110	C		118
300 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	240	BW		122
300 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	160	C		123
300 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	120	C		124
315 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	250	BW		125
315 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	160	C		126
315 x 2.5 x 32	2/8/45 + 2/9/50 + 2/11/63	120	C		127
315 x 3.0 x 32	2/8/45 + 2/9/50 + 2/11/63	250	BW		128
315 x 3.0 x 32	2/8/45 + 2/9/50 + 2/11/63	160	C		129
315 x 3.0 x 32	2/8/45 + 2/9/50 + 2/11/63	120	C		130
350 x 2.5 x 32	2/8/45 + 2/11/63 + 2/12/75	220	C		132
350 x 2.5 x 32	2/8/45 + 2/11/63 + 2/12/75	180	C		133
350 x 2.5 x 32	2/8/45 + 2/11/63 + 2/12/75	140	C		134
350 x 3.0 x 32	2/8/45 + 2/11/63 + 2/12/75	220	C		137
350 x 3.0 x 32	2/8/45 + 2/11/63 + 2/12/75	180	C		138
350 x 3.0 x 32	2/8/45 + 2/9/50 + 2/11/63 + 2/12/75	140	C		139

17051 Segmented metal circular saw blades

HSS

Design
Coarse-toothed, riveted tooth segments. Steel blade made of alloyed tool steel, hardened, **approx. 1300 N/mm²** strength.

Tooth shape C: The high-performance toothing with pre- and post-cutters (HZ), combined with the coolant channels ground into the side of the tooth segments, ensure optimum machining. The steel blade is thinner than the cutting width of the segment teeth, thus preventing the saw blade from seizing.

Quality
Tooth segments HSS (DMo5).

Note:
The individual tooth segments are easily replaced in the event of tooth breakage. Segmented circular saw blades with medium-sized toothing for thin profiles and segmented circular saw blades with different dimensions are deliverable on request.

17051

d_1 x b x d_2 mm	Secondary holes: no./Ø/pitch circle	No. of teeth	No. of segments	17051	...
360 x 3.6 x 50	4/14/85 + 4/15/80	128	16		214
360 x 3.6 x 50	4/14/85 + 4/15/80	96	16		215
400 x 4.0 x 40	2/15/80 + 4/12/64	128	16		221
400 x 4.0 x 40	2/15/80 + 4/12/64	96	16		222
400 x 4.0 x 50	4/14/85 + 4/15/80	128	16		225
400 x 4.0 x 50	4/14/85 + 4/15/80	96	16		226

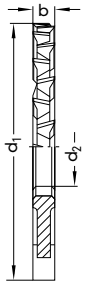
17085 Narrow disc milling cutters (side and face milling cutters), DIN 1834 A

N | HSS-E | ≤ 1000 N/mm²

Design
- **Type N**
- Cuts on three sides
- Cross-toothed
- With longitudinal groove according to DIN 138

Quality
HSS-E.

17085



d_1 js16 mm	b k11 mm	d_2 H7 mm	Cutting edges	HSS-E 17085	...
63	1.6	22	28		**201**
63	2	22	28		**202**
63	2.5	22	28		**203**
63	3	22	28		**204**
63	4	22	28		**205**
63	5	22	28		**206**
80	2	27	32		**207**
80	2.5	27	32		**208**
80	3	27	32		**209**
80	4	27	32		**210**
80	5	27	32		**211**
80	6	27	32		**212**
100	2	32	36		**213**
100	3	32	36		**215**
100	4	32	36		**216**

d_1 js16 mm	b k11 mm	d_2 H7 mm	Cutting edges	HSS-E 17085	...
100	5	32	36		**217**
100	6	32	36		**218**
100	8	32	28		**219**
125	2	32	40		**220**
125	3	32	40		**222**
125	4	32	40		**223**
125	5	32	40		**224**
125	6	32	40		**225**
125	8	32	32		**226**
125	10	32	32		**227**
160	2	40	48		**228**
160	3	40	48		**230**
160	4	40	48		**231**
160	5	40	48		**232**
160	6	40	48		**233**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100–150	50–80	50–80	35–40	32–35	25–28	22–25	-	-	-	-	-	-	20–25	18–22	12–20	25–40	50–60

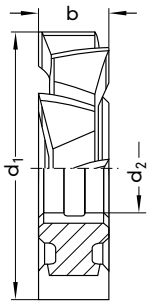
17241 Disc milling cutters, DIN 885 A

N | HSS-E Co5 | ≤ 1000 N/mm²

Design
- **Type N**
- Cuts on three sides
- Cross-toothed
- With longitudinal groove according to DIN 138

Quality
HSS-E (Co5).

17241



d_1 js16 mm	b k11 mm	d_2 H7 mm	Cutting edges	HSS-E 17241	...
50	5	16	12		**201**
50	6	16	12		**202**
50	8	16	12		**203**
63	6	22	12		**205**
63	8	22	12		**206**
63	10	22	12		**207**
63	12	22	12		**208**
80	10	27	14		**213**
80	12	27	14		**214**
80	16	27	14		**216**

d_1 js16 mm	b k11 mm	d_2 H7 mm	Cutting edges	HSS-E 17241	...
80	20	27	14		**218**
100	10	32	14		**219**
100	12	32	14		**220**
100	16	32	14		**222**
100	20	32	14		**224**
125	12	32	16		**227**
125	14	32	16		**228**
125	16	32	16		**229**
125	20	32	16		**231**
125	25	32	16		**233**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100–150	50–80	50–80	35–40	32–35	25–28	22–25	-	-	-	-	-	-	20–25	18–22	12–20	25–40	50–60

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

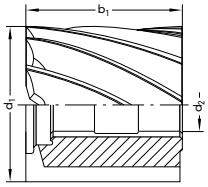
17413 Shell end mills

DIN 841 | N | HSS-E Co5 | ≤ 1000 N/mm²

Design
- **Type N**
- Right cutting
- Right-hand spiral
- For cutting on periphery and end face
- With longitudinal and transverse groove according to DIN 138

Quality
HSS-E (Co5).

17413



d_1 k12 mm	b_1 k16 mm	d_2 H7 mm	Cutting edges	HSS-E 17413 ...
40	40	16	8	204
50	50	22	8	206
60	30	27	8	207
60	60	27	8	208
75	35	27	10	209

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70-120	40-70	40-70	28-32	25-30	18-25	16-22	-	-	-	-	-	-	5-15	3-12	3-12	-	-

17441 - 17443 Shell end mills

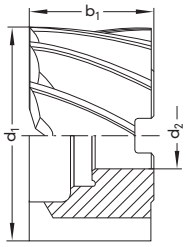
DIN 1880 | N | ≤ 1000 N/mm²

Design
- **Type N**
- Right cutting
- Right-hand spiral
- For cutting on periphery and end face
- With longitudinal and transverse groove according to DIN 138

17441
Quality
HSS-E (Co5).

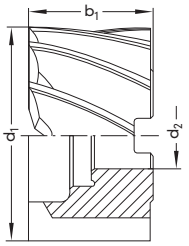
17443
Quality
HSS-E/TiCN-coated.

17441



HSS-E Co5

17443



HSS-E TiCN

d_1 k12 mm	b_1 k16 mm	d_2 H7 mm	Cutting edges	HSS-E 17441 ...	HSS-E/TiCN 17443 ...
40	32	16	8	101	101
50	36	22	8	102	102
63	40	27	8	103	103
80	45	27	10	104	104
100	50	32	12	105	105
125	56	40	14	106	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
17441																	
70-120	40-70	40-70	28-32	25-30	18-25	16-22	-	-	-	-	-	-	5-15	3-12	3-12	-	-
17443																	
70-200	40-150	40-150	75-85	45-55	40-60	20-45	-	-	-	-	-	-	5-28	3-25	3-25	-	-

17445 Shell end mills

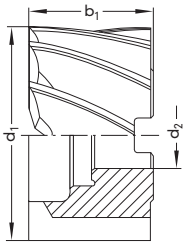
DIN 1880 | W | HSS-E Co5 | ALU | ≤ 1100 N/mm²

Design
- **Type W**
- Right cutting
- Right-hand spiral
- For cutting on periphery and end face
- With longitudinal and transverse groove according to DIN 138

Applications
For materials **up to approx. 1100 N/mm²** strength.
For soft, tough and long-chipping materials.

Quality
HSS-E (Co5).

17445



d_1 k12 mm	b_1 k16 mm	d_2 H7 mm	Cutting edges	HSS-E 17445 ...
40	32	16	4	101
50	36	22	4	102
63	40	27	5	103
80	45	27	6	104

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70-120	40-70	40-70	28-32	25-30	18-25	16-22	-	-	-	-	-	-	5-15	3-12	3-12	-	-

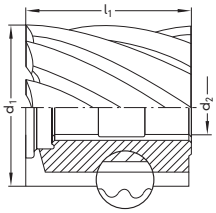
17452 Shell end mills

DIN 841 | NR | HSS-E Co5 | ≤ 1000 N/mm²

Design
- **Type NR with roughing teeth**
  (chip separator with round profile)
- Right cutting
- Right-hand spiral
- For cutting on periphery and end face
- Profile relief ground
- With longitudinal and transverse groove according to DIN 138

Quality
HSS-E (Co5).

17452



d_1 k14 mm	l_1 k16 mm	d_2 H7 mm	Cutting edges	HSS-E 17452	...
40	40	16	6		202
50	50	22	8		204
60	30	27	8		205
60	60	27	8		206
75	35	27	8		207

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70-120	40-70	40-70	28-32	25-30	18-25	16-22	-	-	-	-	-	-	5-15	3-12	3-12	-	-

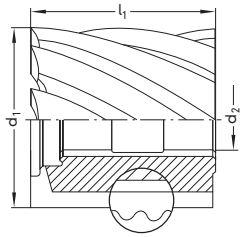
17475 Shell end mills

DIN 1880 | NR | HSS-E Co5 | ≤ 1000 N/mm²

Design
- **Type NR with roughing teeth**
- Right cutting
- Right-hand spiral
- For cutting on periphery and end face
- Profile relief ground
- With longitudinal and transverse groove according to DIN 138

Quality
HSS-E (Co5).

17475



d_1 k14 mm	l_1 k16 mm	d_2 H7 mm	Cutting edges	HSS-E 17475	...
40	32	16	6		101
50	36	22	6		102
63	40	27	8		103
80	45	27	8		104
100	50	32	10		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70-120	40-70	40-70	28-32	25-30	18-25	16-22	-	-	-	-	-	-	5-15	3-12	3-12	-	-

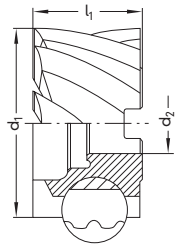
17478 Shell end mills

DIN 1880 | NF | HSS-E Co5 | ≤ 1000 N/mm²

Design
- **Type NF with roughing and finishing teeth**
- Right cutting
- Right-hand spiral
- For cutting on periphery and end face
- Profile relief ground
- With longitudinal and transverse groove according to DIN 138

Quality
HSS-E (Co5).

17478



d_1 k14 mm	l_1 k16 mm	d_2 H7 mm	Cutting edges	HSS-E 17478	...
40	32	16	6		101
50	36	22	6		102
63	40	27	8		103
80	45	27	8		104
100	50	32	10		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
70-120	40-70	40-70	28-32	25-30	18-25	16-22	-	-	-	-	-	-	5-15	3-12	3-12	-	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

17482 - 17484 Shell end mills

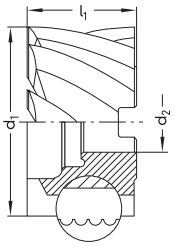
DIN 1880 | HR | ≤ 1200 N/mm²

HSS-E

Design
- **Type HR,** fine roughing profile
- Right cutting
- Right-hand spiral, for cutting on periphery and end face
- Profile relief ground
- With longitudinal and transverse groove according to DIN 138

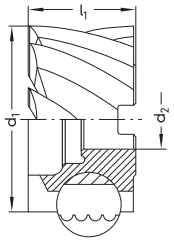
17482
Quality
HSS-E.

17484
Quality
HSS-E/TiAlN-coated.



17482

HSS-E TiAlN



17484

d_1 k14 mm	l_1 k16 mm	d_2 H7 mm	Cutting edges	HSS-E 17482	...	HSS-E/TiAlN 17484	...
40	32	16	8	101		101	
50	36	22	8	102		102	
63	40	27	10	103		103	
80	45	27	10	104		104	
100	50	32	12	105		105	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
17482																	
70–120	40–70	40–70	28–32	25–30	18–25	16–22	12–18	-	-	-	-	-	5–15	3–12	3–12	-	-
17484																	
70–200	40–150	40–150	75–85	45–55	40–60	20–45	15–35	-	-	-	-	-	5–28	3–25	3–25	-	-

17488 Single-angle milling cutters

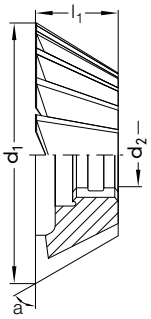
DIN 842 | H | HSS-E | ≤ 1000 N/mm²

Design
- **Type H**
- **Milling angle a = 45°**
- Right cutting
- Straight-grooved, for cutting on periphery and end face
- With longitudinal groove according to DIN 138

Applications
For milling dovetail guides etc.

Quality
HSS-E.

17488



d_1 js16 mm	l_1 mm	d_2 H7 mm	Cutting edges	HSS-E 17488	...
50	13	13	16		102
63	18	16	18		103
80	22	22	20		104
100	28	27	22		105

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100-150	45-90	45-56	40-45	35-40	32-36	26-30	-	-	-	-	-	-	20-28	18-25	10-22	28-45	70-90

17490 - 17492 Prism milling cutters

DIN 847 | HSS | 45° | 60° | 90° | ≤ 1000 N/mm²

Design
- Straight-grooved
- With longitudinal groove according to DIN 138

Applications
For milling prismatic guides etc.

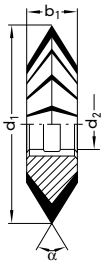
Quality
HSS-E.

17490
Milling angle a = 45°.

17491
Milling angle a = 60°.

17492
Milling angle a = 90°.

17490



d_1 k14 mm	b_1 mm At milling angle (js 16) 45°	60°	90°	d_2 H7 mm	Cutt. edges 45°	Cutt. edges 60°	Cutt. edges 90°	45° 17490	...	60° 17491	...	90° 17492	...
50	8	10	14	16	16	16	16		201		201		201
63	10	14	20	22	16	16	16		202		202		202
80	12	18	22	27	20	18	18		203		203		203
100	18	25	32	32	20	20	20		204		204		204

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100-150	45-90	45-56	40-45	35-40	32-36	26-30	-	-	-	-	-	-	20-28	18-25	10-22	28-45	70-90

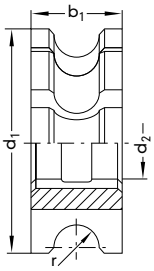
17493 Semi-circular profile cutters

DIN 855 | HSS-E | ≤ 1000 N/mm²

Design
- **Concave,** cutter curved inwards, relieved
- With longitudinal groove according to DIN 138

Quality
HSS-E.

17493



r h11 mm	d_1 js16 mm	d_2 H7 mm	b_1 mm	Cutting edges	HSS-E 17493	...
2	50	16	9	14		**104**
3	63	22	12	12		**106**
4	63	22	16	12		**108**
5	63	22	20	12		**109**
6	80	27	24	12		**110**
8	80	27	32	12		**112**
10	100	32	36	12		**114**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100-150	45-90	45-56	40-45	35-40	32-36	26-30	-	-	-	-	-	-	20-28	18-25	10-22	28-45	70-90

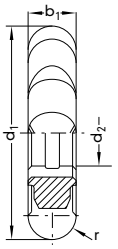
17494 Semi-circular profile cutters

DIN 856 | HSS-E | ≤ 1000 N/mm²

Design
- **Convex,** cutter curved outwards, relieved
- With longitudinal groove according to DIN 138

Quality
HSS-E.

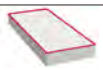
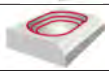
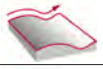
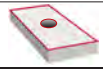
17494

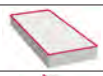
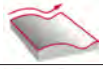
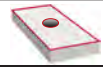


r h11 mm	d_1 js16 mm	d_2 H7 mm	b_1 mm	Cutting edges	HSS-E 17494	...
1	50	16	2	14		**101**
2	50	16	4	14		**104**
3	63	22	6	12		**106**
4	63	22	8	12		**108**
5	63	22	10	12		**109**
6	80	27	12	12		**110**
8	80	27	16	12		**112**
10	100	32	20	12		**114**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
100-150	45-90	45-56	40-45	35-40	32-36	26-30	-	-	-	-	-	-	20-28	18-25	10-22	28-45	70-90

Overview of indexable insert milling tools (I)

		HHW	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®
		Angular milling cutter	Drill groove milling cutter	Angular milling cutter				
●	1. Choice	17530	17501	17500	17500	17500	17500	17550
◕	Alternative			NEW	NEW	NEW	NEW	
◑	May be possible							
◔	Can be used to a limited extent							
▽	Roughing							
▽▽	Medium machining							
▽▽▽	Finishing							
Version								
Diameter		16 - 20	20 - 32	10 - 32	10 - 25	16 - 25	32 - 50	12 - 20
Number of cutting edges		1	1	2 - 8	2 - 7	2 - 5	8 - 11	2 - 4
Insert		SDHT/SDMT	APKT/APHX	APKT 06	APKT 06	APKT 06	APKT 06	ADHX06/ADKX06
Machining		▽▽	▽▽	▽▽▽	▽▽▽	▽	▽▽▽	▽▽▽
Catalogue page		17.57	17.27	17.26	17.26	17.26	17.26	17.32
ISO code		P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
Face milling		◑ ◑ ◑ ◑ ◑	◑ ◑ ◑ ◑	● ● ●	● ● ●	● ● ●	● ● ●	● ● ● ●
Angular milling			◕ ◕ ◕ ◕	● ● ●	● ● ●	● ● ●	● ● ●	● ● ● ●
Groove milling			● ● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ● ●
Pocket milling				● ● ●	● ● ●	● ● ●	● ● ●	● ● ● ●
Contour milling								
Chamfer milling		● ● ● ● ●						
Keyway milling								
Hole machining			◕ ◕ ◕ ◕					

		ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®
		Angular milling cutter						
●	1. Choice	17550	17551	17551	17552	17552	17552	17553
◕	Alternative							
◑	May be possible							
◔	Can be used to a limited extent							
▽	Roughing							
▽▽	Medium machining							
▽▽▽	Finishing							
Version								
Diameter		10 - 25	20 - 32	16 - 32	32 - 40	20 - 40	40 - 63	25 - 40
Number of cutting edges		1 - 6	3 - 6	2 - 6	4 - 6	2 - 6	4 - 9	2 - 4
Insert		ADHX06/ADKX06	ADHX09/ADKX09	ADHX09/ADKX09	ADHX12/ADKX12	ADHX12/ADKX12	ADHX12/ADKX12	ADHX17/ADKX17
Machining		▽▽▽	▽▽▽	▽▽▽	▽▽▽	▽▽▽	▽▽▽	▽▽▽
Catalogue page		17.32	17.33	17.33	17.34	17.34	17.34	17.35
ISO code		P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
Face milling		● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Angular milling		● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Groove milling		● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Pocket milling		● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Contour milling								
Chamfer milling								
Keyway milling								
Hole machining								

( ) = Items with prices in brackets partly available from stock.

Overview of indexable insert milling tools (II)

		ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®
		Angular milling cutter						
●	1. Choice	17553	17553	17556	17557	17558	17558	17558
◕	Alternative			NEW	NEW	NEW	NEW	NEW
◑	May be possible							
◔	Can be used to a limited extent							
▽	Roughing							
▽▽	Medium machining							
▽▽▽	Finishing							
	Version							
	Diameter	25 - 40	40 - 100	50 - 160	50 - 160	20 - 32	32 - 50	50 - 160
	Number of cutting edges	2 - 4	4 - 9	4 - 20	5 - 20	3 - 5	6 - 8	5 - 11
	Insert	ADHX17/ADKX17	ADHX17/ADKX17	LNMU	XNMU	WNEU	WNEU	WNEU/WNEX
	Machining	▽▽▽	▽▽▽	▽▽▽	▽▽▽	▽▽▽	▽▽▽	▽▽▽
	Catalogue page	17.35	17.35	17.36	17.37	17.38	17.38	17.38
	ISO code	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling	● ● ● ● ●	● ● ● ● ●	● ●	● ●	● ● ●	● ● ●	● ● ●
	Angular milling	● ● ● ● ●	● ● ● ● ●	● ●	● ●	● ● ●	● ● ●	● ● ●
	Groove milling	● ● ● ● ●	● ● ● ● ●	● ●	● ●	● ● ●	● ● ●	● ● ●
	Pocket milling		● ● ● ● ●			● ● ●	● ● ●	● ● ●
	Contour milling							
	Chamfer milling							
	Keyway milling							
	Hole machining							

		CERATIZIT	CERATIZIT	CERATIZIT	ATORN®	ATORN®	HHW
		Angular milling cutter					
●	1. Choice	17681	17680	17682	17505	17735	17662
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
	Version						
	Diameter	32	32	40 - 160	10 - 40	20 -32	20 - 32
	Number of cutting edges	2	2	3 - 14	1 - 5	3 - 4	2 - 4
	Insert	SNUH 12	SNUH 12	SNUH 12	APKT/APHX	LN.X	SOMT
	Machining				▽▽	▽▽▽▽	▽▽▽
	Catalogue page	17.39	17.39	17.39	17.28	17.45	17.44
	ISO code	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling	◑ ◑ ◑ ◑ ◑	◑ ◑ ◑ ◑ ◑	◑ ◑ ◑ ◑	◑ ◑ ◑ ◑	● ● ● ●	◑ ◑
	Angular milling	● ● ● ● ●	● ● ● ● ●	● ● ● ●	◕ ◕ ◕ ◕	● ● ● ●	● ●
	Groove milling	● ● ● ● ●	● ● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ●
	Pocket milling						
	Contour milling						
	Chamfer milling						
	Keyway milling						
	Hole machining						

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

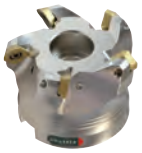
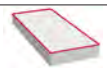
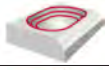
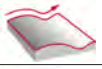
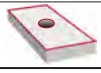
eng/P

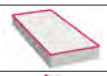
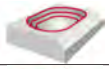
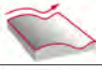
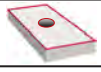
Overview of indexable insert milling tools (III)

		Angular milling cutter					
●	1. Choice	17882	17507	17882	17755	17736	17742
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
Version							
Diameter		12 - 40	10 - 40	20 - 32	40 - 250	40 - 160	40 - 125
Number of cutting edges		1 - 6	1 - 5	2 - 5	4 - 16	5 - 10	4 - 9
Insert		XD..	APKT/APHX	XD..	APKT/APHX	LN.X	SDMT
Machining		▽▽▽	▽▽	▽▽▽	▽▽	▽▽	▽▽▽
Catalogue page		17.41	17.28	17.41	17.29	17.45	17.43
ISO code		P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
Face milling		● ● ● ● ◑	◑ ◑ ◑ ◑	● ● ● ● ◑	◑ ◑ ◑ ◑	● ● ● ●	◕ ◕
Angular milling		● ● ● ● ◑	◕ ◕ ◕ ◕	● ● ● ● ◑	● ● ● ●	● ● ● ●	● ●
Groove milling		● ● ● ● ◑	● ● ● ●	● ● ● ● ◑	◕ ◕ ◕ ◕		◕ ●
Pocket milling							
Contour milling							
Chamfer milling							
Keyway milling							
Hole machining							

		Angular milling cutter		Face-milling cutter			
●	1. Choice	17662	17882	17534	17876	17873	17876
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
Version							
Diameter		40 - 63	40 - 160	24 - 40	18.9 - 32	32 - 40	18.9 - 32
Number of cutting edges		5 - 7	4 - 14	2 - 4	3 - 5	3 - 4	3 - 5
Insert		SOMT	XD..	SEHT	OF../SF..	OAKU	OF../SF..
Machining		▽▽	▽▽▽	▽▽	▽▽	▽▽	▽▽▽
Catalogue page		17.44	17.41	17.65	17.63	17.68	17.63
ISO code		P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
Face milling		◑ ◑	● ● ● ● ◑	● ● ●	● ● ● ● ●	● ● ●	● ● ● ● ●
Angular milling		● ●	● ● ● ● ◑				
Groove milling		● ●	● ● ● ● ◑				
Pocket milling				◔ ◔ ◔			
Contour milling							
Chamfer milling				● ● ●	● ● ● ● ●	● ● ●	
Keyway milling							
Hole machining							

Overview of indexable insert milling tools (IV)

		ATORN	ATORN	ATORN	ATORN	CERATIZIT	CERATIZIT
		Face-milling cutter					
●	1. Choice	17720	17722	17728	17728	17876	17873
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
Version					Left		
Diameter		40 - 250	50 - 250	50 - 250	50 - 125	30.7 - 125	40 - 125
Number of cutting edges		3 - 8	4 - 20	4 - 13	4 - 7	4 - 13	4 - 12
Insert		SEHT	SNEX/SNMX	SEEN	SEEN	OF../SF..	OAKU
Machining		▽▽▽▽▽▽	▽▽▽▽▽▽	▽▽▽▽▽▽	▽▽▽▽▽▽	▽▽▽	▽▽▽
Catalogue page		17.65	17.62	17.66	17.66	17.64	17.68
ISO code		P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling	● ● ●	● ● ● ●	● ● ●	● ● ●	● ● ● ● ●	● ● ●
	Angular milling						
	Groove milling						
	Pocket milling						
	Contour milling						
	Chamfer milling	◕ ◕ ◕	◕ ◕ ◕ ◕	◕ ◕ ◕	◕ ◕ ◕	● ● ● ● ●	● ● ●
	Keyway milling						
	Hole machining						

		HHW	ATORN	ATORN	HHW	HHW	HHW
		Face-milling cutter	Spiral milling cutter (Igel)		HPC milling cutter		
●	1. Choice	17739	17510	17753	17660	17660	17660
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
Version			DIN 1835 B				
Diameter		50 - 100	20 - 40	40 - 100	25 - 32	25 - 40	40 - 80
Number of cutting edges		4 - 8	1 - 3	3 - 6	2	2 - 4	4 - 5
Insert		HNGJ	APKT/APHX	APKT/APHX	ZDCW	ZDCW/ZDEW	ZDCW/ZDEW
Machining		▽▽▽▽▽▽	▽▽	▽▽	▽	▽	▽
Catalogue page		17.67	17.29	17.30	17.51	17.51	17.51
ISO code		P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling	● ● ● ● ● ●			● ● ●	● ● ● ●	● ● ● ●
	Angular milling		● ● ● ●	● ● ● ●			
	Groove milling		● ● ● ●	● ● ● ●			
	Pocket milling				● ● ●	● ● ● ●	● ● ● ●
	Contour milling						
	Chamfer milling						
	Keyway milling						
	Hole machining						

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Fax order hotline: 0800 0 915910

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eng/P

Overview of indexable insert milling tools (V)

		HFC milling cutter			Aluminium plunge milling cutter		
●	1. Choice	17865	17865	17865	17560	17561	17562
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
	Version						
	Diameter	16 - 32	16 - 32	32 - 63	25 - 32	25 - 42	42 - 100
	Number of cutting edges	2 - 5	2 - 5	3 - 6	2	2 - 3	3 - 5
	Insert	XP..	XP..	XD..	VCGT/VPGT	VCGT/VPGT	VCGT
	Machining	▽	▽	▽	▽▽▽	▽▽▽	▽▽▽
	Catalogue page	17.52	17.52	17.52	17.47	17.47	17.47
	ISO code	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling	● ● ● ●	● ● ● ●	● ● ● ●	◔	◔	◔
	Angular milling				●	●	●
	Groove milling				●	●	●
	Pocket milling	● ● ● ●	● ● ● ●	● ● ● ●	●	●	●
	Contour milling	● ● ● ●	● ● ● ●	● ● ● ●	◑	◑	◑
	Chamfer milling						
	Keyway milling						
	Hole machining						

		Centring milling cutter	Copy milling cutter				
●	1. Choice	17536	17868	17613 - 17614	17868	17613 - 17615	17707
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
	Version						
	Diameter	20	10 - 32	15 - 20	20 - 42	15 - 42	52 - 125
	Number of cutting edges	1	2 - 5	2	2 - 7	2 - 6	4 - 8
	Insert	TCMX	RD../RP..	RDHX	RD../RP..	RDHX	OCKX/RCKX/XCKX
	Machining	▽▽▽	▽▽ ▽▽▽	▽▽ ▽▽▽	▽▽ ▽▽▽	▽▽ ▽▽▽	▽▽▽ ▽▽▽
	Catalogue page	17.59	17.55	17.53	17.55	17.53 - 17.54	17.61
	ISO code	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling		● ● ● ● ●	● ● ● ●	● ● ● ● ● ●	● ● ● ●	● ● ● ● ●
	Angular milling						
	Groove milling						
	Pocket milling			● ● ● ●		● ● ● ●	
	Contour milling		● ● ● ● ●	● ● ● ●	● ● ● ● ● ●	● ● ● ●	● ● ● ● ●
	Chamfer milling						
	Keyway milling						
	Hole machining	● ● ● ●					

Overview of indexable insert milling tools (VI)

		CERATIZIT		ATORN®	ATORN®	ATORN®	ATORN®
		Copy milling cutter		End-of-use milling cutter	Chamfer milling cutter		
●	1. Choice	17868	17614 - 17616	17750	17527	17529	17536
◕	Alternative						NEW
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
	Version				DIN 1835 B	DIN 1835 B	DIN 1835 B
	Diameter	40 - 100	42 - 100	50 - 125	1.2 - 20	10 - 42.3	16
	Number of cutting edges	3 - 10	4 - 7	3 - 7	1 - 2	1 - 3	1
	Insert	RP..	RDHX	APKT/APHX	TCMT	SCMT	SEEX
	Machining	▽▽ ▽▽▽	▽▽ ▽▽▽	▽ ▽▽	▽▽ ▽▽▽	▽▽ ▽▽▽	▽▽ ▽▽▽
	Catalogue page	17.56	17.53 - 17.54	17.31	17.58	17.58	17.59
	ISO code	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling	● ● ● ● ●	● ● ● ● ●	● ● ● ●			
	Angular milling						
	Groove milling						
	Pocket milling		● ● ● ● ●				
	Contour milling	● ● ● ● ●	● ● ● ● ●				
	Chamfer milling				● ● ● ●	● ● ●	● ● ●
	Keyway milling						
	Hole machining					● ● ●	

		ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®
		Chamfer milling cutter	Adjustable counter-bore milling cutter	T-grooving milling cutter	Boring and counterboring bit		
●	1. Choice	17760	17526	17540	17576	17577	17578
◕	Alternative						
◑	May be possible						
◔	Can be used to a limited extent						
▽	Roughing						
▽▽	Medium machining						
▽▽▽	Finishing						
	Version		DIN 1835 B	DIN 1835 A DIN 1835 B	DIN 1835 A DIN 1835 B	DIN 1835 A DIN 1835 B	DIN 1835 B
	Diameter	33 - 90	20 - 25	21 - 50	9.8 - 33	16 - 42	10 - 45
	Number of cutting edges	6 - 9	1	2 - 4	1	2	1
	Insert	APKT/APHX	TCMT/SCMT	SPMT	CC...	CC..	CC..
	Machining	▽ ▽▽	▽▽ ▽▽▽	▽	▽▽ ▽▽▽	▽▽ ▽▽▽	▽▽ ▽▽▽
	Catalogue page	17.30	17.57	17.60	17.49	17.50	17.50
	ISO code	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
	Face milling						
	Angular milling						
	Groove milling			● ● ●			
	Pocket milling						
	Contour milling						
	Chamfer milling	● ● ● ●	● ●				
	Keyway milling						
	Hole machining		● ●		● ● ● ●	● ● ● ●	● ● ● ●

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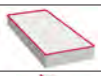
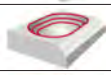
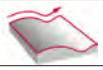
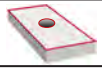
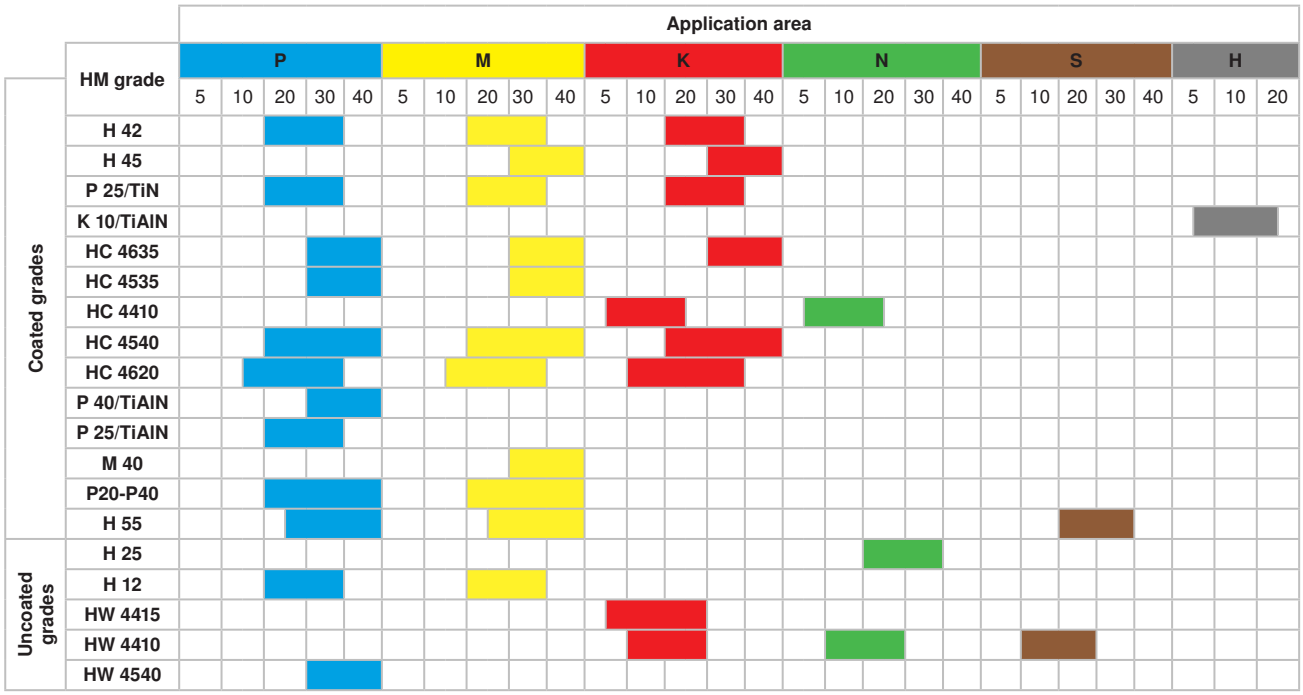
Overview of indexable insert milling tools (VII)

		ATORN®	ATORN®	ATORN®	ATORN®
		Boring and counterboring bit		Disc milling cutter	
●	1. Choice	17570	17570	17780	17782
◕	Alternative				
◑	May be possible				
◔	Can be used to a limited extent				
▽	Roughing				
▽▽	Medium machining				
▽▽▽	Finishing				
Version					
Diameter		18 - 76	15 - 31	63 - 250	63 - 160
Number of cutting edges		1	1	3 - 12	3 - 8
Insert		CC...	TCMT	SNHX	SNHX
Machining		▽▽ ▽▽▽	▽▽ ▽▽▽	▽▽	▽▽
Catalogue page		17.48	17.48	17.69	17.70
ISO code		P M K N S H	P M K N S H	P M K N S H	P M K N S H
Face milling					
Angular milling					
Groove milling					
Pocket milling					
Contour milling					
Chamfer milling					
Keyway milling				● ● ●	● ● ●
Hole machining		● ● ● ●	● ● ●		

Technical information for ISO milling inserts (I)

ATORN® HW



		ISO P	ISO M	ISO K	ISO N	ISO S	ISO H		
Coated grade	H 42	P20-P30	M20-M30	K20-K30				Universal grade	Average cutting speed, average chip cross section
	H 45		M30-M40	K30-K40				Titanium and titanium alloys, austenitic and martensitic VA, Inconel	Average cutting speed, milling of VA using coolant, wear-resistant grade
	P 25/TiN	P20-P30	M20-M30	K20-K30				Universal grade	Average cutting speed, average chip cross section
	K 10/TiAlN						K05-K15	Hardened materials	Suitable for dry milling
	HC 4635	P30-P40	M35-M40					Steel, alloy steel, tool steel, titanium and titanium alloys, austenitic and martensitic VA, Inconel	Average cutting speed, milling of VA using coolant, high resistance to breakouts
	HC 4535	P20-P40	M20-M40	K20-K40				Steel, alloy steel, tool steel, GG, GGG, titanium and titanium alloys, austenitic and martensitic VA, Inconel	Average cutting speed, milling of VA using coolant, high resistance to breakouts
	HC 4410			K05-K15	N05-N15			Aluminium and aluminium alloys, GG, GGG	High cutting speed and feed rate
	HC 4540	P20-P40	M20-M40	K20-K40				Steel, alloy steel, tool steel, GG, GGG, VA	Average cutting speed, milling of VA using coolant
	HC 4620	P15-P30	M15-M30	K10-K30				Steel, cast steel, alloy steel, tool steel	For difficult milling and interrupted cutting, maximum service lives
	P 40/TiAlN	P30-P40						Steel, cast steel, alloy steel, tool steel	High wear-resistant grade
	P 25/TiAlN	P20-P30						Steel, cast steel, alloy steel, tool steel	Tough grade, even for interrupted cuts
	M 40		M30-M40					VA	Average cutting speed, average feed rate
	P20-P40	P20-P40	M20-M40					Universal grade	Average cutting speed, average chip cross section
Uncoated grade	H 25				N20-N30			Aluminium and aluminium alloys	High cutting speed and feed rate
	H 12	P20-P30	M20-M30					Universal grade	Average cutting speed, average chip cross section
	HW 4415			K05-K20				Aluminium and copper alloys	Light to medium-heavy machining
	HW 4410			K10-K20	N10-N20	S10-S20	S10-S20	GG over 220 HB, GTW, aluminium and copper alloys, high heat-resistant alloys	Light to medium-heavy chip machining
	HW 4540	P30-P40						Steel and cast steel, alloy steel, tool steel	For difficult milling and interrupted cutting

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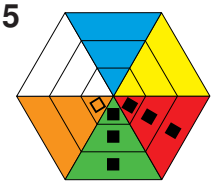
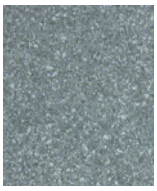
Technical information for ISO milling inserts (II)

CUTTING SOLUTIONS BY CERATIZIT

CUTTING SOLUTIONS BY CERATIZIT PREMIUM PARTNER

CTW4615
HW-K15

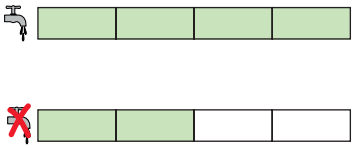




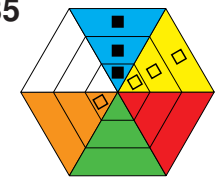
Ductility
0 2 4 6 8 10

Wear resistance
0 2 4 6 8 10

Wet / dry



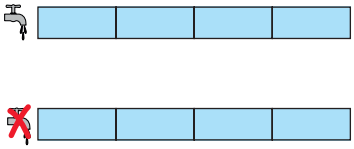
CTPP235
HC-P35
HC-M30



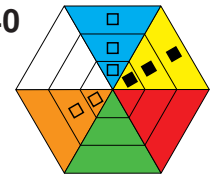
Ductility
0 2 4 6 8 10

Wear resistance
0 2 4 6 8 10

Wet / dry



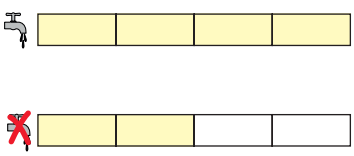
CTPM240
HC-P40
HC-M40



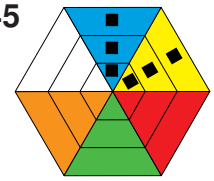
Ductility
0 2 4 6 8 10

Wear resistance
0 2 4 6 8 10

Wet / dry



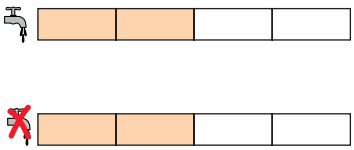
CTPM245
HC-M45
HC-P45



Ductility
0 2 4 6 8 10

Wear resistance
0 2 4 6 8 10

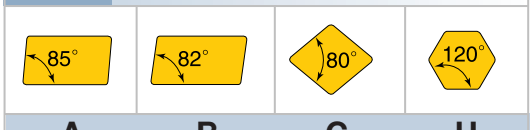
Wet / dry



Chip deflection step overview - milling

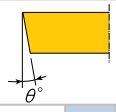
Info — Standard designation for milling inserts (I)

1 INSERT SHAPE



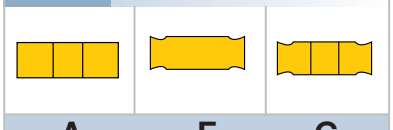
A	B	C	H
L	M	O	P
R	S	T	W

2 CLEARANCE ANGLE



B	5°	F	25°
C	7°	G	30°
D	15°	N	0°
E	20°	P	11°

4 INSERT TYPE



A	F	G
M	N	R
T	W	X

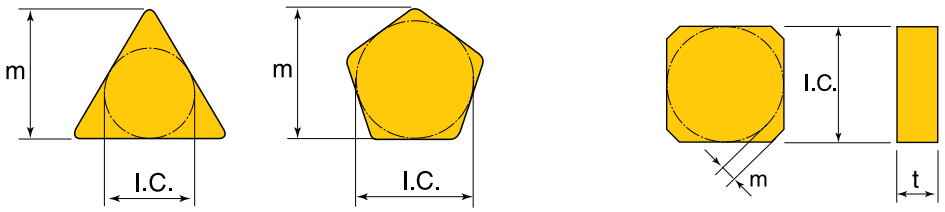
Special

S P K N

1 2 3 4

3 TOLERANCE CLASS

Class	Tolerance (mm)			I.C. Dimensions (mm)					
	m	t	I.C.	06:35	9,525	12.7	15,875	19:05	25.4
A	± 0.005	± 0.025	± 0.025	•	•	•	•	•	•
E	± 0.025	± 0.025	± 0.025	•	•	•	•	•	•
F	± 0.005	± 0.025	± 0.013	•	•	•	•	•	•
g	± 0.025	± 0.13	± 0.025	•	•	•	•	•	•
H	± 0.013	± 0.025	± 0.013	•	•	•	•	•	•
K	± 0.013	± 0.025	± 0.05	•	•				
			± 0.08			•			
			± 0.10				•	•	
			± 0.13						•
M	± 0.08	± 0.13	± 0.05	•	•				
	± 0.13		± 0.08			•			
	± 0.15		± 0.10				•	•	
			± 0.13						•



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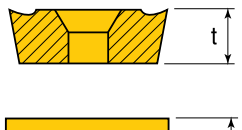
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

eng/P

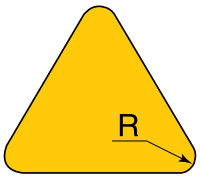
Standard designation for milling inserts (II)

6 INSERT THICKNESS (mm)



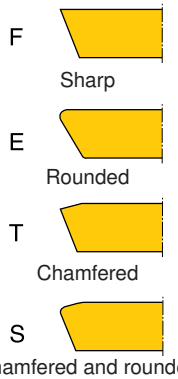
01t = 1.59	05t = 5.56
02t = 2.38	06t = 6.35
03t = 3.18	07t = 7.94
T3t = 3.97	09t = 9.52
04t = 4.76	

7 CORNER RADIUS (mm)

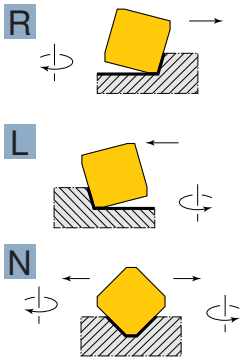


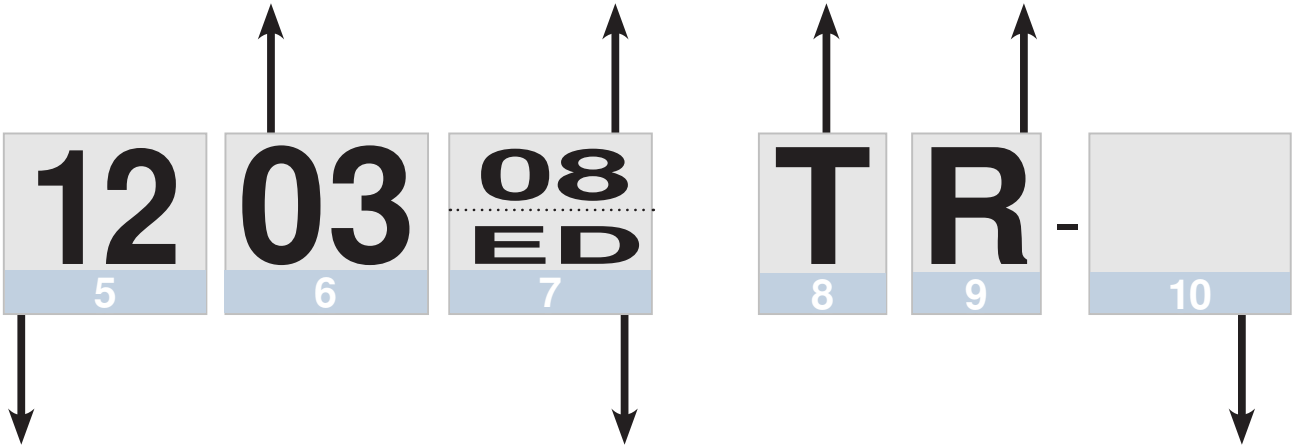
00R = round	
02R = 0.2	15R = 1.5
04R = 0.4	16R = 1.6
05R = 0.5	24R = 2.4
08R = 0.8	32R = 3.2
10R = 1.0	40R = 4.0
12R = 1.2	

8 CUTTING EDGE VERSION

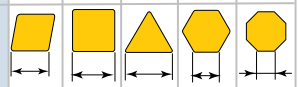


9 CUTTING DIRECTION



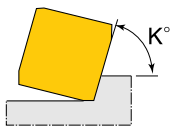


5 CUTTING EDGE LENGTH

	Insert shape				
I.C	C	R,S	T	H	O
5.56			09		
6.35	06	06	11		
7.94	08		13		
9.525	09	09	16		
12.7	12	12	22		05
15.875	16	15	27	09	
17.94					07
19.05	19	19	33	10	
25.4	25	25			
L					

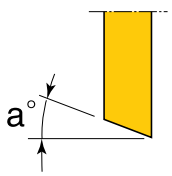
7 CORNER

Setting angle face cutting



A = 45°
D = 60°
E = 75°
F = 85°
P = 90°
Z = Special

Clearance angle face cutting



B = 5°	F = 25°
C = 7°	G = 30°
D = 15 °	N = 0°
E = 20°	P = 11°
Z = Special	

10 ADDITIONAL INFORMATION

This information is not part of the standard, and is therefore optional to the supplier.
E.G. – 14 for chip forming geometry

17500 Angular milling cutters, 90°

ATORN®

NEW

Design
- Soft cutting due to the positive installation position of the indexable insert
- Smooth milling behaviour of tools
- Precise 90° angular milling
- Axial runout max. 0.03 mm
- Radial runout max. 0.03 mm
- Supplied with clamping screw and wrench
- **Without** indexable inserts

DIN 1835 HA

17500 101-108

with shank

Ø D mm	Ø d mm	L mm	L1 mm	p mm	Z	17500	...
10	10	100	28	5.2	2		101
12	12	100	30	5.2	3		102
14	12	120	32	5.2	3		103
16	16	120	32	5.2	4		104
18	16	120	32	5.2	4		105
20	20	150	35	5.2	5		106
25	20	150	35	5.2	7		107
32	25	150	35	5.2	8		108

17500 140-142

with bore

Ø D mm	Ø d mm	H mm	p mm	Z	17500	...
32	16	40	5.2	8		140
40	16	40	5.2	10		141
50	22	40	5.2	11		142

17500 120-124

with thread

Ø D mm	D1 mm	L mm	L1 mm	M	p mm	Z	17500	...
10	6.5	16	14.5	M6	5.2	2		120
12	6.5	16	14.5	M6	5.2	3		121
16	8.5	21	17.5	M8	5.2	4		122
20	10.5	26	20.0	M10	5.2	5		123
25	12.5	30	22.0	M12	5.2	7		124

17500 130-132

DIN 1835 B

Long edge milling cutters with shank

Ø D mm	d mm	L mm	L1 mm	p mm	Z	Indexable inserts	17500	...
16	16	80	19.8	5.2	2	8		130
20	20	90	24.6	5.2	3	15		131
25	25	100	29.4	5.2	5	30		132

17808

Applications P M K
Coating TiN/PVD

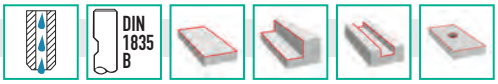
ISO designation	l mm	d mm	s mm	d1 mm	r mm	17808	...
APKT 060204	6.4	3.65	2.15	2.0	0.4		102

Spare parts

For indexable inserts size	TX size T	Clamping screw 17520	...	Wrench 52529	...
AP..0602	6		201		401

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

17501 Bore/counter sink milling cutters, 90°



ATORN®

Design
- **Positive**
- Right cutting
- **With centre cutting**
- Angle of attack 90°
- Straight shank with driving surface in accordance with DIN 1835 B
- **Without** indexable inserts

Applications
For plunge milling, face milling and circular milling.

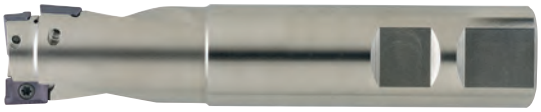
Note:
For indexable inserts see art. no. 17809–17811.

17501 102-104

Short

Ø D mm	Ø d h6 mm	H mm	h mm	L mm	Z	Z eff.	Indexable inserts	17501	...
20	20	90	17	35	2	1	AP..1003		**102**
25	25	110	19	50	2	1	AP..1003		**103**
32	32	130	30	50	2	1	AP..1604		**104**

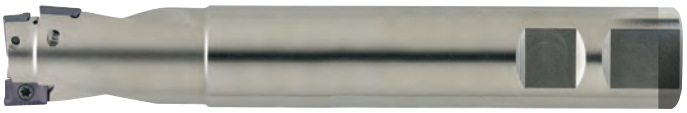
17501 110-111



Long

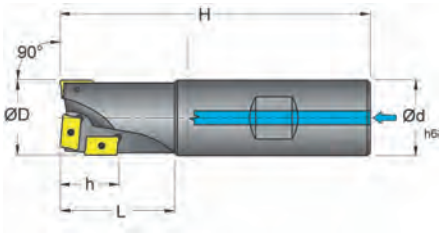
Ø D mm	Ø d h6 mm	H mm	h mm	L mm	Z	Z eff.	Indexable inserts	17501	...
20	20	150	17	30	3	1	AP..1003		**110**
25	25	150	19	50	3	1	AP..1003		**111**

17501 120-122



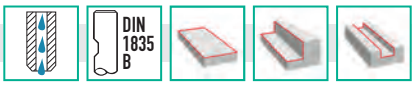
Extra long

Ø D mm	Ø d h6 mm	H mm	h mm	L mm	Z	Z eff.	Indexable inserts	17501	...
20	20	180	17	30	3	1	AP..1003		**120**
25	25	200	19	50	3	1	AP..1003		**121**
32	32	220	30	50	3	1	AP..1604		**122**



Spare parts		Clamping screw		Key	
For indexable inserts size	TX size T	17520	...	52529	...
AP..1003	8		**202**		**403**
AP..1604	15		**205**		**406**

17505 End mills, 90°



ATORN®

Design
- Straight shank with driving surface in accordance with DIN 1835 B
- Positive
- Right cutting
- **Without** indexable inserts

17505 126-127
Without internal cooling.

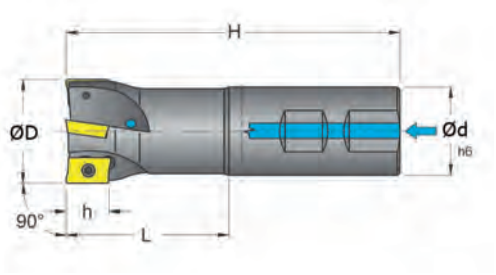
Applications
For excellent machining performance, for processing steel and cast materials, and for high-alloy steels.

Note:
For indexable inserts see art. no. 17809–17811.

17505

Short

Ø D mm	Ø d mm	H mm	L mm	h mm	Z	Indexable inserts	17505	...
10	16	80	24	10	1	AP..1003		**101**
11	16	80	24	10	1	AP..1003		**110**
12	16	80	24	10	1	AP..1003		**103**
13	16	80	24	10	1	AP..1003		**118**
14	16	80	24	10	1	AP..1003		**105**
15	16	85	25	10	2	AP..1003		**120**
15.7	16	85	25	10	2	AP..1003		**130**
16	16	85	25	10	2	AP..1003		**107**
17	16	85	25	10	2	AP..1003		**128**
18	20	85	25	10	2	AP..1003		**109**
19.7	20	90	25	10	3	AP..1003		**131**
20	20	90	25	10	3	AP..1003		**111**
22	25	95	25	10	3	AP..1003		**129**
24.7	25	95	25	10	4	AP..1003		**132**
25	25	95	25	10	3	AP..1003		**133**
25	25	95	25	10	4	AP..1003		**113**
28	25	95	25	10	4	AP..1003		**134**
30	25	95	25	10	4	AP..1003		**135**
32	25	95	26	10	5	AP..1003		**115**
25	25	100	44	17	2	AP..1604		**117**
32	32	110	50	17	3	AP..1604		**119**
40	32	115	45	17	4	AP..1604		**121**



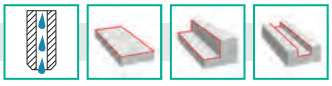
Long

Ø D mm	Ø d mm	H mm	L mm	h mm	Z	Indexable inserts	17505	...
10	16	150	24	10	1	AP..1003		**102**
12	16	150	24	10	1	AP..1003		**104**
16	16	150	100	10	2	AP..1003		**122**
18	16	150	25	10	2	AP..1003		**137**
20	20	150	100	10	3	AP..1003		**123**
25	20	150	25	10	4	AP..1003		**124**
25	25	**200**	60	17	2	AP..1604		**126**
32	25	150	90	10	5	AP..1003		**125**
32	32	**200**	60	17	3	AP..1604		**127**

Spare parts

For indexable inserts size	TX size T	Clamping screw 17520	...	Wrench 52529	...
AP..1003	8		**202**		**403**
AP..1604	15		**205**		**406**

17507 Screw-in milling cutters, 90°



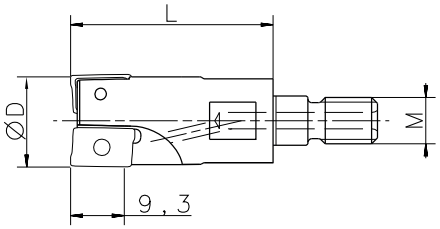
ATORN®

Design
- Soft cutting due to the positive installation position of the indexable insert
- High radial and axial runout accuracy of 0.03 mm
- **Without** indexable inserts

Note:
For milling arbours see cat. size 21, art. no. 17676.
For indexable inserts see art. no. 17809–17811.

17507

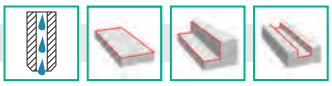
Ø D mm	L mm	M mm	D_1 mm	Z	Indexable inserts	17507	...
10	20	M 6	6.5	1	AP..1003		**101**
12	20	M 6	6.5	1	AP..1003		**102**
16	25	M 8	8.5	2	AP..1003		**103**
20	30	M 10	10.5	3	AP..1003		**104**
25	35	M 12	12.5	4	AP..1003		**106**
32	43	M 16	17.0	5	AP..1003		**107**
32	46	M 16	17.0	3	AP..1604		**108**
40	46	M 16	17.0	4	AP..1604		**109**



Spare parts

For indexable inserts size	TX size T	Clamping screw 17520	...	Wrench 52529	...
AP..1003	8		**202**		**403**
AP..1604	15		**205**		**406**

17755 Angular milling cutter 90°



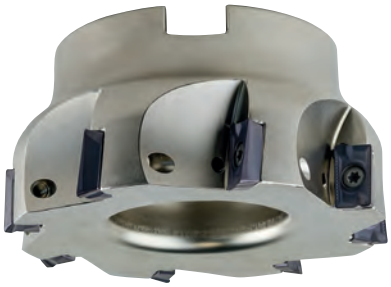
ATORN®

Design
- **Positive**
- **Right cutting**
- **With internal cooling (except art. no. 17755 112–114)**
- **Without** indexable inserts

Applications
For excellent machining performance.

17755

Note:
For indexable inserts see art. no. 17809–17811.

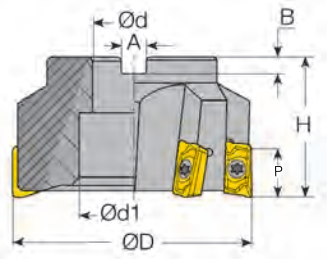


For indexable inserts AP.. 1003

Ø D mm	Ø d1 mm	Ø d H7 mm	H mm	Z	p mm	Indexable inserts	17755 ...
40	17	16	40	6	10	AP..1003	101
50	17	22	40	7	10	AP..1003	102
63	17	22	40	8	10	AP..1003	103
80	20	27	50	11	10	AP..1003	109
100	26	32	50	12	10	AP..1003	110

For indexable inserts AP.. 1604

Ø D mm	Ø d1 mm	Ø d H7 mm	H mm	Z	p mm	Indexable inserts	17755 ...
40	12	16	40	4	17	AP..1604	104
50	18	22	40	5	17	AP..1604	105
63	18	22	40	6	17	AP..1604	106
80	20	27	50	7	17	AP..1604	107
100	45	32	50	8	17	AP..1604	108
125	56	40	63	9	17	AP..1604	111
160	87	40	63	10	17	AP..1604	112
200	-	60	63	13	17	AP..1604	113
250	-	60	63	16	17	AP..1604	114



Spare parts

For indexable inserts size	TX size T	Clamping screw 17520 ...	Wrench 52529 ...
AP..1003	8	202	403
AP..1604	15	205	406

17510 Spiral end mills, 90° (porcupine)

ATORN®

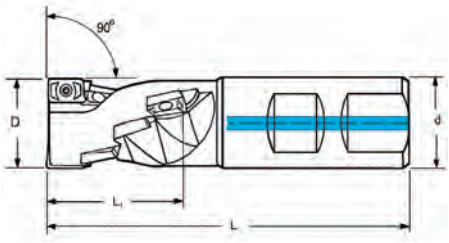
Design
- **Positive**
- Right cutting
- Straight shank with driving surface in accordance with DIN 1835 B
- **Without** indexable inserts

Note:
For indexable inserts see cat. no. 17809–17811.

17510

For indexable inserts AP.. 1003

Ø D mm	d mm	L_1 mm	L mm	Z	Z effective	Indexable inserts	17510 ...
20	20	28	86	4	1	AP..1003	102
25	25	37	105	8	2	AP..1003	103
32	32	46	115	12	2	AP..1003	104
40	32	54	128	18	3	AP..1003	107



For indexable inserts AP.. 1604

Ø D mm	d mm	L1 mm	L mm	Z	Z effective	Indexable inserts	17510 ...
25	25	29	105	2	1	AP..1604	108
32	32	44	115	6	2	AP..1604	105
40	32	58	130	8	2	AP..1604	106

Spare parts

For indexable inserts size	TX size T	Clamping screw 17520 ...	Wrench 52529 ...
AP..1003	8	202	403
AP..1604	15	205	406

17753 Porcupine milling cutter, 90°

ATORN®

Design
- **Positive**
- Right-hand cutting
- Only one insert type for face and circumferential cutting edge
- Arrangement with high right-hand twist for good chip formation
- Full overlap within a row of teeth
- Supplied with clamping screws and wrench
- **Without** indexable inserts

Note:
For indexable inserts see art. no. 17809–17811.

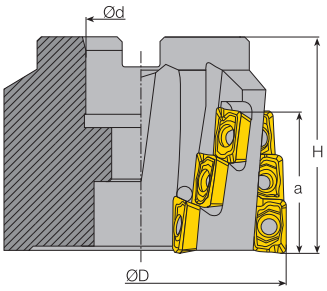
17753

For indexable inserts AP.. 1003

Ø D mm	Ø d mm	a mm	H mm	Indexable inserts	Z	Z eff.	17753	...
40	16	37	50	AP..1003	12	3		098
50	22	46	60	AP..1003	15	3		099
63	27	46	60	AP..1003	20	4		100

For indexable inserts AP.. 1604

Ø D mm	Ø d mm	a mm	H mm	Indexable inserts	Z	Z eff.	17753	...
50	27	30	55	AP..1604	6	3		101
63	27	44	60	AP..1604	12	4		102
80	32	44	60	AP..1604	15	5		103
100	40	44	60	AP..1604	18	6		104



Spare parts For indexable inserts size	TX size T	Clamping screw 17520	...	Wrench 52529	...
AP..1003	8		202		403
AP..1604	15		205		406

17760 Chamfer cutters

ATORN®

Design
- Milling jig with clamping screws and wrench
- **Without** indexable inserts

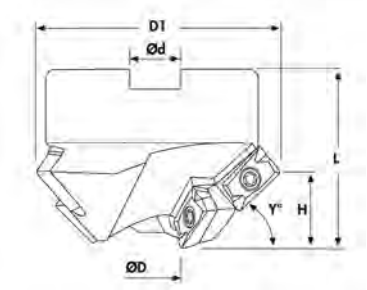
Applications
For chamfering 15° to 75° bevels.

Note:
For indexable inserts see art. no. 17809–17811.

17760

For indexable inserts AP.. 1003

Y	Ø D mm	D1 mm	Ø d mm	L mm	H mm	No. of tooth rows	Z	17760	...
15°	17	70	22	50	7	3	9		096
30°	17	65	22	50	13	3	9		097
40°	17	60	22	50	17	3	9		106
45°	17	56	22	50	19	3	9		098
60°	17	45	16	50	24	3	9		099
75°	19	33	16	60	27	3	9		100



For indexable inserts AP.. 1604

Y	Ø D mm	D1 mm	Ø d mm	L mm	H mm	No. of tooth rows	Z	17760	...
15°	35	90	27	50	8.0	3	6		101
30°	35	85	27	50	15.0	3	6		102
40°	35	84	27	50	19.0	3	6		107
45°	35	75	27	50	21.5	3	6		103
60°	35	62	27	50	26.5	3	6		104
75°	35	45	22	60	29.5	3	6		105

Spare parts For indexable inserts size	TX size T	Clamping screw 17520	...	Wrench 52529	...
AP..1003	8		202		403
AP..1604	15		205		406

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

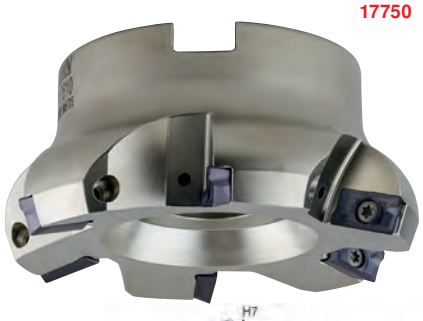
17750 Face milling cutters, 75° (consumable milling cutters)

ATORN®

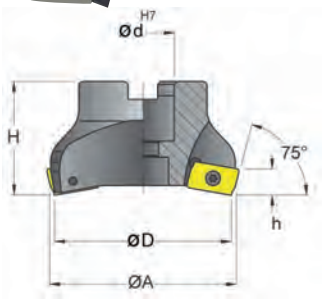
Design
- **Positive**
- Right cutting
- **Without** indexable inserts

Note:
For indexable inserts see art. no. 17809–17811.

17750



Ø D mm	Ø A mm	Ø d H7 mm	H mm	Z	Indexable inserts	17750	...
50	54	16	40	3	AP..1604		201
63	67	22	40	4	AP..1604		202
80	84	27	50	5	AP..1604		203
100	104	32	50	6	AP..1604		204
125	129	40	63	7	AP..1604		205



Spare parts		Clamping screw 10		Wrench	
For indexable inserts size	TX size T	17520	...	52529	...
AP..1003	8		202		403
AP..1604	15		205		406

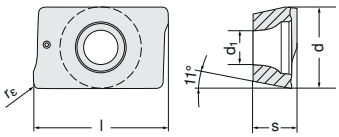
17809 Indexable milling inserts, APKT and APHX

ATORN®

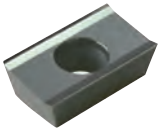
Design
- **Square**
- Positive 11°

17809 101+104
Design
- **Polished**

17809 102–103+105–106
Design
- With sintered chip breaker



17809 104



17809 105

17809 201+204

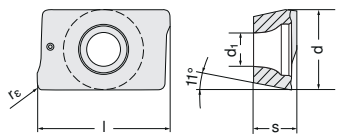
17809 110-111

Applications Cemented carbide grade Coating							N HW 4415 uncoated		P M K HC 4635 coated		M K HC 4535 coated		H HC 4615 coated	
ISO designation	l mm	d mm	s mm	d_1 mm	r		17809	...	17809	...	17809	...	17809	...
APHX100304 FR-ALU	10.5	6.35	3.18	2.85	0.4	10 pcs.		101						
APKT1003 PDER-S	10.5	6.35	3.18	2.85	0.5	10 pcs.				102		103		110
APKT1003 PDFR-R04	10.5	6.35	3.18	2.85	0.5	10 pcs.		201						
APHX160404 FR-ALU	17.0	9.52	4.76	4.40	0.4	10 pcs.		104						
APKT1604 PDER-S	17.0	9.52	4.76	4.40	0.8	10 pcs.				105		106		111
APKT1604 PDFR-R04	17.0	9.52	4.76	4.40	0.8	10 pcs.		204						

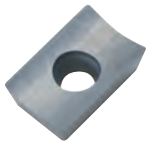
17810 - 17811 Indexable milling inserts, APKT

Design
- **Square**
- Positive 11°

17811
Design
- With sintered chip breaker



17810



17811

Applications Carbide type Coating							N H 25/Al Uncoated		P M H 55 TiAlN+TiN	
ISO designation	l mm	d mm	s mm	d_1 mm	r		17810	...	17811	...
APKT1003	10.5	6.35	3.18	2.85	0.5	10 pcs.		101		
APKT1003 PDFR	10.5	6.35	3.18	2.85	0.5	10 pcs.				101
APKT1604 PD	17.0	9.52	4.76	4.40	0.8	10 pcs.		104		
APKT1604 PDFR	17.0	9.52	4.76	4.40	0.8	10 pcs.				102

17550 - 17553 High performance angular milling cutters

ATORN®

Design
- Milling jig with uneven pitch
- The latest generation of high-performance angular milling cutters
- With geometry that reduces cutting forces
- **Precise 90° angular milling**
- Internal coolant feed

Advantage:
- Maximum smoothness with low power consumption
- Large selection of basic bodies and milling inserts
- Indexable inserts in four sizes with different corner radii
- Maximum precision
- High cutting performance
- Positive cutting geometry for a soft cut

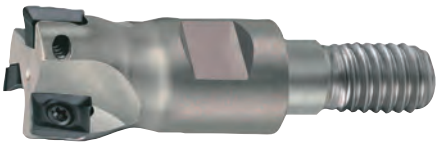
Applications
Ideally suited for almost any milling work even with **unstable conditions and low-performance machines.**

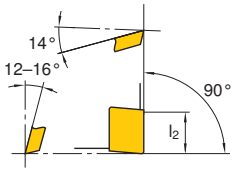
Indexable inserts
ADKX — precision-sintered milling inserts
ADHX — precision-ground milling inserts

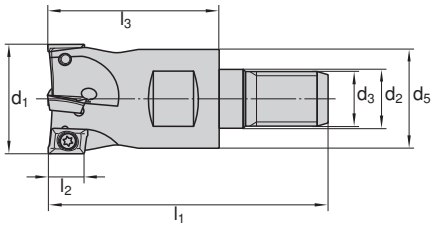
Screw-in milling cutters for insert size 06

Applications
For milling inserts AD.X 06..

17550 101-103





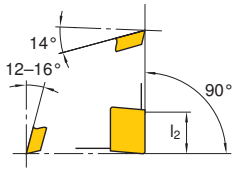


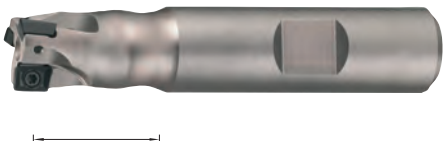
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_5 mm	d_3 mm	d_2 mm	Z	Indexable inserts	17550 ...
12	5.5	45	28	13	M 8	8.5	2	AD.X 06...	**101**
16	5.5	45	28	13	M 8	8.5	3	AD.X 06...	**102**
20	5.5	49	30	18	M 10	10.5	4	AD.X 06...	**103**

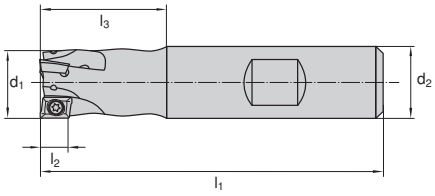
End mills for insert size 06

Applications
For milling inserts AD.X 06..

17550 110-114

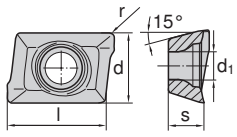




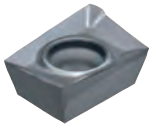


d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_2 mm	Z	Indexable inserts	17550 ...
10	5.5	60	20	10	1	AD.X 06...	**110**
12	5.5	70	25	12	2	AD.X 06...	**111**
16	5.5	76	28	16	3	AD.X 06...	**112**
20	5.5	86	36	20	4	AD.X 06...	**113**
25	5.5	86	36	20	6	AD.X 06...	**114**

Indexable inserts AD.X 06... and spare parts



17550 FR-ALC



17550 SR

Applications Carbide type Coating						N K P HC 4410 Coated		N HW 4410 Uncoated		P M K HC 4640 Coated	
ISO designation	**l mm**	**d mm**	**s mm**	**d_1 mm**	**r mm**	**17550**	**...**	**17550**	**...**	**17550**	**...**
ADHX 060202 FR-ALC	6.35	4.76	2.38	2.0	0.2		**201**		**211**		
ADKX 060202 SR	6.35	4.76	2.38	2.0	0.2		**202**				**221**
ADKX 060204 SR	6.35	4.76	2.38	2.0	0.4		**203**				**222**

		Clamping screw		Wrench	
Spare parts For indexable insert	**TX size T**	**17550**	**...**	**52529**	**...**
AD.X 06...	6		**130**		**401**

Continued ▶

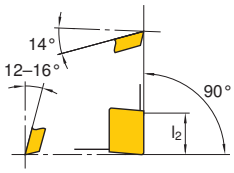
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

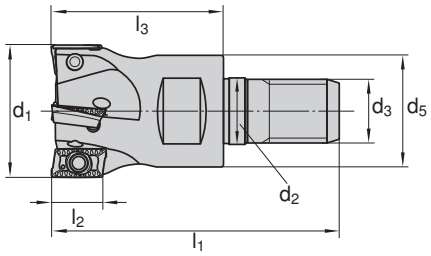
Continued

Screw-in milling cutters for insert size 09

Applications
For milling inserts AD.X 09..

17551 101-103



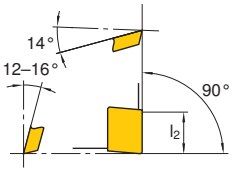


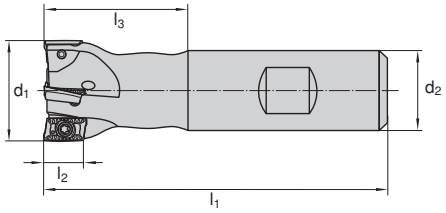
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_5 mm	d_3 mm	d_2 mm	Z	Indexable inserts	17551 ...
20	8.5	49	30	18	M 10	10.5	3	AD.X 09...	**101**
25	8.5	55	33	21	M 12	12.5	4	AD.X 09...	**102**
32	8.5	67	43	29	M 16	17.0	6	AD.X 09...	**103**

End mills for insert size 09

Applications
For milling inserts AD.X 09..

17551 110-115

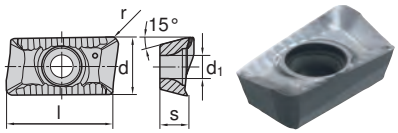




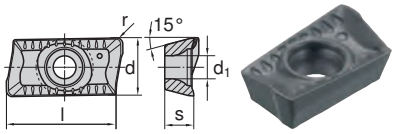
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_2 mm	Z	Indexable inserts	17551 ...
16	8.5	76	28	16	2	AD.X 09...	**110**
20	8.5	86	36	20	3	AD.X 09...	**111**
20	8.5	86	36	20	**4**	AD.X 09...	**112**
25	8.5	86	36	20	4	AD.X 09...	**113**
25	8.5	86	36	20	**5**	AD.X 09...	**114**
32	8.5	86	40	25	6	AD.X 09...	**115**

Indexable inserts AD.X 09... and spare parts

17551 FR-ALC



17551 SR-TR



Applications Carbide type Coating						NKP HC 4410 Coated		N HW 4410 Uncoated		PMK HC 4640 Coated		M HC 4540 Coated		M HC 4544 Coated	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm	17551	...	17551	...	17551	...	17551	...	17551	...
ADHX 090308 FR-ALC	9.52	5.56	3.18	2.8	0.8		**201**		**211**						
ADHX 090312 FR-ALC	9.52	5.56	3.18	2.8	1.2		**202**		**212**						
ADKX 090304 SR-TR	9.52	5.56	3.18	2.8	0.4		**203**				**221**				
ADKX 090308 SR-TR	9.52	5.56	3.18	2.8	0.8		**204**				**222**		**231**		**241**
ADKX 090312 SR-TR	9.52	5.56	3.18	2.8	1.2		**205**				**223**		**232**		**242**
ADKX 090316 SR-TR	9.52	5.56	3.18	2.8	1.6		**206**				**224**		**233**		**243**

		Clamping screw		Wrench	
Spare parts For indexable insert	TX size T	17551	...	52529	...
AD.X 09...	8		**130**		**403**

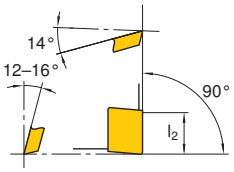
Continued

17550 - 17553 High performance angular milling cutters

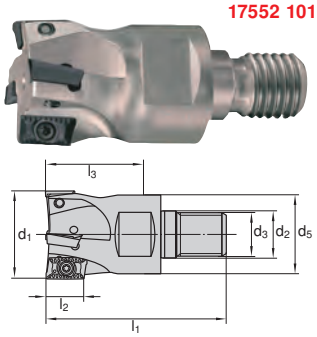
Continued

Screw-in milling cutters for insert size 12

Applications
For milling inserts AD.X 12..



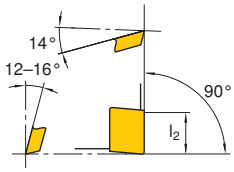
17552 101-102



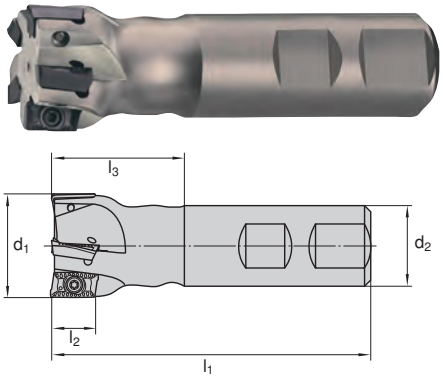
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_5 mm	d_3 mm	d_2 mm	Z	Indexable inserts	17552 ...
32	12	67	43	29	M 16	17	4	AD.X 12...	101
40	12	67	43	29	M 16	17	6	AD.X 12...	102

End mills for insert size 12

Applications
For milling inserts AD.X 12..



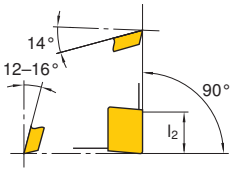
17552 110-114



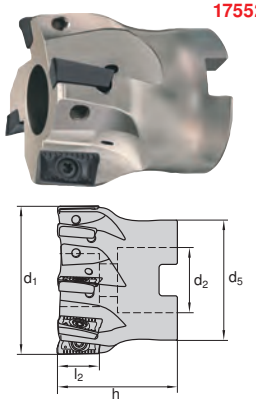
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_2 mm	Z	Indexable inserts	17552 ...
20	12	86	36	20	2	AD.X 12...	110
25	12	86	36	20	3	AD.X 12...	111
32	12	96	40	25	4	AD.X 12...	112
32	12	96	40	25	**5**	AD.X 12...	113
40	12	110	50	32	6	AD.X 12...	114

Cutters with bore for insert size 12

Applications
For milling inserts AD.X 12..



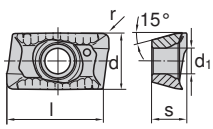
17552 120-125

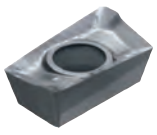


d_1 mm	l_2 mm	h mm	d_5 mm	d_2 mm	Z	Indexable inserts	17552 ...
40	12	40	32	16	4	AD.X 12...	120
40	12	40	32	16	**6**	AD.X 12...	121
50	12	40	40	22	5	AD.X 12...	122
50	12	40	40	22	**7**	AD.X 12...	123
63	12	40	50	22	6	AD.X 12...	124
63	12	40	50	22	**9**	AD.X 12...	125

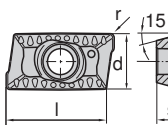
Indexable inserts AD.X 12... and spare parts

17552 FR-ALC





17552 SR-TR



Applications							N K P		N		P M K		M		M	
Carbide type							HC 4410		HW 4410		HC 4640		HC 4540		HC 4544	
Coating							Coated		Uncoated		Coated		Coated		Coated	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		17552	...	17552	...	17552	...	17552	...	17552	...
ADHX 120408 FR-ALC	12.7	7.4	4.76	3.4	0.8			201		211						
ADHX 120412 FR-ALC	12.7	7.4	4.76	3.4	1.2			202		212						
ADHX 120416 FR-ALC	12.7	7.4	4.76	3.4	1.6			203		213						
ADKX 120408 SR-TR	12.7	7.4	4.76	3.4	0.8			204				221		231		241
ADKX 120412 SR-TR	12.7	7.4	4.76	3.4	1.2			205				222		232		242
ADKX 120416 SR-TR	12.7	7.4	4.76	3.4	1.6			206				223		233		243
ADKX 120420 SR-TR	12.7	7.4	4.76	3.4	2.0			207				224				

		Clamping screw		Wrench	
Spare parts For indexable insert	TX size T	17552	...	52529	...
AD.X 12...	8		130		403

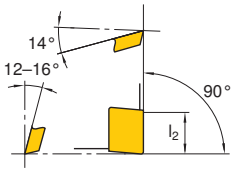
Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

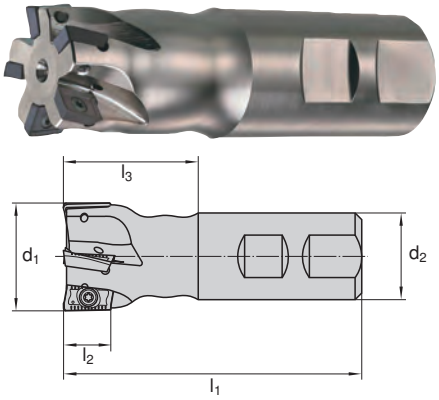
Continued

End mills for insert size 17

Applications
For milling inserts AD.X 17..



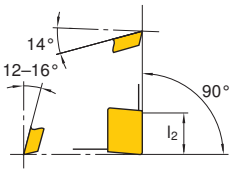
17553 110-112



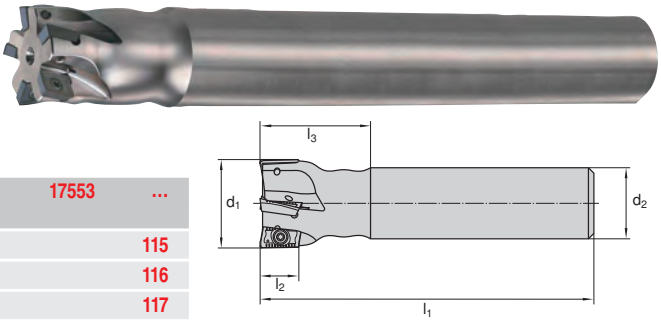
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_2 mm	Z	Indexable inserts	17553	...
25	16.5	96	40	25	2	AD.X 17...		110
32	16.5	110	50	32	3	AD.X 17...		111
40	16.5	110	50	32	4	AD.X 17...		112

End mills, long, for insert size 17

Applications
For milling inserts AD.X 17..



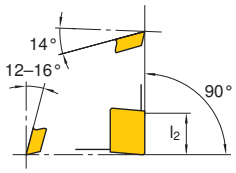
17553 115-117



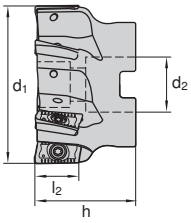
d_1 mm	l_2 mm	l_1 mm	l_3 mm	d_2 mm	Z	Indexable inserts	17553	...
25	16.5	200	40	25	2	AD.X 17...		115
32	16.5	250	50	32	3	AD.X 17...		116
40	16.5	250	50	32	4	AD.X 17...		117

Cutters with bore for insert size 17

Applications
For milling inserts AD.X 17..

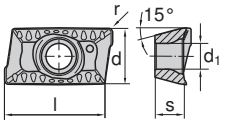


17553 120-124

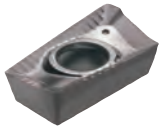


d_1 mm	H mm	d_2 mm	l_2 mm	Z	Indexable inserts	17553	...
40	36	16	16.5	4	AD.X 17...		120
50	40	22	16.5	5	AD.X 17...		121
63	40	22	16.5	6	AD.X 17...		122
80	50	27	16.5	8	AD.X 17...		123
100	50	32	16.5	9	AD.X 17...		124

Indexable inserts AD.X 17... and spare parts



17553 **FR-ALC**



17553 **SR-TR**

Applications		N K P		N		P M K		M		M		P K	
Carbide type		HC 4410		HW 4410		HC 4640		HC 4540		HC 4544		HC 4430	
Coating		Coated		Uncoated		Coated		Coated		Coated		Coated	
ISO designation	r mm	17553	...	17553	...	17553	...	17553	...	17553	...	17553	...
ADHX 170508 FR-ALC	0.8		201		211								
ADHX 170512 FR-ALC	1.2		202		212								
ADHX 170516 FR-ALC	1.6		203		213								
ADKX 170508 SR-TR	0.8		204				221						251
ADKX 170512 SR-TR	1.2		205				222		232		242		252
ADKX 170516 SR-TR	1.6		206				223		233		243		253
ADKX 170520 SR-TR	2.0		207				224		234		244		254

							Clamping screw		Wrench	
Spare parts For indexable insert	TX size T						17553	...	52529	...
AD.X 17...	8							130		403

Info — 17556 - 17557 - tangential angular milling cutters

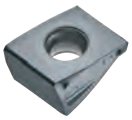
ATORN®

The tangential indexable insert milling system with 4 and 8 cutting edges has been developed for roughing and semi-finishing operations on steel and cast iron. The programme includes supports with diameters ranging from 50 to 160 mm and indexable inserts with cutting depths to 11.5 mm.

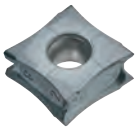
Tangential installation position for process reliability
The tangential installation position of the indexable inserts offers several characteristic features. The favourable ratio between the supporting surface and the clamping force provides maximum stability. Even at a high cutting performance, the tools make the process extremely reliable.

Profitability through good machining properties
The robust indexable inserts have a positive chip angle resulting in excellent cutting behaviour and low power consumption for the machine. This greatly increases the service life of the cutting edge, which has a direct and positive impact on the tool costs.

Cost savings through cycle time reduction
The ratio of the tool diameter to the number of teeth, combined with the high feed rates that are possible, enables huge material removal rates. This means much shorter cycle times are achieved, which significantly reduces the overall process costs or the cost per part.

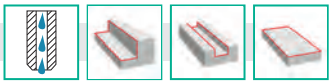


- 4-edged indexable insert for stable processes
- Feed depth to max. ap 11.5 mm
- Stable geometry for a wide range of applications



- 8-edged indexable insert for excellent cost efficiency
- Feed depth to max. ap 10 mm
- Soft cutting geometry for reduced chipping forces

17556 — Tangential angular milling cutters, 90° LNMU 1306



ATORN®

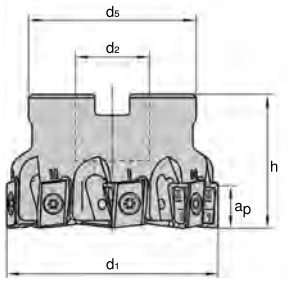
Design
- Angular milling cutter with tangentially arranged indexable inserts and 4 usable cutting edges
- Wear-resistant, nickel-plated version
- With internal cooling up to Ø 125 mm

Advantage:
- Cutting depth down to 11.5 mm

Note:
For clamping screws see art. no. 17557 501.

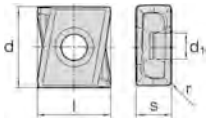
17556 101-112

Ø d_1 mm	h mm	d_2 mm	d_5 mm	ap mm	Z	Indexable inserts	17556 ...
50	40	22	40	11.5	4	LNMU 1306	101
50	40	22	40	11.5	6	LNMU 1306	102
63	40	22	50	11.5	6	LNMU 1306	103
63	40	22	50	11.5	8	LNMU 1306	104
80	50	27	60	11.5	8	LNMU 1306	105
80	50	27	60	11.5	10	LNMU 1306	106
100	50	32	65	11.5	10	LNMU 1306	107
100	50	32	65	11.5	12	LNMU 1306	108
125	63	40	90	11.5	12	LNMU 1306	109
125	63	40	90	11.5	16	LNMU 1306	110
160	63	40	130	11.5	14	LNMU 1306	111
160	63	40	130	11.5	20	LNMU 1306	112

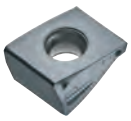


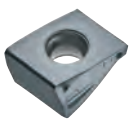
Indexable inserts

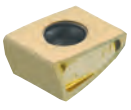
17556 201-221
Design
- 4-edged indexable insert for stable processes
- Feed depth to max. ap 11.5 mm
- Stable geometry for a wide range of applications



17556 201 | 17556 211 | 17556 221





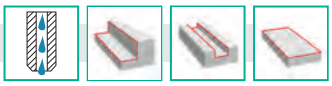


Applications						K	P K	P
Cemented carbide grade						HC 4420	HC 4430	HC 4640
Coating						coated	coated	coated
ISO designation	l mm	d mm	s mm	d_1 mm	r mm	17556 ...	17556 ...	17556 ...
LNMU 1306 SR	13.5	12.4	6	4.4	0.8	201	211	221

www.hhw.de
Fax order hotline: 0800 0 915910

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Tangential angular milling cutters, 90°, XNMU 1206



ATORN®

Design
- Angular milling cutter with tangentially arranged indexable inserts and 8 usable cutting edges
- Wear-resistant, nickel-plated version

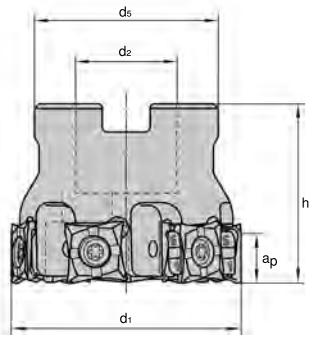
Advantage:
- Cutting depth down to 10 mm

Note:
For clamping screws see art. no. 17557 501.

17557 101-110
Design
- With internal cooling

NEW

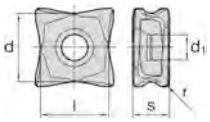
17557 101-112



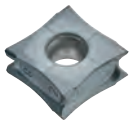
Ø d_1 mm	h mm	d_2 mm	d_5 mm	ap mm	Z	Indexable inserts	17557	...
50	40	22	40	10	5	XNMU 1206		**101**
50	40	22	40	10	6	XNMU 1206		**102**
63	40	22	50	10	6	XNMU 1206		**103**
63	40	22	50	10	8	XNMU 1206		**104**
80	50	27	60	10	8	XNMU 1206		**105**
80	50	27	60	10	10	XNMU 1206		**106**
100	50	32	65	10	9	XNMU 1206		**107**
100	50	32	65	10	12	XNMU 1206		**108**
125	63	40	90	10	11	XNMU 1206		**109**
125	63	40	90	10	16	XNMU 1206		**110**
160	63	40	130	10	13	XNMU 1206		**111**
160	63	40	130	10	20	XNMU 1206		**112**

Indexable inserts and spare parts

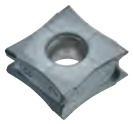
17557 201-221
Design
- 8-edged indexable insert for excellent cost efficiency
- Feed depth to max. ap 10 mm
- Soft cutting geometry for reduced chipping forces



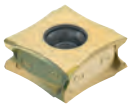
17557 201



17557 211



17557 221



Applications						K	PK	P
Cemented carbide grade						HC 4420	HC 4430	HC 4640
Coating						coated	coated	coated
ISO designation	l mm	d mm	s mm	d_1 mm	r mm	17557 ...	17557 ...	17557 ...
XNMU 1206 SR	12	12	6.35	4.4	0.8	**201**	**211**	**221**

Spare parts		Clamping screw		Wrench	
Size	TX size T	17557	...	52529	...
M 4 x 11.0	15		**501**		**406**

( ) = Items with prices in brackets partly available from stock.

17558 Angular milling cutter 90°

ATORN®

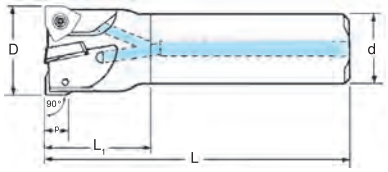
Design
- Wear-resistant, nickel-plated version
- Positive structural design of indexable insert
- Precise 90° angular milling
- Special chip breaker geometry for minimal power consumption
- Double-sided indexable insert with 6 cutting edges per indexable insert, therefore particularly cost-effective
- Substantial insert thickness for optimum process reliability with optimised plane cutting edge for high surface quality
- Internal coolant feed

Scope of delivery:
- Clamping screw and wrench
- Without indexable inserts

NEW

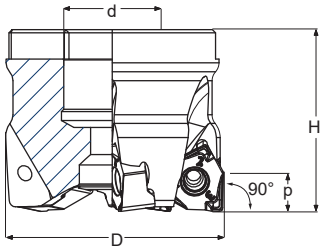
DIN 1835 B

17558 101-106



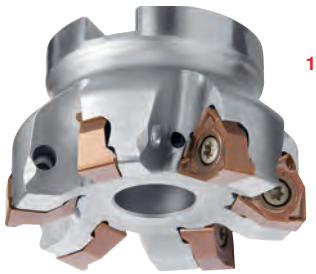
17558 120-122

Ø D mm	Ø d mm	L mm	L_1 mm	p mm	Z	Indexable inserts	17558 ...
20	20	100	40	4	3	WNEU 0403..	101
20	20	150	40	4	3	WNEU 0403..	102
25	25	115	44	4	4	WNEU 0403..	103
25	25	170	50	4	4	WNEU 0403..	104
32	32	125	50	4	5	WNEU 0403..	105
32	32	195	35	4	15	WNEU 0403..	106



Ø D mm	Ø d mm	H mm	p mm	Z	Indexable inserts	17558 ...
32	16	40	4	6	WNEU 0403..	120
40	16	40	4	6	WNEU 0403..	121
50	22	40	4	6	WNEU 0403..	122

17558 130-135



Ø D mm	Ø d mm	H mm	p mm	Z	Indexable inserts	17558 ...
50	22	40	7	5	WNEU/WNEX 0806..	130
63	22	40	7	6	WNEU/WNEX 0806..	131
80	27	50	7	7	WNEU/WNEX 0806..	132
100	32	50	7	8	WNEU/WNEX 0806..	133
125	40	63	7	10	WNEU/WNEX 0806..	134
160	40	63	7	11	WNEU/WNEX 0806..	135

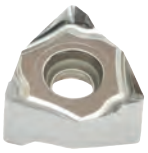
Indexable inserts and spare parts

17558 201-202 + 301-302 + 401-402

17558 203+303+403

17558 404

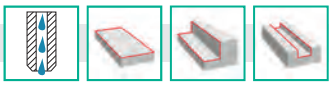
17558 501



Applications Carbide type Coating				P M K HC 4430 Coated		P K HC 4620 Coated		P M HC 4630 Coated		N HW 4415 Uncoated	
ISO designation	l mm	s mm	r mm	17558	...	17558	...	17558	...	17558	...
WNEU 040304-M	4.0	3.30	0.4		201		301		401		
WNEU 040308-M	4.0	3.30	0.8		202		302		402		
WNEU 080608-M	7.5	6.56	0.8		203		303		403		
WNEU 080608-MM	7.5	6.56	0.8						404		
WNEX 080608	7.5	6.56	0.8								501

Spare parts			Clamping screw		Wrench	
For indexable inserts size	Screw	TX size T	17558	...	52529	...
WNEU 04..	M 2.5 x 5.5	8		601		403
WNE. 08..	M 4.0 x 12.0	15		602		406

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

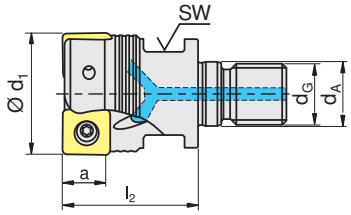


CUTTING SOLUTIONS BY CERATIZIT

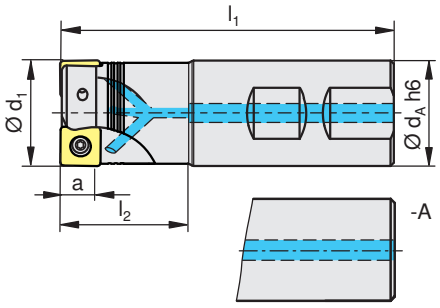
Advantage:
- Patented system
- Exact 90° profile with 8 usable cutting edges per indexable insert
- Ground precision indexable insert in the H tolerance range
- Soft cut with low power consumption
- Perfect surface quality
- Holders available in metric and inch sizes
- For universal use (e.g. face milling, angular milling, trimming, slot milling, trochoidal groove milling)
- Tools with irregular pitch for perfect running smoothness during the milling process
- Smooth running is a great advantage, especially for low-performance machines or thin-walled, fragile components
- Optimum chip removal
- Perfectly adapted chip spaces
- Cooling takes place directly at the cutting edge and is suitable for emulsion, MMS and compressed air
- Innovative insert design with generous contact surfaces for maximum repeat accuracy
- Quick and easy insert assembly
- TX Plus clamping screws
- Milled coolant bore suitable for MMS, emulsion and compressed air
- The range includes tools with narrow or wide pitch
- Durable basic body with new base material and Hard & Tough coating

Great benefits:
- Enormous profitability in terms of price per cutting edge for 90° angular milling
- Exact 90° profile
- Perfect axial and radial runout accuracy
- Also ideally suited to low-performance machines
- The cutter is quickly and easily equipped

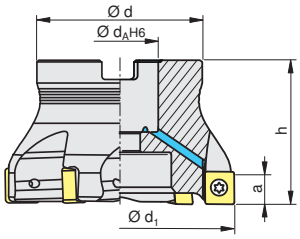
17681 201



17680 201-202



17682 201-214



with thread

Ø d_1 mm	Designation	Z mm	l_2 mm	a mm	Ø dA mm	Ø dG mm	max. rpm	Indexable inserts	17681	...
32	G491.32.R.02-12	2	35	8	17	16	13,600	SN..12..		201

with shank

Ø d_1 mm	Designation	Z mm	l_2 mm	Ø dA mm	a mm	max. rpm	Indexable inserts	17680	...
32	C491.32.R.02-12-B-40	2	102	32	8	13,600	SN..12..		201
32	C491.32.R.02-12-A-63-250	2	250	32	8	10,200	SN..12..		202

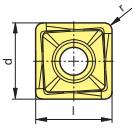
with bore

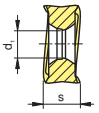
Ø d_1 mm	Designation	Z mm	h mm	Ø d mm	Ø dA mm	a mm	max. rpm	Indexable inserts	17682	...
40	A491.40.R.03-12	3	40	38	16	8	11,500	SN..12..		201
40	A491.40.R.04-12	4	40	38	16	8	11,500	SN..12..		202
50	A491.50.R.04-12	4	40	43	22	8	9,800	SN..12..		203
50	A491.50.R.05-12	5	40	43	22	8	9,800	SN..12..		204
63	A491.63.R.05-12	5	40	48	22	8	8,500	SN..12..		205
63	A491.63.R.06-12	6	40	48	22	8	8,500	SN..12..		206
80	A491.80.R.06-12	6	50	58	27	8	7,400	SN..12..		207
80	A491.80.R.08-12	8	50	58	27	8	7,400	SN..12..		208
100	A491.100.R.07-12	7	50	78	32	8	6,500	SN..12..		209
100	A491.100.R.10-12	10	50	78	32	8	6,500	SN..12..		210
125	A491.125.R.08-12	8	63	88	40	8	5,700	SN..12..		211
125	A491.125.R.12-12	12	63	88	40	8	5,700	SN..12..		212
160	A491.160.R.09-12	9	63	98	40	8	5,000	SN..12..		213
160	A491.160.R.14-12	14	63	98	40	8	5,000	SN..12..		214

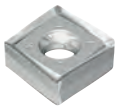
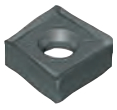
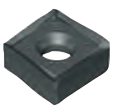
Continued

17680 - 17685 Angular/slot milling cutters, MaxiMill 491

Continued





			17685 101		17685 102			17685 103-105				17685 106-107			
															
Applications			K N		P M		P M K	P M			P M	K		K	
Carbide type			CTWN215		CTPM240		CTCP230	CTPM240			CTPP235	CTCK215		CTPK220	
Coating			Uncoated		Coated		Coated	Coated			Coated	Coated		Coated	
Chip breaker			-F10		-F50		-M50	-M50			-M50	-R50		-R50	
Designation	**r mm**		17685	...	17685	...	17685	...	17685	...	17685	...	17685	...	17685	...
SNHU 120408FR-F10	0.8	10 pcs.		101												
SNHU 120408SR-F50	0.8	10 pcs.				102										
SNHU 120408SR-M50	0.8	10 pcs.						103								
SNHU 120408SR-M50	0.8	10 pcs.								104						
SNHU 120408SR-M50	0.8	10 pcs.										105				
SNHU 120408SR-R50	0.8	10 pcs.												106		
SNHU 120408SR-R50	0.8	10 pcs.														107

Clamping screw	**Wrench**	**l_1 mm**	**d mm**														
M 3.5 x 8.6	IP 15	4.8	5.2														103

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CUTTING SOLUTIONS BY CERATIZIT

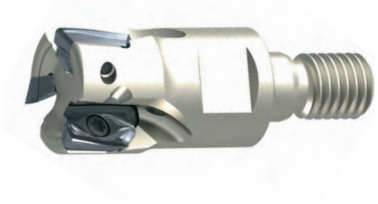
17882

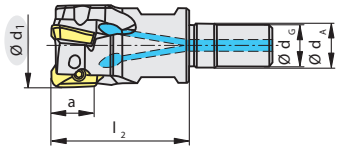
Design
- Sturdy basic body made from tool steel with Hard & Tough coating
- Coolant bore also suitable for MMS
- Precise contact surfaces and exact positioning of the indexable insert

Advantage:
- Soft cut

Scope of delivery:
- Basic body with clamping screws
- **Without** indexable inserts

17882 102-106

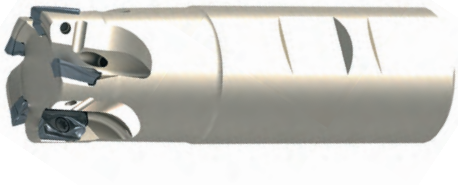


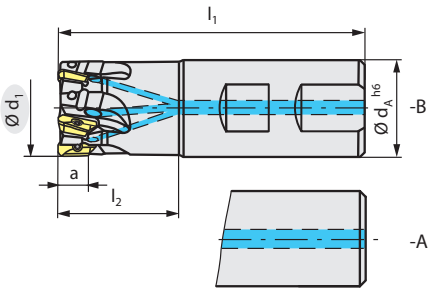


with thread

Ø d_1 mm	Designation	Z	l_2 mm	a mm	Ø d_A mm	Ø d_G mm	Indexable inserts	17882	...
20	G211.20.R.03-11	3	33	10	10.5	10	XD.. 11..		102
25	G211.25.R.03-11	3	34	10	12.5	12	XD.. 11..		103
25	G211.25.R.04-11	4	35	10	12.5	12	XD.. 11..		104
32	G211.32.R.04-11	4	36	10	17.0	16	XD.. 11..		105
32	G211.32.R.05-11	5	37	10	17.0	16	XD.. 11..		106

17882 201-224

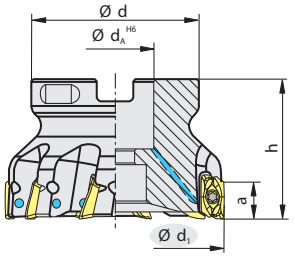




with shank

Ø d_1 mm	Designation	Z	l_1 mm	l_2 mm	Ø d_A mm	a mm	Indexable inserts	17882	...
12	C211.12.R.01-11-B-20	1	75	20	16	10	XD.. 11..		201
16	C211.16.R.02-11-A15-32-165	2	165	32	15	10	XD.. 11..		202
16	C211.16.R.02-11-A-25	2	75	25	16	10	XD.. 11..		203
16	C211.16.R.02-11-A-32-165	2	165	32	16	10	XD.. 11..		204
16	C211.16.R.02-11-B-25	2	75	25	16	10	XD.. 11..		205
20	C211.20.R.02-11-A19-40-200	2	200	40	19	10	XD.. 11..		206
20	C211.20.R.02-11-A-25	2	77	25	20	10	XD.. 11..		207
20	C211.20.R.02-11-A-40-200	2	200	40	20	10	XD.. 11..		208
20	C211.20.R.02-11-B-25	2	77	25	20	10	XD.. 11..		209
20	C211.20.R.03-11-A-25	3	77	25	20	10	XD.. 11..		210
20	C211.20.R.03-11-A-32-165	3	165	32	20	10	XD.. 11..		211
20	C211.20.R.03-11-B-25	3	77	25	20	10	XD.. 11..		212
25	C211.25.R.02-11-A-50-225	2	225	50	25	10	XD.. 11..		213
25	C211.25.R.03-11-A24-50-225	3	225	50	24	10	XD.. 11..		214
25	C211.25.R.03-11-A-32	3	90	32	25	10	XD.. 11..		215
25	C211.25.R.03-11-A-50-225	3	225	50	25	10	XD.. 11..		216
25	C211.25.R.03-11-B-32	3	90	32	25	10	XD.. 11..		217
25	C211.25.R.04-11-A-32	4	90	32	25	10	XD.. 11..		218
25	C211.25.R.04-11-A-40-165	4	165	40	25	10	XD.. 11..		219
25	C211.25.R.04-11-B-32	4	90	32	25	10	XD.. 11..		220
32	C211.32.R.04-11-B-40	4	102	40	32	10	XD.. 11..		221
32	C211.32.R.05-11-B25-40	5	102	40	25	10	XD.. 11..		222
32	C211.32.R.05-11-B-40	5	102	40	32	10	XD.. 11..		223
40	C211.40.R.06-11-B-50	6	122	50	40	10	XD.. 11..		224

17882 301-312

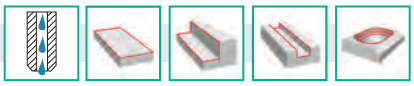


with bore

Ø d_1 mm	Designation	Z	h mm	Ø d mm	Ø d_A mm	a mm	Indexable inserts	17882	...
40	A211.40.R.04-11	4	40	38	16	10	XD.. 11..		301
40	A211.40.R.06-11	6	40	38	16	10	XD.. 11..		302
50	A211.50.R.05-11	5	40	43	22	10	XD.. 11..		303
50	A211.50.R.08-11	8	40	43	22	10	XD.. 11..		304
63	A211.63.R.06-11	6	40	48	22	10	XD.. 11..		305
63	A211.63.R.10-11	10	40	48	22	10	XD.. 11..		306
80	A211.80.R.07-11	7	50	58	27	10	XD.. 11..		307
80	A211.80.R.10-11	10	50	58	27	10	XD.. 11..		308
100	A211.100.R.08-11	8	50	78	32	10	XD.. 11..		310
125	A211.125.R.10-11	10	63	88	40	10	XD.. 11..		312

Continued

17882 - 17884 Angular/slot milling cutter system, MaxiMill 211-11



Continued ▶

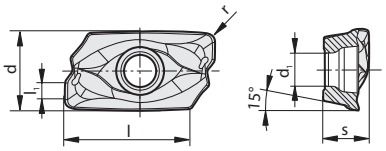
17884
Indexable inserts
Design
The notch makes the difference:
Up to WP radius 1.6 mm, the notch enables smooth, vibration-free operation, higher stability during plunge milling and improved machining performance. The radial forces during plunge milling are compensated.

Applications
Chip breaker F20:
- Very good cutting efficiency, finishing of non-ferrous metals

Chip breaker F50:
- Chamfered indexable insert, very good cutting efficiency, finishing of steel, stainless steel and cast iron even under unstable conditions

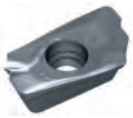
Chip breaker M50:
- For universal use, compromise between cutting efficiency and stability, for medium machining of steel, stainless steel and cast iron

17884

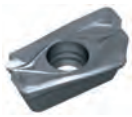


17884 101-103

17884 104-106



17884 107-109



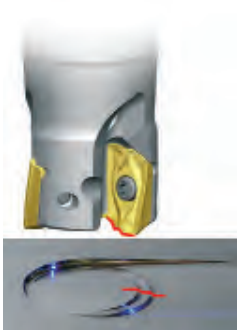
Applications								N		P		M	
Cemented carbide type								CTWN215		CTPP235		CTPM240	
Coating								uncoated		PVD		PVD	
Chip breaker								F20		F50		M50	
Designation	**d** mm	**l** mm	**s** mm	**l_1** mm	**r** mm	**d_1** mm		17884	...	17884	...	17884	...
XDKT 11T304FR-F20	6.8	10.6	3.8	1.8	0.4	2.8	10 pcs.		101				
XDKT 11T308FR-F20	6.8	10.6	3.8	1.4	0.8	2.8	10 pcs.		102				
XDKT 11T3020FR-F20	6.8	10.6	3.8	1.7	2.0	2.8	10 pcs.		103				
XDKT 11T304SR-F50	6.8	10.6	3.8	1.8	0.4	2.8	10 pcs.				104		
XDKT 11T308SR-F50	6.8	10.6	3.8	1.4	0.8	2.8	10 pcs.				105		
XDKT 11T320SR-F50	6.8	10.6	3.8	2.1	2.0	2.8	10 pcs.				106		
XDKT 11T308SR-M50	6.8	10.6	3.8	1.4	0.8	2.8	10 pcs.						107
XDKT 11T312SR-M50	6.8	10.6	3.8	1.0	1.2	2.8	10 pcs.						108
XDKT 11T320SR-M50	6.8	10.6	3.8	2.1	2.0	2.8	10 pcs.						109

Spare parts			Clamping screw 10		Wrench	
for Ø d_1 mm	**Clamping screw**	**Wrench**	17999	...	51932	...
12	M 2.5 x 5.0	IP 8		123		404
15.7–32	M 2.5 x 5.6	IP 8		124		404
40–160	M 2.5 x 7.3	IP 8		125		404

		Power screw	
For cutters with bore Ø d_1 mm	**Power screw**	17998	...
40	M 8 x 30.0		101
50	M 10 x 31.0		102

Info MaxiMill 211-11

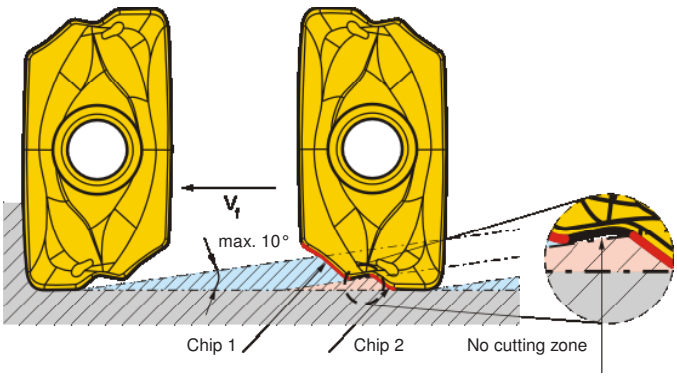
Active principle by "the notch" during circular and oblique immersion: (r < 2.0 mm)



Radial force compensation
- The notch provides additional stability during immersion.
- Smooth running and vibration-free operation are thus guaranteed to a large extent.

Chip division
- Low cutting pressure
- Low power consumption
- Optimal chip transport
- Minimal vibrations
- Very good chip formation

The PLUS for professional machinists:
- Higher cutting performance
- Better surfaces when milling closed grooves and pockets



www.hhw.de
Fax order hotline: 0800 0 915910

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17742 Angular milling cutter 90°

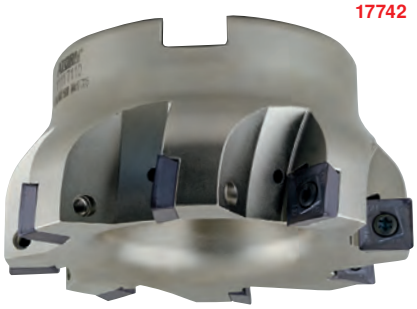
ATORN®

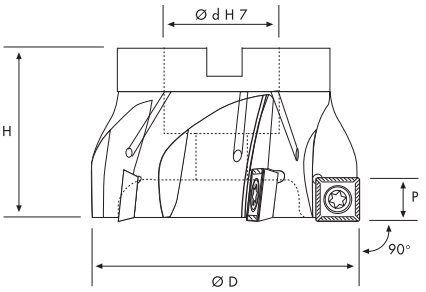
Design
- Positive
- Right cutting
- **Without** indexable inserts
- Insert design with four cutting edges per insert
- Cutting depths up to a maximum of 10.5 mm

Applications
For carbide indexable inserts SD.T 1205.. For general corner and face milling, suitable for use near the clamping device. Core drilling via circular interpolation.

Note:
For cemented carbide indexable inserts SD.T 1205.. see art. no. 17833.

17742





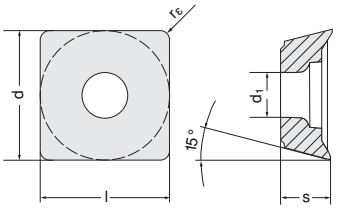
Ø D mm	Ø d H7 mm	H mm	P mm	Z	Indexable inserts	17742	...
40	16	45	10.5	4	SD.T 1205 ..		**100**
50	22	40	10.5	5	SD.T 1205 ..		**101**
63	22	40	10.5	6	SD.T 1205 ..		**102**
80	27	50	10.5	6	SD.T 1205 ..		**103**
100	32	50	10.5	8	SD.T 1205 ..		**104**
125	40	63	10.5	9	SD.T 1205 ..		**105**

Spare parts			Clamping screw 10		Wrench	
For indexable inserts size	**Clamping screw type**	**TX size T**	**17744**	**...**	**52529**	**...**
SD.T 1205..	**VT 40 710**	15		**101**		**406**

17833 Indexable milling insert, SDMT

ATORN®

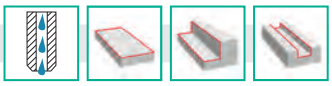
Design
- Square
- Positive 15°



17833

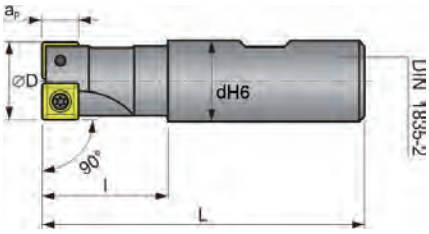
Applications							P M
Carbide type							P 25
Coating							TiAlN
ISO designation	**d+l mm**	**s mm**	**d_1 mm**	**r**		**17833**	**...**
SDMT 1205 PDR69	12.7	5.00	4.40	0.8	10 pcs.		**101**

17662 Angular milling cutter 90°



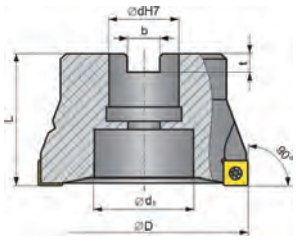
Design
- Nickel-plated milling body made of hardened special steel **for precise 90° cuts**
- **Extremely soft cut**

Applications
Universal use for light to medium machining. **Very good surface** thanks to optimised face cutting. For indexable inserts SOMT 09T304.

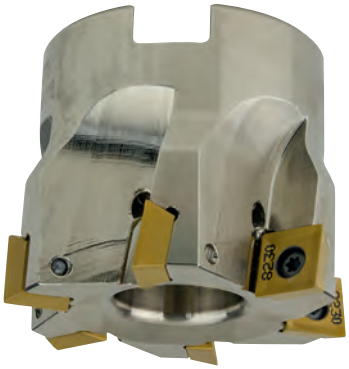


17662 101-103

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Shank Ø mm	Working depth L2 mm	with shank 17662	...
20	2	82	20	32		**101**
25	3	98	25	42		**102**
32	4	102	32	42		**103**



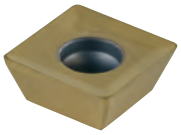
17662 120-122



Cutting edge Ø mm	No. of cutting edges	Overall length mm	Location hole mm	with bore 17662	...
40	5	40	16		**120**
50	6	40	22		**121**
63	7	40	22		**122**

Indexable inserts and spare parts

17662 301-304

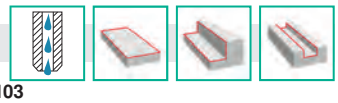


Indexable inserts		Steel		Steel roughing		UNI - soft cut		VA - soft cut	
Designation	**Carbide type/ coating**	**17662**	**...**	**17662**	**...**	**17662**	**...**	**17662**	**...**
SOMT 09T304	P30/TiN		**301**				**303**		
SOMT 09T304	P40/TiN				**302**				**304**

Spare parts			Clamping screw		Wrench	
For indexable inserts size	**TX size T**		**17662**	**...**	**52529**	**...**
SOMT 09T304	9			**200**		**404**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Angular milling cutters (4-10/4-15 Power)



ATORN®

Design
- Internal coolant feed
- Multifunctional milling tool system with 4 cutting edges on a double-sided indexable insert
- Long tool life due to low cutting forces. Despite the strong cutting edge, the special chip shape geometry enables low power consumption due to the large chip angle
- Special chip geometry guarantees consistently high tool life due to the new carbide types
- Nickel-plated design offers greater protection against wear and a longer service life of the basic body

Use
For face milling, corner milling, trimming and groove milling.

17735 201-203
Screw-in milling cutter
Applications
For the use of ISO indexable milling inserts LN.X 100605 PNR art. no. 17738.

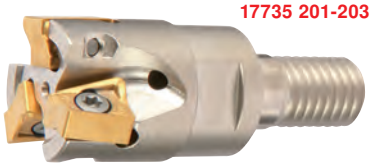
17735 101-103
End mill, 4-10 Power
Applications
For the use of ISO indexable milling inserts LN.X 100605 PNR art. no. 17738.

17735 301-303
End mill, long
Applications
For the use of ISO indexable milling inserts LN.X 100605 PNR art. no. 17738.

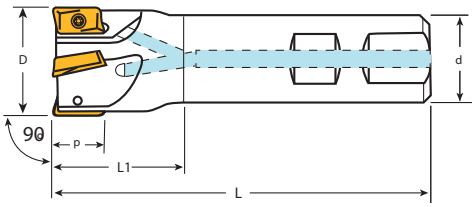
17736 101-103
Angular milling cutter, 4-10 Power
Applications
For the use of ISO indexable milling inserts LN.X 100605 PNR art. no. 17738.

17736 105-109
Angular milling cutter, 4-15 Power
Applications
For the use of ISO indexable inserts LN.X 151008 PNR art. no. 17738.

17735 201-203

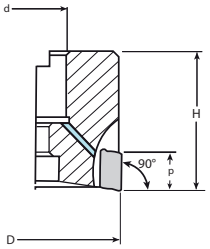


17735 101-103



17735 301-303

17736 101-110



Short

Ø D mm	d mm	L mm	L_1 mm	p mm	Z	Indexable inserts	with shank 17735	...
20	20	100	30	9	3	LN.X 100605 PNR		101
25	25	115	35	9	3	LN.X 100605 PNR		102
32	25	115	40	9	4	LN.X 100605 PNR		103

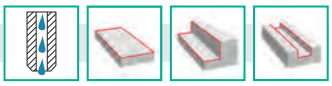
Long

Ø D mm	d mm	L mm	L_1 mm	Z	Indexable inserts	with shank 17735	...
20	20	150	50	3	LN.X 100605 PNR		301
25	25	150	50	3	LN.X 100605 PNR		302
32	32	200	60	4	LN.X 100605 PNR		303

Ø D mm	d mm	H mm	p mm	Z	Indexable inserts	with bore 17736	...
40	16	40	9	5	LN.X 100605 PNR		101
50	22	40	9	7	LN.X 100605 PNR		102
63	22	40	9	9	LN.X 100605 PNR		103
50	22	40	14	5	LN.X 151008 PNR		105
63	22	40	14	6	LN.X 151008 PNR		106
80	27	50	14	7	LN.X 151008 PNR		107
100	32	63	14	8	LN.X 151008 PNR		108
125	40	63	14	10	LN.X 151008 PNR		109
160	40	63	14	11	LN.X 151008 PNR		110 NEW

Continued

17735 - 17738 Angular milling cutters (4-10/4-15 Power)

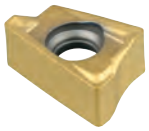


Continued

Indexable inserts and spare parts

17738 101-205
Applications
- **HW 4310:** for aluminium machining
- **HC 4630:** for steel machining
- **HC 4410:** for cast iron machining
- **HC 4535:** for stainless steel machining
- **HC 4635:** for universal machining

Note:
Cutting edges are marked with dots; please always use cutting edges with the same dots.



			17738 101		17738 102		17738 103		17738 104			
Applications			N		P		K		M		P M K	
Carbide type			HW 4310		HC 4630		HC 4410		HC 4535		HC 4635	
Coating			Uncoated		Coated		Coated		Coated		Coated	
ISO designation	**r mm**		17738	...	17738	...	17738	...	17738	...	17738	...
LNEX 100605 PNR-MA	0.5	10 pcs.		101								
LNMX 100605 PNR-MB	0.5	10 pcs.				102		103		104		
LNKX 100605 PNR-MB	0.5	10 pcs.										105
LNEX 151008 PNR-MA	0.8	10 pcs.		201								
LNMX 151008 PNR-MB	0.8	10 pcs.				202		203		204		
LNKX 151008 PNR-MB	0.8	10 pcs.										205

Spare parts			**Clamping screws**		**Wrench**	
For indexable inserts size	**TX size T**		17737	...	52529	...
LN.X 100605 PNR	9			101		404
LN.X 151008 PNR	15			102		406

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17560 Plunge mills

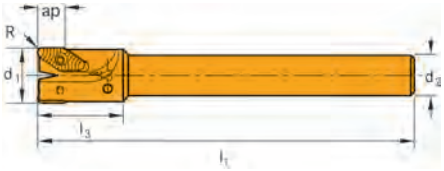
ATORN®

Applications
For non-ferrous metals and plastics.

Note:
For indexable inserts see art. no. 17563.

17560

Ø d_1 mm	Z	R mm	l_1 mm	l_3 mm	ap mm	Ø d_2 mm	Indexable inserts	17560	...
25	2	1.2	200	40	14	20	VPGT 160412-ALM		102
32	2	3.0	220	50	15	25	VCGT 220530-ALM		103



Spare parts			Clamping screws 10		Wrench	
For indexable inserts size	Screw	TX size T	17564	...	52529	...
VPGT 160412-ALM	M 4.0 x 7.5	15		102		406
VCGT 220530-ALM	M 5.0 x 10.0	15		103		406

17561 Screw-on mill cutters

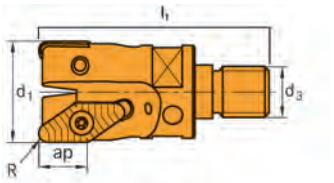
ATORN®

Type THR
Applications
For non-ferrous metals and plastics.

Note:
For indexable inserts see art. no. 17563.

17561

Ø d_1 mm	Z	R mm	l_1 mm	ap mm	d_3 mm	Indexable inserts	17561	...
25	2	1.2	40	14	M 12	VPGT 160412-ALM		102
32	2	3.0	50	15	M 16	VCGT 220530-ALM		103
42	3	3.0	50	15	M 16	VCGT 220530-ALM		104



Spare parts			Clamping screws 10		Wrench	
For indexable inserts size	Screw	TX size T	17564	...	52529	...
VPGT 160412-ALM	M 4.0 x 7.5	15		102		406
VCGT 220530-ALM	M 5.0 x 10.0	15		103		406

17562 Shell end mills

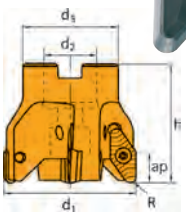
ATORN®

Design
For non-ferrous metals and plastics.

Note:
For indexable inserts see art. no. 17563.

17562

Ø d_1 mm	Z	R mm	h mm	ap mm	Ø d_5 mm	d_2 mm	Indexable inserts	17562	...
42	3	3.0	55	15	32	16	VCGT 220530-ALM		101
52	3	3.0	55	15	40	22	VCGT 220530-ALM		102
66	4	3.0	60	15	48	27	VCGT 220530-ALM		103
80	4	3.0	60	15	60	27	VCGT 220530-ALM		104
100	5	3.0	65	15	80	32	VCGT 220530-ALM		105

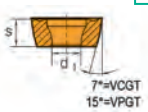


Spare parts			Clamping screws 10		Wrench	
For indexable inserts size	Screw	TX size T	17564	...	52529	...
VCGT 220530-ALM	M 5.0 x 10.0	15		103		406

17563 Indexable milling inserts, VPGT/VCGT

ATORN®

17563



Indexable inserts							Uncoated K 10		Coated K 10	
Type	l mm	s mm	d mm	d_1 mm	R mm		17563	...	17563	...
VPGT 160412-ALM	16.6	4.76	9.52	4.4	1.2	10 pcs.		102		202
VCGT 220530-ALM	22.1	5.56	12.70	5.5	3.0	10 pcs.		103		203

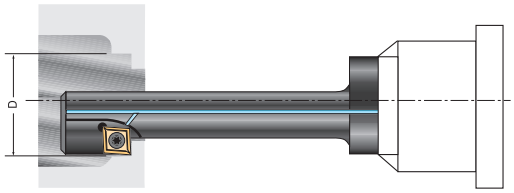
17570 Reverse milling counterbores, 180°/45°

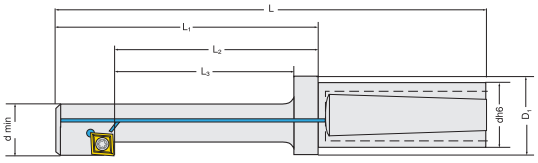
DIN 1835 E

ATORN®

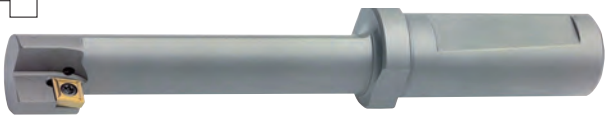
Design
- Supplied **without** indexable inserts

Applications
For reverse countersinking of bores.





17570 101-114

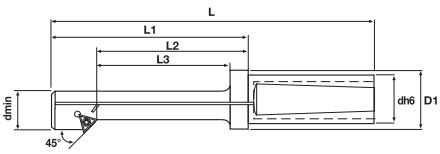


Reverse milling counterbores, 180°

Ø D mm	d min. mm	L mm	L_1 mm	L_2 mm	L_3 mm	dh6 mm	D_1 mm	e mm	Indexable inserts	17570 ...
18	10.5	112	62	47	40	20	25	4.0	CC.. 0602..	101
20	13.0	117	67	52	45	20	25	3.75	CC.. 0602..	102
24	15.0	122	72	57	50	20	25	4.75	CC.. 0602..	103
26	17.0	132	82	67	60	20	25	5.0	CC.. 0602..	104
30	19.0	142	92	77	65	20	25	6.0	CC.. 0602..	105
33	21.0	152	102	82	75	20	25	6.5	CC.. 09T3..	106
36	23.0	173	113	93	85	32	40	7.0	CC.. 09T3..	107
40	25.0	183	123	103	95	32	40	8.0	CC.. 09T3..	108
43	30.0	183	123	103	95	32	40	7.0	CC.. 09T3..	109
48	33.0	223	163	143	135	32	40	8.0	CC.. 09T3..	110
53	36.0	210	140	40	110	40	-	9.0	CC.. 1204..	111
57	39.0	220	150	40	120	40	-	9.5	CC.. 1204..	112
66	45.0	245	165	50	135	50	-	11.0	CC.. 1204..	113
76	52.0	265	185	50	155	50	-	12.5	CC.. 1204..	114

17570 101
Design
- Without internal cooling

Note:
For indexable inserts see art. no. 18550 ff.



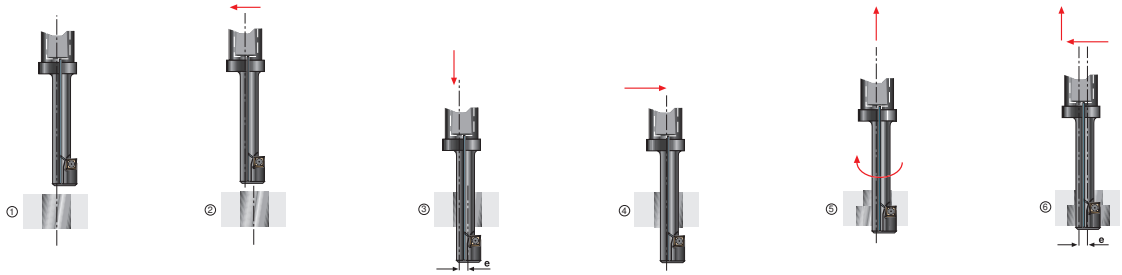
17570 201-209

Reverse milling counterbores, 45°

Ø D mm	d min. mm	L mm	L1 mm	L2 mm	L3 mm	dh6 mm	D1 mm	e mm	Indexable inserts	17570 ...
15	10	105	55	42	35	20	25	2.7	TCMT 0802..	201 NEW
20	14	110	60	47	40	20	25	3.2	TCMT 0802..	203 NEW
23	17	120	70	57	50	20	25	3.2	TCMT 1102..	204 NEW
27	21	140	90	77	70	20	25	3.2	TCMT 1102..	207 NEW
31	24	150	100	87	80	20	25	3.7	TCMT 1102..	209 NEW

17570 201
Design
- Without internal cooling

Note:
For indexable inserts see art. no. 17570 301.



1) Position the tool on the centre of the bore. Spindle orientation 0°.

2) Offset the tool by the programming dimension (e).

3) Plunge to the position below the lower edge of the workpiece with safety clearance.

4) Move back to the centre of the bore by the dimension (e), and then start the spindle.

5) Countersink to the desired depth.

6) Position at the safety distance below the lower edge of the workpiece. Spindle orientation at 0°.
Then offset the tool by the programming dimension (e) and extend the cutter.

Applications							P M K	
Coating							TiN	
ISO Designation	l mm	d mm	s mm	d_1 mm	r mm		17570	...
TCMT 080204	8.2	4.76	2.38	2.3	0.4	10 pcs.		301 NEW

Spare parts		Clamping screw 10		Wrench	
For indexable inserts size	TX size T	17528	...	52529	...
TCMT 080204	7		100 NEW		402 NEW
CC.. 0602..	8		101		403
CC.. 09T3..	15		102		406
CC.. 1204..	20		103		407

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DIN 1835 B

ATORN®

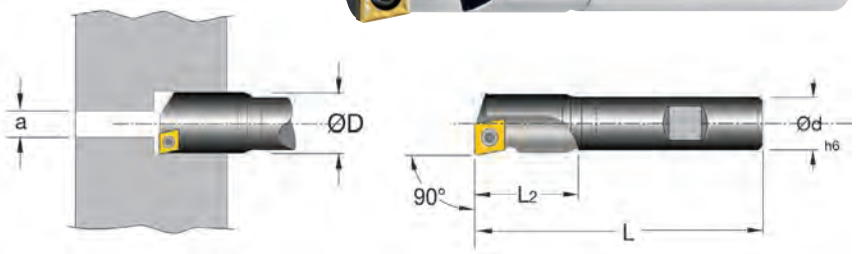
17576

Design
- Single-edged boring bar with internal cooling
- **Without** indexable inserts

Bore tolerances:
Indexable insert radius 0.2 mm = +0.05/-0.10 mm
Indexable insert radius 0.4 mm = +0.03/-0.18 mm

Applications
For countersinking and core drilling.

Note:
For indexable inserts see art. no. 18550 ff.



Ø D mm	Ød h6 mm	a mm	L mm	L_2 mm	Indexable inserts	17576	...
9.8	8	4.5	90	23	CC.. 0602..		201 NEW
10	12	4	85	15	CC.. 0602..		101
10.8	10	3.5	105	24	CC.. 0602..		202 NEW
11	12	4	85	16	CC.. 0602..		102
11.8	10	3	105	25	CC.. 0602..		203 NEW
12	10	4	85	20	CC.. 0602..		103
12.8	10	2.5	105	26	CC.. 0602..		204 NEW
13	12	5	85	21	CC.. 0602..		104
13.8	12	3	110	27	CC.. 0602..		205 NEW
14	12	5	85	21	CC.. 0602..		105
14.8	12	3.5	120	28	CC.. 0602..		206 NEW
15	12	5	85	24	CC.. 0602..		106
15.8	12	4	125	29	CC.. 0602..		207 NEW
16	12	5	85	28	CC.. 0602..		107
16.8	16	5	140	30	CC.. 0602..		208 NEW
17	16	5	95	40	CC.. 09T3..		108
17.8	16	6	140	31	CC.. 0602..		209 NEW
18	16	5	95	40	CC.. 09T3..		109
18.8	16	7	150	32	CC.. 0602..		210 NEW
19	16	5	95	40	CC.. 09T3..		110
19.8	16	8	150	33	CC.. 09T3..		211 NEW
20	16	5	95	40	CC.. 09T3..		111
20.8	16	9	160	34	CC.. 09T3..		212 NEW
21	16	5	95	33	CC.. 09T3..		112

Ø D mm	Ød h6 mm	a mm	L mm	L_2 mm	Indexable inserts	17576	...
21.8	20	10	160	35	CC.. 09T3..		213 NEW
22	16	6	95	37	CC.. 09T3..		113
22.8	20	11	165	36	CC.. 09T3..		214 NEW
23	16	6	95	40	CC.. 09T3..		114
23.8	20	12	170	37	CC.. 09T3..		215 NEW
24	16	6	95	34	CC.. 09T3..		115
24.8	20	13	180	38	CC.. 09T3..		216 NEW
25	16	8	95	33	CC.. 09T3..		116
25.8	20	14	185	39	CC.. 09T3..		217 NEW
26	20	8	120	53	CC.. 09T3..		117
26.8	20	15	190	40	CC.. 09T3..		218 NEW
27	20	9	120	56	CC.. 09T3..		118
27.8	20	16	190	41	CC.. 09T3..		219 NEW
28	20	10	120	53	CC.. 09T3..		119
28.8	20	17	200	42	CC.. 09T3..		220 NEW
29	20	11	120	55	CC.. 09T3..		120
29.8	25	18	200	43	CC.. 09T3..		221 NEW
30	20	12	121	57	CC.. 09T3..		121
30.8	25	19	200	44	CC.. 09T3..		222 NEW
31	20	14	120	55	CC.. 09T3..		122
31.8	25	20	200	45	CC.. 09T3..		223 NEW
32	20	15	120	54	CC.. 09T3..		123
33	20	16	120	55	CC.. 09T3..		124

Spare parts

For indexable inserts size	TX size T	Clamping screw 17528	...	Wrench 52529	...
CC.. 0602..	8		101		403
CC.. 09T3..	15		102		406

17577 Core and countersunk drills (double-edged)

ATORN®

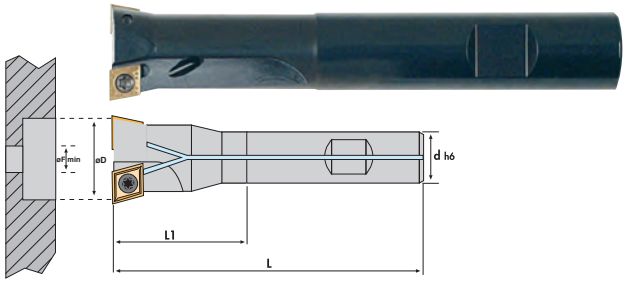
Design
- Double-edged boring bar with internal cooling
- **Without** indexable inserts

Bore tolerances:
Indexable insert radius 0.2 mm = +0.05/-0.10 mm
Indexable insert radius 0.4 mm = +0.03/-0.18 mm

Applications
For countersinking and core drilling.

Note:
For indexable inserts see art. no. 18550 ff.

17577



Ø D mm	Ød h6 mm	Ø F min. mm	L mm	L1 mm	Indexable inserts	17577	...
16	12	5	92	30	CC.. 0602..		101
17	16	6	94	32	CC.. 0602..		102
18	16	7	97	41	CC.. 0602..		103
19	16	8	100	41	CC.. 0602..		104
20	16	9	102	41	CC.. 0602..		105
21	16	10	105	41	CC.. 0602..		106
22	16	11	110	41	CC.. 0602..		107
23	16	12	112	41	CC.. 0602..		108
24	16	13	115	41	CC.. 0602..		109
25	16	8	120	40	CC.. 09T3..		110
26	20	9	125	55	CC.. 09T3..		111
27	20	10	128	55	CC.. 09T3..		112
28	20	11	130	55	CC.. 09T3..		113
29	20	12	132	55	CC.. 09T3..		114

Ø D mm	Ød h6 mm	Ø F min. mm	L mm	L1 mm	Indexable inserts	17577	...
30	20	13	134	55	CC.. 09T3..		115
31	20	14	136	55	CC.. 09T3..		116
32	20	15	138	55	CC.. 09T3..		117
33	20	16	140	55	CC.. 09T3..		118
34	25	16	140	60	CC.. 09T3..		119
35	25	17	140	60	CC.. 09T3..		120
36	25	18	140	60	CC.. 09T3..		121
37	25	19	140	60	CC.. 09T3..		122
38	25	20	140	60	CC.. 09T3..		123
39	25	21	140	60	CC.. 09T3..		124
40	25	22	140	60	CC.. 09T3..		125
41	25	23	140	60	CC.. 09T3..		126
42	25	24	140	60	CC.. 09T3..		127

Spare parts		Clamping screw		Wrench	
For indexable inserts size	TX size T	17528	...	52529	...
CC.. 0602..	8		101		403
CC.. 09T3..	15		102		406

17578 Adjustable fine boring bars

ATORN®

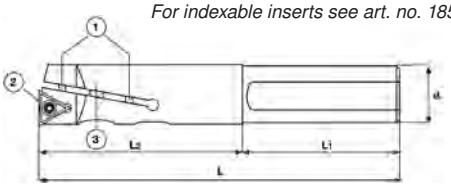
Design
- Special steel, nickel-plated
- Adjustment range 2–5 mm
- **Without** indexable inserts

Advantage:
- Cost-effective alternative to spindle tools

Applications
For ISO indexable inserts CCMT and CCGT.

Note:
For indexable inserts see art. no. 18550 ff.

17578



1 = Draw bolt
2 = Clamping screw
3 = Counter screw

D min. mm	D max. mm	d mm	L mm	L2 mm	L1 mm	Indexable inserts	Holder 17578	...	Draw bolt 17578	...	Counter screw 17578	...
10	12	10	100	30	70	CC.. 0602..		101		201		301
12	15	12	105	30	70	CC.. 0602..		102		201		302
15	20	16	110	50	60	CC.. 0602..		103		202		303
20	25	20	120	60	60	CC.. 0602..		104		203		304
25	30	25	140	70	70	CC.. 09T3..		105		204		305
30	35	25	160	90	70	CC.. 09T3..		106		205		306
35	40	32	170	100	70	CC.. 09T3..		107		206		307
40	45	32	190	120	70	CC.. 09T3..		108		207		308
45	50	32	220	160	70	CC.. 09T3..		109		208		309

Spare parts		Clamping screw		Wrench	
For indexable inserts size	TX size T	17528	...	52529	...
CC.. 0602..	8		101		403
CC.. 09T3..	15		102		406

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17660 HPC cutters for extreme feeds

Design
- Nickel-plated face milling cutter head made of hardened special steel for **HPC machining**
- Dynamic cutting geometry **for maximum feed rates**
- Very soft cutting
- Reduced **cutting force minimises load on** the spindle

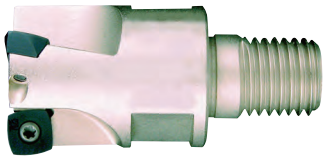
Applications
For face and pocket milling. Even large projection depths can be milled.

17660 101-102

with shank

Cutting edge Ø mm	No. of teeth	Overall length mm	Shank Ø mm	Working depth L2 mm	For indexable insert	17660 ...
25	2	140	25	80	ZDCW 09T304	101
32	2	140	32	80	ZDCW 09T304	102

17660 110-112



with thread

Cutting edge Ø mm	No. of teeth	Overall length mm	Clamping thread mm	For indexable insert	17660 ...
25	2	54	M 12	ZDCW 09T304	110
32	3	63	M 16	ZDEW 120408	111
40	4	63	M 16	ZDEW 120408	112

17660 120-123

with bore

Cutting edge Ø mm	No. of teeth	Overall length mm	Location hole mm	For indexable insert	17660 ...
40	4	40	16	ZDCW 09T304	120
50	4	40	22	ZDEW 120408	121
63	5	40	22	ZDEW 120408	122
80	5	50	27	ZDEW 120408	123

Indexable inserts and spare parts

17660 304

17660 305

17660 306

Designation	Carbide type/ coating	Programmable radius mm	Steel 17660 ...	Steel roughing 17660 ...	Cast iron + hardened 17660 ...
ZDCW 09T304	P25/Al2O3	2.27	301		
ZDCW 09T304	P40/Al2O3	2.27		302	
ZDCW 09T304	K10/Al2O3	2.27			303
ZDEW 120408	P25/Al2O3	3.52	304		
ZDEW 120408	P40/Al2O3	3.52		305	
ZDEW 120408	K10/Al2O3	3.52			306

Spare parts For indexable inserts size	TX size T	Clamping screw 17660 ...	Wrench 52529 ...
ZDCW 09T304	9	200	404
ZDEW 120408	15	201	406

17865 - 17867 HFC milling system

CUTTING SOLUTIONS BY CERATIZIT

Design
- Basic body made of special steel
- Dynamic cutting edge geometry for a soft cut

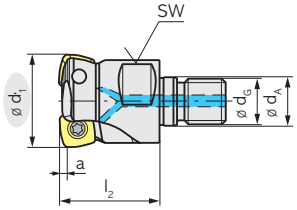
Scope of delivery:
- Basic body with clamping screws
- **Without** indexable inserts

Advantages:
- HyperCoat coating for an extremely long service life
- Maximum running smoothness
- Maximum machining performance
- Maximum cost efficiency

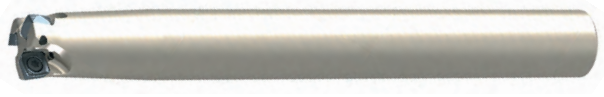
17865 101-104

with thread

Ø d_1 mm	Designation	Z	l_2 mm	a mm	Ø d_A mm	Ø d_G mm	Indexable inserts	17865	...
16	GHFC.16.R.02-06-27	2	27	0.8	8.5	M 8	XP.. 06		101
20	GHFC.20.R.03-06-33	3	33	0.8	10.5	M 10	XP.. 06		102
25	GHFC.25.R.04-06-35	4	35	0.8	12.5	M 12	XP.. 06		103
32	GHFC.32.R.05-06-35	5	35	0.8	17.0	M 16	XP.. 06		104

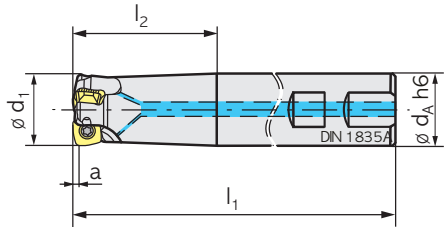


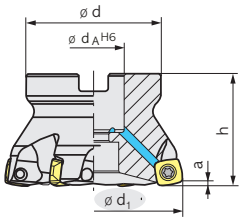
17865 201-204



with shank

Ø d_1 mm	Designation	Z	l_1 mm	l_2 mm	a mm	Ø d_A mm	Indexable inserts	17865	...
16	CHFC.16.R.02-06-B-40	2	89	40	0.8	16	XP.. 06		201
20	CHFC.20.R.03-06-B-50	3	101	50	0.8	20	XP.. 06		202
25	CHFC.25.R.04-06-B-50	4	107	50	0.8	25	XP.. 06		203
32	CHFC.32.R.05-06-B25-60	5	117	60	0.8	25	XP.. 06		204





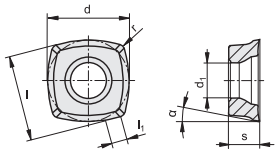
17865 301-304

with bore

Ø d_1 mm	Designation	Z	Ø d_A mm	h mm	Ø d mm	a mm	Indexable inserts	17865	...
32	AHFC.32.R.03-09	3	16	40	38	1	XD.. 09..		301
42	AHFC.42.R.05-09	5	16	40	38	1	XD.. 09..		302
52	AHFC.52.R.06-09	6	22	40	43	1	XD.. 09..		303
63	AHFC.63.R.06-09	6	22	40	48	1	XD.. 09..		304

Indexable inserts and spare parts

17867



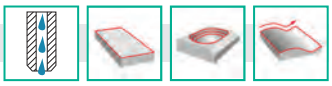
Applications								MP CTPM245 PVD		P CTPP235 PVD	
Cemented carbide grade											
Coating											
Designation	**d mm**	**l mm**	**s mm**	**l_1 mm**	**r mm**	**d_1 mm**		17867	...	17867	...
XPLX 060305SR-M50	6.35	6.00	2.75	1.0	0.50	2.80	10 pcs.		102		
XDLX 09T308ER-F40	9.60	9.60	3.97	1.5	0.80	4.40	10 pcs.		103		
XDLX 09T308SR-M50	9.60	9.60	3.97	1.5	0.80	4.40	10 pcs.				104

Spare parts			Clamping screw 10		Wrench	
for indexable inserts	Clamping screw Size	Key	17999	...	51932	...
XP.. 06	M 2.5 x 5.0	T 8		115		204
XD.. 09..	M 3.5 x 8.6	T 15		116		207

		Power screw	
For cutters with bore Ø d_1 mm	Power screw	17998	...
32–42	M 8 x 30.0		101

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Face and copy milling cutters



Design
- **Nickel-plated** milling cutter body in hardened special steel
- Robust design for smooth running
- High **radial and axial runout accuracy**

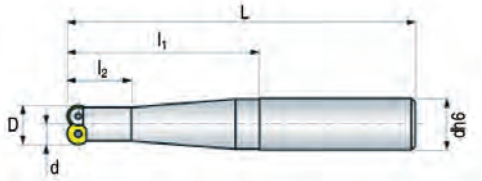
Applications
For face and copy milling with high rotation speeds and feed rates. For **toolmaking and mould making.**

For indexable inserts RDHX 0702

Copy milling cutters with shank

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Shank Ø mm	Working depth L2 mm	17613	...
15	2	90	16	20		**104**
15L	2	110	16	20		**105**
15XL	2	160	20	22		**106**

17613 104



Copy milling cutters with thread

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Clamping thread	17613	...
15	2	23	M 8		**110**
20	4	30	M 10		**111**
25	5	35	M 12		**112**
32	5	42	M 12		**113**

17613 110-113

Indexable inserts and spare parts

ISO designation	Type/ coating	Coated	Applications	s mm	d mm	d1 mm		17824	...
RDHX 0702 MOT	Al, polished	-	N	2.38	7	2.7	10 pcs.		**304**
RDHX 0702 MOT	K 10/Al2O3	x	K H	2.38	7	2.7	10 pcs.		**305**
RDHX 0702 MOT	P 25/Al2O3	x	P	2.38	7	2.7	10 pcs.		**306**
RDHX 0702	ABC10T, chamfered	-	S	2.38	7	2.7	-		**330**
RDHX 0702	ABC25T, chamfered	-	H	2.38	7	2.7		-	**331**

17824 304

17824 305

17824 306

17824 330-331

		Clamping screw		Wrench	
Spare parts For indexable insert	**TX size T**	**17613**	**...**	**52529**	**...**
RDHX 0702	7		**201**		**402**

For indexable inserts RDHX 1003

Copy milling cutters with shank

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Shank Ø mm	Working depth L2 mm	17614	...
20	2	90	20	30		**101**
20L	2	110	25	22		**102**
20XL	2	160	25	25		**103**

17614 101

Copy milling cutters with thread

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Clamping thread	17614	...
20	2	28	M 10		**110**
25	3	32	M 12		**111**
30	4	42	M 16		**112**
35	5	42	M 16		**113**
42	6	42	M 16		**114**

17614 110-114

Copy milling cutters with bore

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Location hole mm	17614	...
42	6	40	16		**120**
52	7	50	22		**121**

17614 120-121

Indexable inserts and spare parts

ISO designation	Type/ coating	Coated	Applications	s mm	d mm	d1 mm		17824	...
RDHX 1003 MOT	Al, polished	-	N	3.18	10	3.1	10 pcs.		**309**
RDHX 1003 MOT	K 10/Al2O3	x	K H	3.18	10	3.1	10 pcs.		**310**
RDHX 1003 MOT	P 25/Al2O3	x	P	3.18	10	3.1	10 pcs.		**311**
RDHX 1003 MOT	P 40/Al2O3	x	P	3.18	10	3.1	10 pcs.		**312**
RDHX 1003 MOT	M 40/Al2O3	x	M	3.18	10	3.1	10 pcs.		**313**
RDHX 1003	ABC10T, chamfered	-	S	3.18	10	3.1	-		**332**
RDHX 1003	ABC25T, chamfered	-	H	3.18	10	3.1		-	**333**

17824 309

17824 310

17824 311

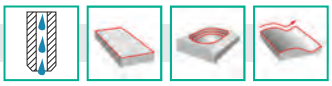
17824 312

17824 332-333

		Clamping screw		Wrench	
Spare parts For indexable insert	**TX size T**	**17614**	**...**	**52529**	**...**
RDHX 1003	15		**201**		**406**

Continued

17613 - 17824 Face and copy milling cutters



Continued

Design
- **Nickel-plated** milling cutter body in hardened special steel
- Robust design for smooth running
- High **radial and axial runout accuracy**

Applications
For face and copy milling with high rotation speeds and feed rates. For **toolmaking and mould making.**

For indexable inserts RDHX 12T3

Copy milling cutters with thread

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Shank Ø mm	17615 ...
24	2	35	M 12	110
32	3	42	M 16	111
35	3	42	M 16	112
42	5	42	M 16	113

17615 110-113

Copy milling cutters with bore

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Location hole mm	17615 ...
42	4	40	16	120
52	5	50	22	121
66	6	50	27	122
80	7	50	27	123

17615 120-123

Indexable inserts and spare parts

ISO designation	Type/ coating	Coated	Applications	s mm	d mm	d1 mm		17824 ...
RDHX 12T3 MOT	Al, polished	-	N	3.97	12	3.9	10 pcs.	314
RDHX 12T3 MOT	K 10/Al2O3	x	K H	3.97	12	3.9	10 pcs.	315
RDHX 12T3 MOT	P 25/Al2O3	x	P	3.97	12	3.9	10 pcs.	316
RDHX 12T3 MOT	P 40/Al2O3	x	P	3.97	12	3.9	10 pcs.	317
RDHX 12T3 MOT	M 40/Al2O3	x	M	3.97	12	3.9	10 pcs.	318
RDHX 12T3	ABC10T, chamfered	-	S	3.97	12	3.9	-	334
RDHX 12T3	ABC25T, chamfered	-	H	3.97	12	3.9	-	335

17824 314 | 17824 315 | 17824 316

17824 317 | 17824 334-335

Spare parts for indexable insert	TX size T	Clamping screw 17615 ...	Clamping claw 17615 ...	Wrench 52529 ...
RDHX 12T3	15	200	201	406

For indexable inserts RDHX 1604

Copy milling cutters with bore

Cutting edge Ø mm	No. of cutting edges	Overall length mm	Location hole mm	17616 ...
52	4	50	22	120
66	5	50	27	121
80	6	50	27	122
100	7	50	32	123

17616 120-123

Indexable inserts and spare parts

ISO designation	Carbide type/ coating	Coated	Applications	s mm	d mm	d1 mm		17824 ...
RDHX 1604 MOT	Al, polished	-	N	4.76	16	5.0	10 pcs.	319
RDHX 1604 MOT	K 10/Al2O3	x	K H	4.76	16	5.0	10 pcs.	320
RDHX 1604 MOT	P 25/Al2O3	x	P	4.76	16	5.0	10 pcs.	321
RDHX 1604 MOT	P 40/Al2O3	x	P	4.76	16	5.0	10 pcs.	322
RDHX 1604 MOT	M 40/Al2O3	x	M	4.76	16	5.0	10 pcs.	323

17824 319 | 17824 320

17824 321 | 17824 322

Spare parts for indexable insert	TX size T	Clamping screw 17616 ...	Clamping claw 17616 ...	Wrench 52529 ...
RDHX 1604	20	200	201	407

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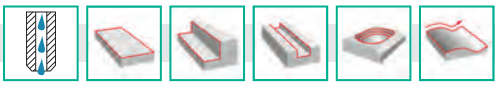
Round insert milling system, 251-RS



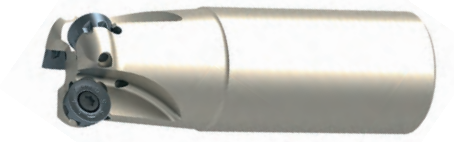
CUTTING SOLUTIONS BY CERATIZIT

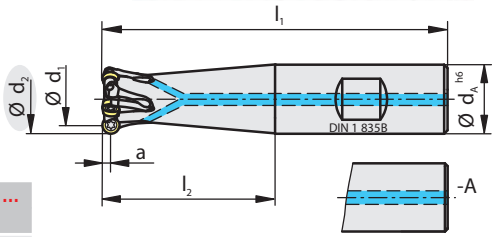
Design
- Sturdy basic body with Hard & Tough coating
- Insert seat with indexing aid
- Power screw with Ø 40 mm and Ø 50 mm

Advantages:
- Easy cutting, low-vibration cutting edge geometry
- Maximum process reliability
- Predictable wear behaviour
- Reproducible service life

Scope of delivery:
- Basic body with clamping screws
- **Without** indexable inserts

17868 101-126

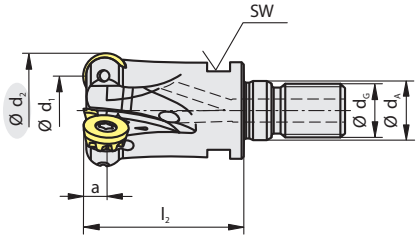




with shank

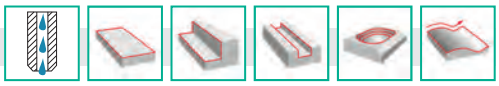
Ø d_2 mm	Designation	Z	Ø d_1 mm	l_1 mm	l_2 mm	Ø d_A mm	a mm	Indexable inserts	17868	...
10	C251.10.R.02-05-A-25-165-RS	2	5	165	25	10	2.5	RD.. 0501..		**101**
10	C251.10.R.02-05-B12-20-RS	2	5	67	20	12	2.5	RD.. 0501..		**102**
12	C251.12.R.03-05-A-32-165-RS	3	7	165	32	12	2.5	RD.. 0501..		**103**
12	C251.12.R.03-05-B16-25-RS	3	7	75	25	16	2.5	RD.. 0501..		**104**
16	C251.16.R.04-05-A-40-165-RS	4	11	165	40	16	2.5	RD.. 0501..		**105**
16	C251.16.R.04-05-B-32-RS	4	11	81	32	16	2.5	RD.. 0501..		**106**
20	C251.20.R.05-05-A-50-165-RS	5	15	165	50	20	2.5	RD.. 0501..		**107**
20	C251.20.R.05-05-B-40-RS	5	15	91	40	20	2.5	RD.. 0501..		**108**
16	C251.16.R.02-08-A-40-165-RS	2	8	165	40	16	4.0	RD.. 0802..		**109**
16	C251.16.R.02-08-B-32-RS	2	8	81	32	16	4.0	RD.. 0802..		**110**
20	C251.20.R.03-08-A-50-200-RS	3	12	200	50	20	4.0	RD.. 0802..		**111**
20	C251.20.R.03-08-A-60-RS	3	12	110	60	20	4.0	RD.. 0802..		**113**
20	C251.20.R.03-08-B-40-RS	3	12	91	40	20	4.0	RD.. 0802..		**114**
25	C251.25.R.04-08-A-60-RS	4	17	116	60	25	4.0	RD.. 0802..		**115**
25	C251.25.R.04-08-A-60-225-RS	4	17	225	60	25	4.0	RD.. 0802..		**116**
25	C251.25.R.04-08-B-50-RS	4	17	107	50	25	4.0	RD.. 0802..		**117**
20	C251.20.R.02-10-A-50-RS	2	10	102	50	20	5.0	RP.. 10T3..		**118**
20	C251.20.R.02-10-A-50-200-RS	2	10	200	50	20	5.0	RP.. 10T3..		**119**
25	C251.25.R.03-10-A-60-RS	3	15	116	60	25	5.0	RP.. 10T3..		**120**
25	C251.25.R.03-10-A-60-225-RS	3	15	225	60	25	5.0	RP.. 10T3..		**121**
25	C251.25.R.03-10-B-60-RS	3	15	116	60	25	5.0	RP.. 10T3..		**122**
32	C251.32.R.04-10-A-70-RS	4	22	130	70	32	5.0	RP.. 10T3..		**123**
25	C251.25.R.02-12-B-30-RS	2	13	86	30	25	6.0	RP.. 1204..		**124**
32	C251.32.R.03-12-A-40-RS	3	20	100	40	32	6.0	RP.. 1204..		**125**
32	C251.32.R.03-12-B-40-RS	3	20	100	40	32	6.0	RP.. 1204..		**126**

17868 201-213



Ø d_2 mm	Designation	Z	Ø d_1 mm	l_2 mm	a mm	Ø d_A mm	Ø d_G mm	Indexable inserts	17868	...
20	G251.20.R.05-05-RS	5	15	33	2.5	10.5	10	RD.. 0501..		**201**
25	G251.25.R.06-05-RS	6	20	35	2.5	12.5	12	RD.. 0501..		**202**
32	G251.32.R.07-05-RS	7	27	35	2.5	17.0	16	RD.. 0501..		**203**
20	G251.20.R.03-08-RS	3	12	33	4.0	10.5	10	RD.. 0802..		**204**
25	G251.25.R.04-08-RS	4	17	35	4.0	12.5	12	RD.. 0802..		**205**
32	G251.32.R.05-08-RS	5	24	35	4.0	17.0	16	RD.. 0802..		**206**
20	G251.20.R.02-10-RS	2	10	33	5.0	10.5	10	RP.. 10T3..		**207**
25	G251.25.R.03-10-RS	3	15	35	5.0	12.5	12	RP.. 10T3..		**208**
32	G251.32.R.04-10-RS	4	22	35	5.0	17.0	16	RP.. 10T3..		**209**
25	G251.25.R.02-12-35-RS	2	13	35	6.0	12.5	12	RP.. 1204..		**210**
32	G251.32.R.03-12-35-RS	3	20	35	6.0	17.0	16	RP.. 1204..		**211**
35	G251.35.R.03-12-35-RS	3	23	35	6.0	17.0	16	RP.. 1204..		**212**
42	G251.42.R.04-12-42-RS	4	30	42	6.0	17.0	16	RP.. 1204..		**213**

Continued

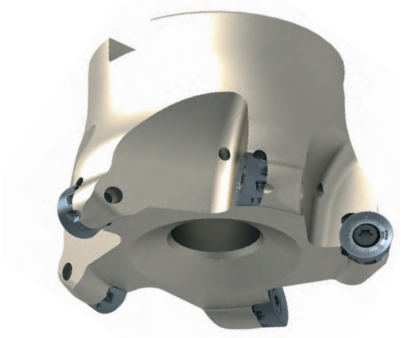


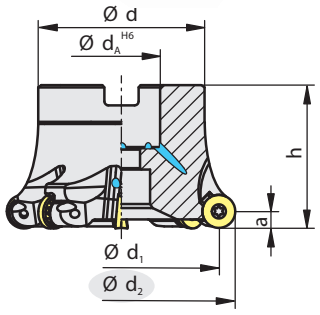
17868 - 17870 Round insert milling system, 251-RS

Continued

Ø d_2 mm	Designation	Z	Ø d_1 mm	h mm	Ø d mm	Ø d_A mm	a mm	Indexable inserts	with bore 17868 ...
40	A251.40.R.03-10-RS	3	30	40	38	16	5	RP.. 10T3..	301
40	A251.40.R.05-10-RS	5	30	40	38	16	5	RP.. 10T3..	302
42	A251.42.R.06-10-RS	6	32	40	38	16	5	RP.. 10T3..	303
50	A251.50.R.04-10-RS	4	40	40	43	22	5	RP.. 10T3..	304
50	A251.50.R.06-10-RS	6	40	40	43	22	5	RP.. 10T3..	305
52	A251.52.R.06-10-RS	6	42	40	43	22	5	RP.. 10T3..	306
40	A251.40.R.04-12-RS	4	28	40	38	16	6	RP.. 1204..	307
50	A251.50.R.04-12-RS	4	38	40	43	22	6	RP.. 1204..	308
50	A251.50.R.05-12-RS	5	38	40	43	22	6	RP.. 1204..	309
52	A251.52.R.05-12-RS	5	40	40	43	22	6	RP.. 1204..	310
63	A251.63.R.06-12-RS	6	51	40	48	22	6	RP.. 1204..	311
66	A251.66.R.07-12-RS	7	54	40	48	22	6	RP.. 1204..	312
80	A251.80.R.05-12-RS	5	68	50	58	27	6	RP.. 1204..	313
80	A251.80.R.07-12-RS	7	68	50	58	27	6	RP.. 1204..	314
100	A251.100.R.06-12-RS	6	88	50	78	32	6	RP.. 1204..	315
100	A251.100.R.10-12-RS	10	88	50	78	32	6	RP.. 1204..	316
50	A251.50.R.04-16-RS	4	34	40	48	22	8	RP.. 1605..	317
52	A251.52.R.04-16-RS	4	36	40	48	22	8	RP.. 1605..	318
63	A251.63.R.05-16-RS	5	47	40	48	22	8	RP.. 1605..	319
80	A251.80.R.06-16-RS	6	64	50	58	27	8	RP.. 1605..	320
100	A251.100.R.07-16-RS	7	84	50	78	32	8	RP.. 1605..	321

17868 301-321





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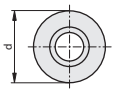

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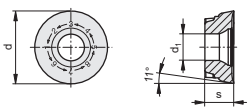


17870 102 17870 105 17870 107 17870 110 17870 113 17870 116

Applications
Cemented carbide type
Coating

Designation	d mm	s mm	d_1 mm		N H216T Uncoated 17870 ...	PK CTCP230 CVD 17870 ...	MP CTPM245 PVD 17870 ...
RDHX 0501MOFN	5	1.59	2.5	10 pcs.	101		
RDHX 0501MOSN	5	1.59	2.5	10 pcs.		106	
RDHX 0802MOFN	8	2.38	2.8	10 pcs.	102		
RDHX 0802MOSN	8	2.38	2.8	10 pcs.		107	
RDHX 0802MOEN-F50	8	2.38	2.8	10 pcs.			116 NEW
RPHX 10T3M8FN-27P	10	3.97	3.4	10 pcs.	103		
RPHX 10T3M8SN	10	3.97	3.4	10 pcs.		108	
RPHX 10T3M8EN-F50	10	3.97	3.4	10 pcs.			113
RPHX 1204M8FN-27P	12	4.76	4.4	10 pcs.	104		
RPHX 1204M8SN	12	4.76	4.4	10 pcs.		109	
RPHX 1204M8EN-F50	12	4.76	4.4	10 pcs.			117 NEW
RPHX 1605M8FN-27P	16	5.56	5.5	10 pcs.	105		
RPHX 1605M8SN	16	5.56	5.5	10 pcs.		110	
RPHX 1605M8EN-F50	16	5.56	5.5	10 pcs.			118 NEW

Spare parts

for indexable inserts Size	Clamping screw	Key	Clamping screw 17999 ...	Wrench 51932 ...
RD.. 0501..	M 2.0 x 3.3	T 6	117	202
RD.. 0802..	M 2.5 x 5.0	T 8	115	204
RP.. 10T3..	M 3.0 x 7.3	T 10	119	206
RP.. 1204..	M 3.5 x 8.6	T 15	116	207
RP.. 1605..	M 4.5 x 10.5	T 20	120	208

For cutters with bore Ø d_1 mm	Power screw	For indexable inserts size	Power screw 17998 ...
40	M 8 x 30.0	RP.. 10T3..	101
50	M 10 x 31.0	RP.. 1605..	102

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

17526 Adjustable chamfer cutter

ATORN®

Design
- **Adjustable from 10–80°**
- Straight shank with driving surface according to DIN 1835 B
- **Includes one replaceable cassette** for indexable inserts **TCMT16T3...** and **SCMT1204...**

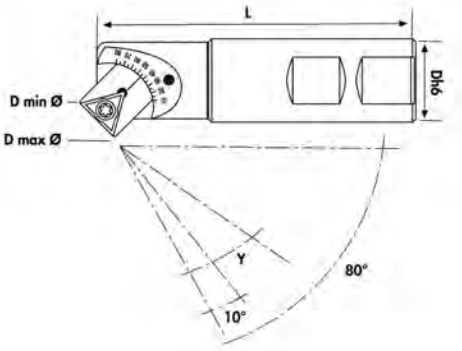
Scope of delivery:
Counter sink milling cutter with clamping screw and wrench, **without** indexable inserts.

Applications
For chamfering, deburring and countersinking. Stable, smooth running.

Note:
For indexable inserts SCMT see art. no. 18578–18582.
For replacement cassette for TCMT, see art. no. 17526 201.
For replacement cassette for SCMT, see art. no. 17526 202.

17526

Y	TCMT D min. Ø mm	TCMT D max. Ø mm	SCMT D min. Ø mm	SCMT D max. Ø mm
10°	5	32	7.5	30.0
20°	6	33	10.0	32.0
30°	7	34	13.0	32.5
40°	10	33	16.5	33.5
45°	11	33	17.5	33.5
50°	13	32	19.0	33.5
60°	16	31	22.0	33.5
70°	19	29	24.5	33.5
80°	23	27	27.0	31.0



D h6 mm	L mm	17526 ...
20	100	100
25	100	101
25	150	102
25	200	103

17530 Adjustable chamfer cutter

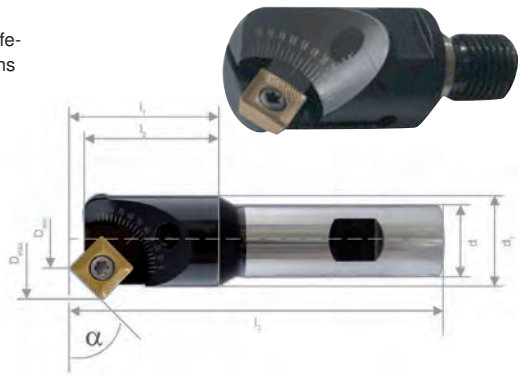
HHW

Design
- Continuously adjustable angle range from 0° to 90°
- Stable structure enables minimal machining times due to high cutting values
- For standard indexable inserts SD...
- All four cutting edges can be used
- Clearance of two indexable insert edges enables forward and reverse chamfering
- Deep engraved scale for extra-long service life
- Straight shank with driving surface according to DIN 1835 B
- No need for special tools, complex 5-axis programming or additional clamping of the sine bar or angle table

Applications
For chamfering, deburring and countersinking to the full cutting edge length. For face milling, profile groove milling, pocket milling and circular chamfering of larger countersinks at all angular positions from 0° to 90°, and for oblique plunge milling.

Quality
Made of high-quality, heat-treated steel.

17530



Ø D_2 mm	d_1 mm	l_2 mm	l_3 mm	D max. mm	D min. mm	L min.–max. mm	AF mm	Indexable inserts	17530 ...
16	18.65	32	89.0	20.54–23.99	2.94–20.79	33.0–35.0	-	SD... 09T3	201
20	25.00	37	101.5	27.00–31.60	3.20–27.00	35.9–40.5	-	SD... 1205	301
M 16	28.50	46	73.5	27.00–31.60	3.20–27.00	44.9–49.5	24	SD... 1205	302

Applications		P	M	NK
Cemented carbide type		CTCP230	CTPM240	H216T
Coating		coated	coated	coated
ISO designation	r mm	17530 ...	17530 ...	17530 ...
SDHT 09T308SR-29	10.75	500		
SDHT 09T308SR-33	10.75		501	
SDHT 09T308FR-27P	10.75			502
SDMT 1205ZZSN-29	14.60	510		
SDMT 1205ZZSN-29	14.60		511	
SDHT 120508FR-27P	14.60			512

Spare parts	Clamping screw	Adjustable angle
Indexable insert	17530 ...	17530 ...
SD... 09T3	210	211
SD... 1205	310	311

17527 Chamfer cutters, 30°/45°/60°

DIN 1835 B

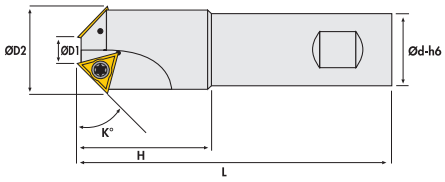
ATORN®

Design
Countersink angles 30°, 45°, 60°, straight shank in accordance with DIN 1835 B, right-hand cutting.
Without indexable inserts.

Applications
For countersinking screw heads and deburring bores and slots.

Note:
For indexable inserts see art. no. 17856.

17527



K°	Ø D2 mm	Ø D1 mm	Ø d h6 mm	H mm	Z	L mm	Indexable inserts	17527 ...
30	32.0	6.0	25	38	2	95	TCMT 16T3	100
45	16.0	1.2	12	20	1	70	TCMT 1102	101
45	21.0	6.2	20	35	2	90	TCMT 1102	102
45	32.5	10.4	25	42	2	95	TCMT 16T3	103
60	16.0	5.4	12	20	1	70	TCMT 1102	104
60	26.0	15.8	20	35	2	90	TCMT 1102	105
60	35.0	20.0	25	39	2	95	TCMT 16T3	106

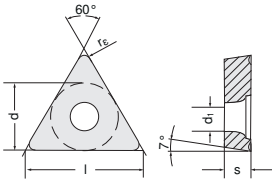
Spare parts

For indexable inserts size	Clamping screw	L mm	TX size IP	Clamping screws 17528	...	Wrench 51932	...
TCMT 1102	M 2.5 x 0.45	6.3	8		101		404
TCMT 16T3	M 4.0 x 0.7	8.0	15		102		407

17856 Indexable milling inserts, TCMT

HW

Design
- **Triangular**
- Positive 7°
- With sintered chip breaker



17856

Applications P M
Cemented carbide grade H 42
Coating TiN

ISO designation	l mm	d mm	d_1 mm	s mm	r		17856 ...
TCMT 110202	11.0	6.35	2.80	2.38	0.20	10 pcs.	101
TCMT 16T304	16.5	9.52	4.40	3.97	0.40	10 pcs.	102

17529 Chamfer cutters, 45°

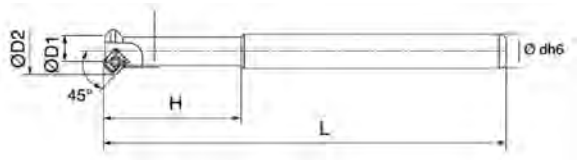
DIN 1835 B

ATORN®

Design
Chamfer cutters, 45° with Weldon shank.
Applications
For chamfer cutting from Ø 4 mm.

Note:
For indexable inserts see art. no. 18578 ff.

17529 (Z2 + 3)



45°

Ø D2 mm	Ø D1 mm	L mm	H mm	Ød h6 mm	Z mm	Indexable inserts	17529 ...
10.0	4	80	28	12	1	SCMT 0602	101
20.0	11	80	33	12	2	SCMT 0602	102
23.7	12	100	37	20	1	SCMT 09T3	103
28.8	16	100	31	16	2	SCMT 09T3	104
42.3	30	100	32	20	3	SCMT 09T3	105
23.7	12 L	200	37	20	1	SCMT 09T3	106
28.8	16 L	200	32	16	2	SCMT 09T3	107
42.3	30 L	200	32	20	3	SCMT 09T3	108

Spare parts

For indexable inserts size	Clamping screw	L mm	TX size IP	Clamping screws 17528	...	Wrench 51932	...
SCMT 0602	M 2.5 x 0.45	6.3	8		101		404
SCMT 09T3	M 4.0 x 0.7	8.0	15		102		407

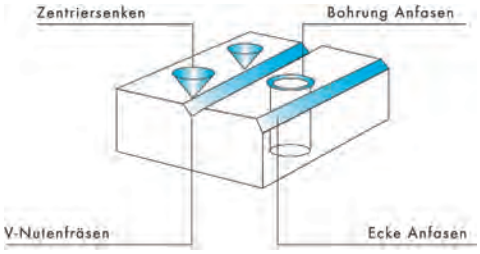
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

17536 - 17857 Chamfer and centring cutters

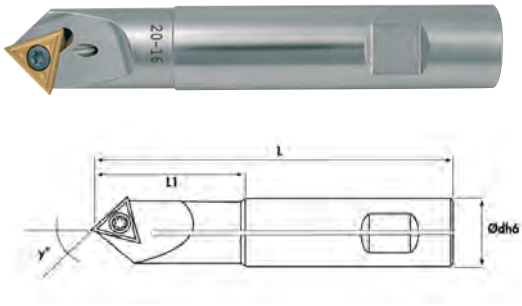
ATORN®

Design
- Indexable insert holder
- Tip angle 45°
- With coolant bore
- Without indexable inserts

Applications
For NC spot drilling, chamfering and V-groove milling.



17536



d1 h6 mm	L mm	L1 mm	y°	Z	D min. mm	D max. mm	17536	...
20	115	40	45	1	0.2	20		**101**
20	150	60	45	1	0.2	20		**102**
20	200	80	45	1	0.2	20		**103**

Indexable inserts and spare parts

17857

Applications			P M K
Cemented carbide grade			H 42
Coating			TiN
ISO designation			**17857** ...
TCMX 16T3 ZR	10 pcs.		**101**

		Clamping screw		Wrench	
Size	**TX size T**	**17761**	...	**52529**	...
M 4 x 8	15		**101**		**406**

17536 Chamfer and centring cutters, 30°/45°

ATORN®

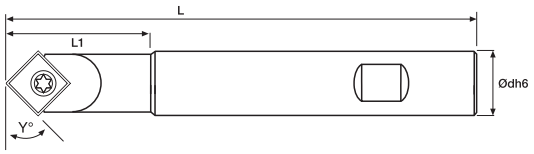
Design
- With straight shank and clamping surface in accordance with DIN 1835 B
- Tip angles 30° and 45°
- Shaft tolerance h6
- **Without** indexable insert (art. no. 17536 201 + 202)

Latest technology:
- Indexable insert sits in the tool holder rotated by 180°

Applications
For NC spot drilling, chamfering and engraving.

NEW

17536 201-202



d1 h6 mm	Ø Ds mm	L mm	L1 mm	Y°	Z	D min. mm	D max. mm	17536	...
16	0.8	120	40	30°	1	0.8	17		**201**
16	0.8	120	40	45°	1	0.8	21		**202**

17536 203-204
Design
Set comprises a chamfer cutter and engraver's milling cutter 30° or 45° including five indexable inserts SEEX 12T408, 1 clamping screw, 1 wrench. In a practical tool box.

17536 203-204

Set	17536	...
30°		**203**
45°		**204**

17536 205

Applications					P M K
Coating					TiN/PVD
ISO designation	**l mm**	**s mm**	**r mm**		**17536** ...
SEEX 12T408	12.25	5.25	0.8	10 pcs.	**205**

Spare parts		Clamping screw		Wrench	
Size	**TX size T**	**17536**	...	**52529**	...
M 4 x 11.0	15		**206**		**406**

17540 - 17541 T-slot cutter

ATORN®

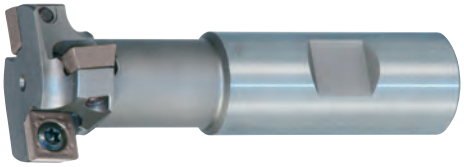
Design
- T-slot cutter made of special steel with driving surface according to DIN 1835 B

Advantage:
For ISO indexable inserts SPMT.

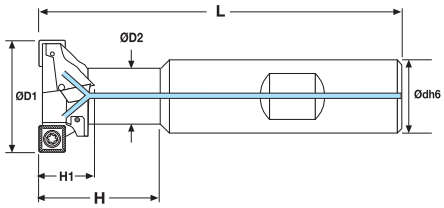
Scope of delivery:
- With clamping screw and wrench
- **Without** indexable inserts

Applications
For T-slots in accordance with DIN-UNI 4788-ISO 299.

17540



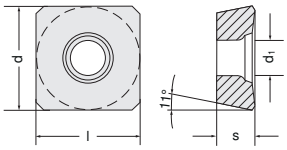
Ø D1 mm	Ø D2 mm	L mm	H mm	H1 mm	Ø dh6 mm	K mm	Z	Indexable inserts	17540	...
21	11	76	26	9	16	1	2	SPMT 060304		110
25	13	82	31	11	16	2	4	SPMT 060304		111
32	17	88	38	14	20	2	4	SPMT 09T308		112
40	21	108	50	17	25	2	4	SPMT 09T308		113
50	27	120	56	22	32	2	4	SPMT 120408		114



Indexable inserts and spare parts

17541

Applications Cemented carbide grade						P M K HC 4635	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm	17541	...
SPMT 060304	6.35	6.35	3.18	2.8	0.4		201
SPMT 09T308	9.52	9.52	3.97	4.5	0.8		202
SPMT 120408	12.70	12.70	4.76	5.5	0.8		203

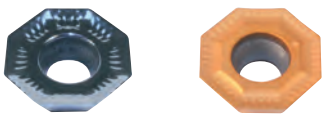


Spare parts		Clamping screw		Wrench	
For indexable inserts size	TX size T	17520	...	52529	...
SPMT 06..	8		202		403
SPMT 09..	15		206		406
SPMT 12..	20		207		407

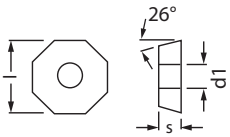
17710 Indexable milling inserts OFEX/OFMT

ATORN®

17710 401 17710 403



Applications Carbide type Coating				N HW 4410 Uncoated		P K HC 4635 Coated		P M HC 4535 Coated	
ISO designation	l mm	d1 mm	s mm	17710	...	17710	...	17710	...
OFEX 05T305	12.7	4.5	3.97		401				
OFMT 05T305	12.7	4.5	3.97				402		403



Spare parts		Clamping screw		Wrench	
For indexable inserts size	TX size T	17710	...	52529	...
OF.. 05T3..	15		301		406

Face and copy milling cutters

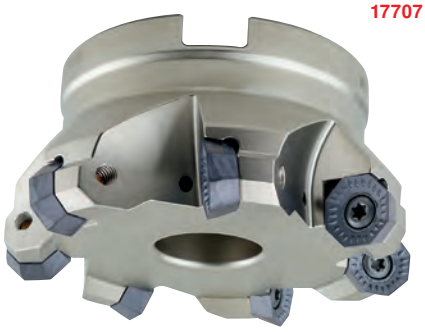
ATORN®

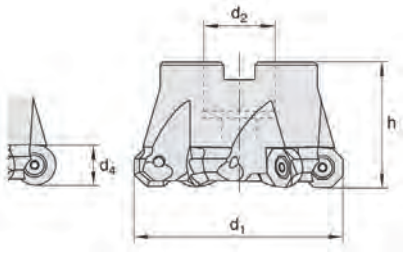
Design
- High feed rates and smooth running
- Wide pitch means minimal power required
- Suitable for low-performance machines
- Axial and oblique plunge milling possible, suitable for excavation and pocket milling
- **Without** indexable inserts

Applications
Universal use for a broad range of materials.
For face milling with 8-edge, 12-edge or round indexable inserts **OCKX, RCKX or XCKX.**

Note:
*Ø 52–100 mm **with** internal cooling supply*
*Ø 125 mm **without** internal cooling supply*

17707





Face and copy milling cutters

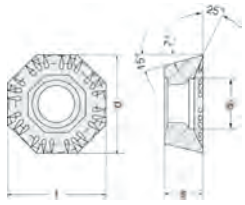
d_1 mm	d_2 mm	h mm	d_4 mm	Z	17707	...
52	22	40	16	4		**101**
66	27	50	16	5		**102**
80	27	50	16	6		**103**
100	32	50	16	7		**104**
125	40	63	16	8		**105**

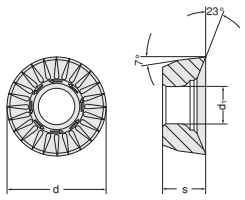
Indexable inserts and spare parts

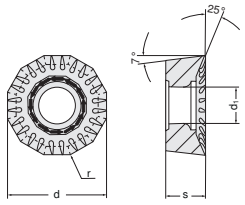
17817
Design
- TRT with wide cutting edge chamfer

Applications
HC 4640 = roughing.
HC 4410 = aluminium/non-ferrous metals.

OCKX **RCKX** **XCKX** **17817**







Applications Cemented carbide grade Coating							P M HC 4640 coated		K N HC 4410 coated	
ISO designation	**s mm**	**l mm**	**d mm**	**d_1 mm**	**r mm**		17817	...	17817	...
OCKX 0606 AD-TR	6.35	16	16	5.8	0.5	10 pcs.		**115**		**105**
RCKX 1606 MO-TR	6.35	-	16	5.8	-	10 pcs.		**117**		**107**
RCKX 1606 MO-TRT	6.35	-	16	5.8	-	10 pcs.				**108**
XCKX 1606 ZDR-TR	6.35	-	16	5.8	-	10 pcs.		**119**		

		Clamping screw 10		Wrench	
Size	**TX size T**	17708	...	52529	...
M 5 x 12	20		**101**		**407**

Info — The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use HM grade Coating				P M K H 42 coated	
Designation	**W$^{\pm 0,1}$ mm**	**R$^{\pm 0,05}$ mm**		18674	...
GTN-2	2,2	0,16	10 pieces		**113**
GTN-3	3,1	0,20	10 pieces		**114**

17722 - 17847 Face milling cutters, 45°

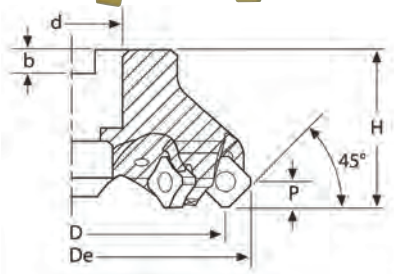
ATORN®

Design
- Double-sided indexable inserts
- Large clamping angle
- Eight cutting edges
- Cutting with low cutting force and excellent surface finish
- With internal cooling (except art. no. 17722 107–108)

Applications
For universal use.

Note:
Supplied with clamping screw and wrench.

17722

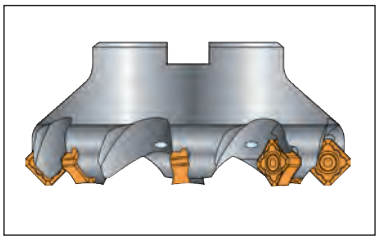


Narrow pitch

Ø D mm	Ø De mm	d mm	b mm	H mm	p mm	Z	17722 ...
50	63	22	6.3	40	6	4	101
63	76	22	6.3	40	6	6	102
80	93	27	7.0	50	6	7	103
100	113	32	8.0	50	6	8	104
125	138	40	9.0	63	6	10	105
160	173	40	9.0	63	6	12	106
200	213	60	13.5	63	6	14	107
250	263	60	13.5	63	6	16	108

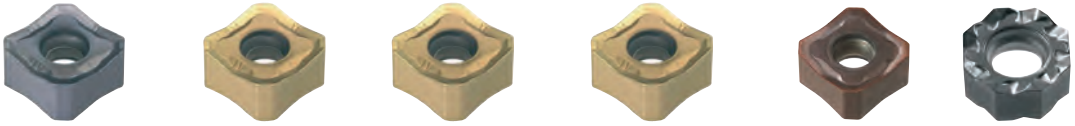
Extra narrow pitch

Ø D mm	Ø De mm	d mm	b mm	H mm	p mm	Z	17722 ...
50	63	22	6.3	40	6	6	110
63	76	22	6.3	40	6	8	111
80	93	27	7.0	50	6	10	112
100	113	32	8.0	50	6	12	113
125	138	40	9.0	63	6	16	114
160	173	40	9.0	63	6	20	115



Indexable inserts and spare parts

17847 101 | 17847 103+203 | 17847 102+202 | 17847 104+204 | 17847 105 | 17847 205-207



Applications / Carbide type / Coating			N HW 4310 Uncoated		P HC 4630 Coated		M HC 4535 Coated		K HC 4410 Coated		P M K HC 4635 (UNI) Coated	
ISO designation	KF mm		17847	...	17847	...	17847	...	17847	...	17847	...
SNEX 1206 ANN-MA	2.36	10 pcs.		101								
SNMX 1206 ANN-MB1	2.36	10 pcs.				103		102		104		
SNKX 1206 ANN-MM1	2.36	10 pcs.										105
SNMU 1206 ANER	2.36	10 pcs.				203		202		204		
ONMU 1205 ANN	2.36	10 pcs.				205 NEW		206 NEW		207 NEW		

Spare parts			Clamping screw		Wrench	
For indexable inserts size	Screw	TX size T	17723	...	52529	...
SN.X 1206	M 4.0 x 11.0	20		101		407

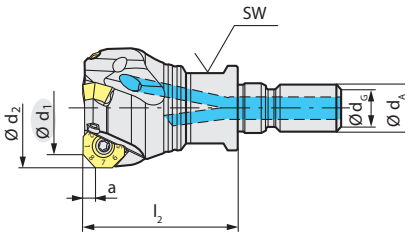
Face milling cutter system 274

CUTTING SOLUTIONS BY CERATIZIT

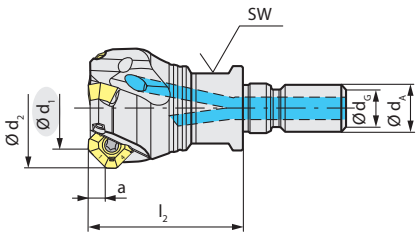
Design
- Sturdy basic body
- Extremely positive installation position of the indexable insert
- Patented screw clamping

Advantages:
- Soft cut
- Low power requirement
- 8 usable cutting edges

Scope of delivery:
- Basic body with clamping screws
- **Without** indexable inserts



17876 101-103
(with indexable insert OF..)

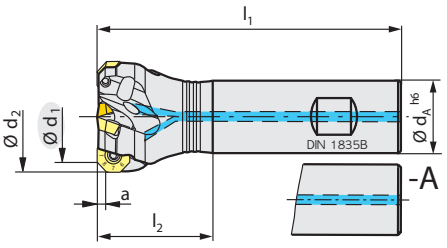


17876 101-103
(with indexable insert SF..)

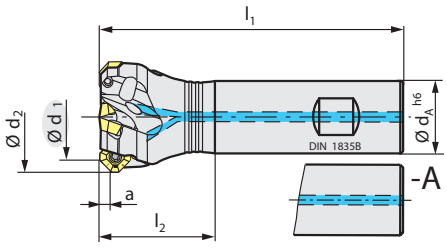
with thread

Ø d_1 mm	Designation	Z	Ø d_2 mm	l_2 mm	a mm	Ø d_A mm	Ø d_G mm	Indexable inserts	17876	...
20 (18.9)	G274.20.R.03-09	3	25.6 (27.4)	35 (35.7)	2.5 (3.8)	12.5	12	OF.. 04.. / SF.. 09..		**101**
25 (23.8)	G274.25.R.04-09	4	30.6 (32.5)	35 (35.7)	2.5 (3.8)	12.5	12	OF.. 04.. / SF.. 09..		**102**
32 (30.7)	G274.32.R.05-09	5	37.7 (39.5)	35 (35.7)	2.5 (3.8)	17.0	16	OF.. 04.. / SF.. 09..		**103**

(*) Dimensions for indexable insert SF



17876 201-206
(with indexable insert OF..)



17876 201-206
(with indexable insert SF..)

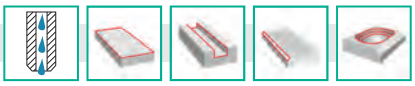
with shank

Ø d_1 mm	Designation	Z	Ø d_2 mm	l_1 mm	l_2 mm	a mm	Ø d_A mm	Indexable inserts	17876	...
20 (18.9)	C274.20.R.03-09-A-25	3	25.6 (27.4)	77 (77.7)	25 (25.7)	2.5 (3.8)	20	OF.. 04.. / SF.. 09..		**201**
20 (18.9)	C274.20.R.03-09-B-25	3	25.6 (27.4)	77 (77.7)	25 (25.7)	2.5 (3.8)	20	OF.. 04.. / SF.. 09..		**202**
25 (23.8)	C274.25.R.04-09-A-20-32	4	30.7 (32.5)	84 (84.7)	32 (32.7)	2.5 (3.8)	20	OF.. 04.. / SF.. 09..		**203**
25 (23.8)	C274.25.R.04-09-B-20-32	4	30.7 (32.5)	84 (84.7)	32 (32.7)	2.5 (3.8)	20	OF.. 04.. / SF.. 09..		**204**
32 (30.7)	C274.32.R.05-09-A-25-40	5	37.7 (39.5)	98 (98.7)	40 (40.7)	2.5 (3.8)	25	OF.. 04.. / SF.. 09..		**205**
32 (30.7)	C274.32.R.05-09-B-25-40	5	37.7 (39.5)	98 (98.7)	40 (40.7)	2.5 (3.8)	25	OF.. 04.. / SF.. 09..		**206**

(*) Dimensions for indexable insert SF

Continued

17876 - 17877 Face milling cutter system 274



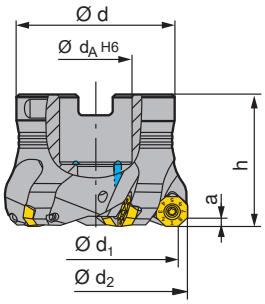
Continued

CUTTING SOLUTIONS BY CERATIZIT

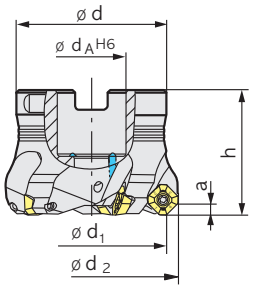
Design
- Sturdy basic body
- Extremely positive installation position of the indexable insert
- Patented screw clamping

Advantages:
- Soft cut
- Low power requirement
- 8 usable cutting edges

Scope of delivery:
- Basic body with clamping screws
- **Without** indexable inserts



17876 301-312
(with indexable insert OF..)

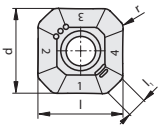


17876 301-312
(with indexable insert SF..)

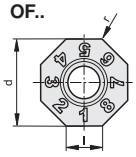
Ø d_1 mm	Designation	Z	Ø d_2 mm	h mm	Ø d mm	Ø d_A mm	a mm	Indexable inserts	with bore 17876	...
32 (30.7)	A274.32.R.05-09	5	37.7 (39.2)	40 (40.7)	38	16	2.5 (3.8)	OF.. 04.. / SF.. 09..		**301**
40 (38.7)	A274.40.R.04-09	4	45.7 (47.6)	40 (40.7)	38	16	2.5 (3.8)	OF.. 04.. / SF.. 09..		**302**
40 (38.7)	A274.40.R.06-09	6	45.7 (47.6)	40 (40.7)	38	16	2.5 (3.8)	OF.. 04.. / SF.. 09..		**303**
50 (48.7)	A274.50.R.05-09	5	55.7 (57.6)	40 (40.7)	48	22	2.5 (3.8)	OF.. 04.. / SF.. 09..		**304**
50 (48.7)	A274.50.R.07-09	7	55.7 (57.6)	40 (40.7)	48	22	2.5 (3.8)	OF.. 04.. / SF.. 09..		**305**
63 (61.7)	A274.63.R.06-09	6	68.7 (70.5)	40 (40.7)	48	22	2.5 (3.8)	OF.. 04.. / SF.. 09..		**306**
63 (61.7)	A274.63.R.09-09	9	68.7 (70.5)	40 (40.7)	48	22	2.5 (3.8)	OF.. 04.. / SF.. 09..		**307**
80 (78.7)	A274.80.R.07-09	7	85.7 (87.5)	50 (50.7)	58	27	2.5 (3.8)	OF.. 04.. / SF.. 09..		**308**
80 (78.7)	A274.80.R.11-09	11	85.7 (87.5)	50 (50.7)	58	27	2.5 (3.8)	OF.. 04.. / SF.. 09..		**309**
100 (98.7)	A274.100.R.09-09	9	105.7 (107.5)	50 (50.7)	78	32	2.5 (3.8)	OF.. 04.. / SF.. 09..		**310**
100 (98.7)	A274.100.R.13-09	13	105.7 (107.5)	50 (50.7)	78	32	2.5 (3.8)	OF.. 04.. / SF.. 09..		**311**
125 (123.7)	A274.125.R.12-09	12	130.7 (132.5)	63 (63.7)	88	40	2.5 (3.8)	OF.. 04.. / SF.. 09..		**312**

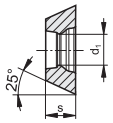
(*) Dimensions for indexable insert SF

SF..



OF..





	17877 101	17877 104	17877 102	17877 105	17877 103	17877 106
Applications		N		M P		P
Cemented carbide type		CTWN215		CTPM245		CTPP235
Coating		uncoated		PVD		PVD

Designation	d mm	l mm	s mm	l_1 mm	r mm	d_1 mm		17877	...	17877	...	17877	...
SFHT 0903AFFR-F10	9.52	9.52	3.18	1.73	1.0	3.35	10 pcs.		**101**				
SFHT 0903AFSR-F50	9.52	9.52	3.18	1.73	1.0	3.35	10 pcs.				**102**		
SFKT 0903AFSR-M50	9.52	9.52	3.18	1.73	1.0	3.35	10 pcs.						**103**
OFHT 040305FN-F10	9.52	3.94	3.18	-	0.5	3.35	10 pcs.		**104**				
OFHT 040305SN-F50	9.52	3.94	3.18	-	0.5	3.35	10 pcs.				**105**		
OFHT 040305SN-M50	9.52	3.94	3.18	-	0.5	3.35	10 pcs.						**106**

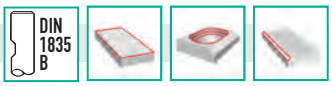
Spare parts for indexable inserts Size	Clamping screw	Key	Clamping screw 10	...	Wrench	...
			17999	...	51932	...
OF.. 04.. / SF.. 09..	M 2.5 x 7.6	IP 8		**122**		**404**

For cutters with bore Ø d_1 mm	For indexable inserts size	Power screw	Power screw 17998	...
32 (30.7)–40 (38.7)	OF.. 04.. / SF.. 09..	M 8 x 30.0		**101**

(*) Dimensions for indexable insert SF

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

17534 Chamfer cutters, 45°



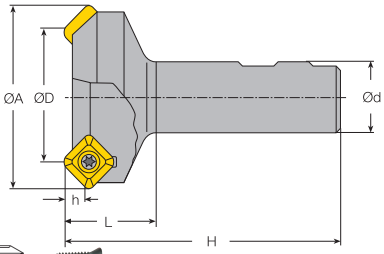
ATORN®

Design
- **Positive**
- Right cutting
- Combination shank with straight shank in accordance with DIN 1835 B
- **Without** indexable inserts

Applications
For chamfering, face milling and circular milling.

Note:
For indexable inserts see art. no. 17838 and 17845.

17534

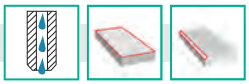


Ø D mm	Ø d h6 mm	L mm	Z	Indexable inserts	17534	...
24	25	100	2	SE.T 1204..		102
32	25	110	3	SE.T 1204..		103
40	32	115	4	SE.T 1204..		104

Spare parts

For indexable inserts size	Clamping screw	Length mm	TX size T	Clamping screw 17721	...	Wrench 52529	...
SE.T 1204..	M 5.0 x 0.8	11	20		101		407

17720 Face milling cutter 45°

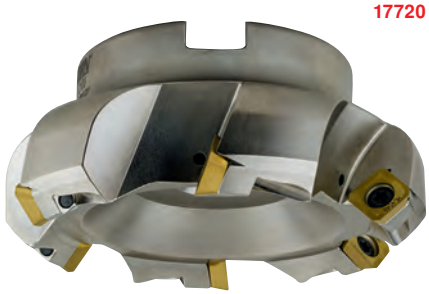


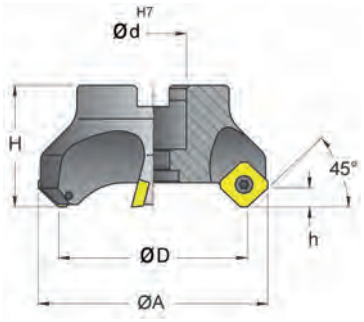
ATORN®

Design
- **Positive**
- Right cutting
- **Without** indexable inserts
- With internal cooling (except art. no. 17720 214–215)

Applications
For square indexable inserts SE.T 1204..
Item no. 17838 and 17845.

17720





Narrow pitch

Ø D mm	Ø d H7 mm	H mm	Ø A mm	h mm	Z	Indexable inserts	17720	...
40	16	40	53	6	3	SE.T 1204..		200
50	22	48	63	6	4	SE.T 1204..		201
63	22	48	76	6	5	SE.T 1204..		202
80	27	50	93	6	6	SE.T 1204..		203
100	32	50	113	6	6	SE.T 1204..		204
125	40	63	138	6	7	SE.T 1204..		205
160	40	63	173	6	8	SE.T 1204..		206
200	60	63	213	6	12	SE.T 1204..		214
250	60	63	263	6	16	SE.T 1204..		215

Extra narrow pitch

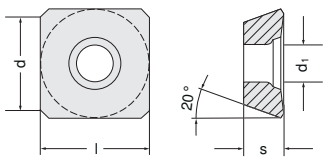
Ø D mm	Ø d H7 mm	H mm	Ø A mm	h mm	Z	Indexable inserts	17720	...
40	16	40	53	6	4	SE.T 1204..		207
50	22	48	63	6	5	SE.T 1204..		208
63	22	48	76	6	6	SE.T 1204..		209
80	27	50	93	6	7	SE.T 1204..		210
100	32	50	113	6	8	SE.T 1204..		211
125	40	63	138	6	9	SE.T 1204..		212
160	40	63	173	6	10	SE.T 1204..		213

Spare parts

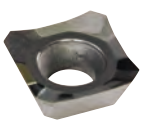
For indexable inserts size	Clamping screw	Length mm	TX size T	Clamping screw 17721	...	Wrench 52529	...
SE.T 1204..	M 5.0 x 0.8	11	20		101		407

17838 Indexable milling inserts, SEHT

Design
- **Square**
- Positive 20°
- With chip breaker



17838 203



17838 202

Applications
Carbide type
Coating

N
H 25/Al
Uncoated

PM
H 42
TiN

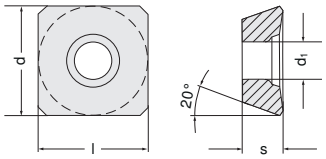
ISO designation	d+l mm	d_1 mm	s mm		17838	...	17838	...
SEHT 1204 AF	12.7	5.50	4.76	10 pcs.				202
SEHT 1204 AF-AL	12.7	5.50	4.76	10 pcs.		203		

17845 Indexable milling inserts, SEET

ATORN®

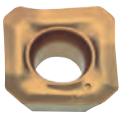
Design
- **Square**
- Positive 20°
- With chip breaker

Tolerance classes in comparison:
SEET +/- 0.025 mm,
SEKT +/- 0.130 mm.



17845 101

17845 102-103



Applications					N	P M K	M K
Cemented carbide grade					HW 4410	HC 4540	HC 4620
Coating					uncoated	coated	coated
ISO designation	d+l mm	d_1 mm	s mm		17845 ...	17845 ...	17845 ...
SEET 1204 AF SN	12.7	5.50	4.76	10 pcs.	101	103	102

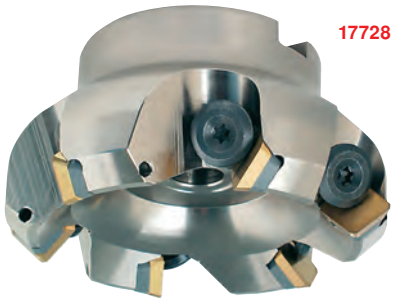
17728 - 17729 Face milling cutter 45°

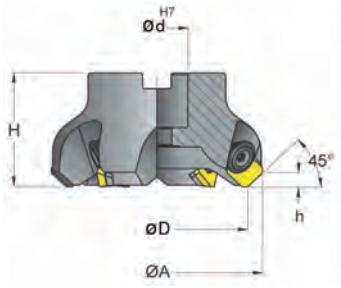
ATORN®

Design
- **Positive**
- Right- and left-hand cutting
- **Without** indexable inserts

Applications
For square indexable inserts, SEE. 1203, art. no. 17841 + 17843.

17728





		Right-hand cutting		Left-hand cutting	
Ø D mm	Ø d mm	H mm	Ø A mm	h mm	Z	Indexable inserts	17728	...	17728	...
50	22	48	63	6	4	SEE. 1203	101		109 NEW
63	22	40	76	6	5	SEE. 1203	102		110 NEW
80	27	50	93	6	6	SEE. 1203	103		111 NEW
100	32	50	113	6	6	SEE. 1203	104		112 NEW
125	40	63	138	6	7	SEE. 1203	105		113 NEW
160	40	63	173	6	8	SEE. 1203	106		
200	60	63	213	6	10	SEE. 1203	107		
250	60	63	263	6	13	SEE. 1203	108		

		Spare parts 17729	...
Support plate	-		101
Screw for support plate	10 pcs.		102
Clamping screw for right-hand cutting face milling cutters	10 pcs.		103
Clamping screw for left-hand cutting face milling cutters	10 pcs.		104 NEW

17729 101

17729 102

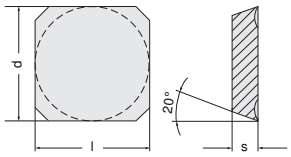
17729 103

17841 Indexable milling inserts, SEEN

ATORN®

Design
- **Square**
- Positive 20°
- Without chip breaker

Tolerance classes in comparison:
SEEN +/- 0.025 mm,
SEKN +/- 0.130 mm.



17841 103

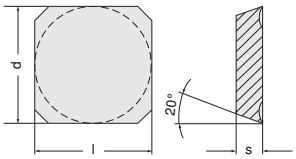
Applications				P M K	M K
Cemented carbide grade				HC 4540	HC 4620
Coating				coated	coated
ISO designation	d+l mm	s mm		17841 ...	17841 ...
SEEN 1203 AF FN	12.7	3.18	10 pcs.	103	102
SEEN 1203 AF SN	12.7	3.18	10 pcs.	107	106

17843 Indexable milling inserts, SEER

ATORN®

Design
- **Square**
- Positive 20°
- With chip breaker

Tolerance classes in comparison:
SEER +/- 0.025 mm,
SEKR +/- 0.130 mm.



17843 102

Applications				P M K	M K
Cemented carbide grade				HC 4540	HC 4620
Coating				coated	coated
ISO designation	d+l mm	s mm		17843 ...	17843 ...
SEER 1203 AF SN	12.7	3.18	10 pcs.	102	101

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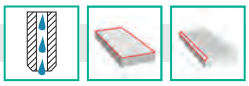
17739 Face milling cutter 45°

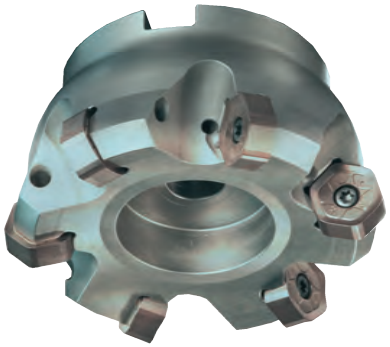


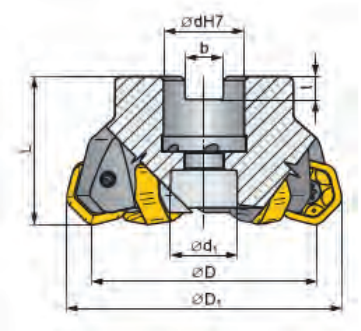
Design
- Indexable insert tool for roughing and for medium machining
- Uneven tooth pitch for smooth running
- New material and hardening technologies for maximum tool accuracy
- Special surface treatment for optimum corrosion resistance and longer service life

Advantage:
- Favourable cutting costs due to the 12-edged indexable insert

Applications
For face milling, chamfering, oblique plunge milling.
HNGJ09-S indexable insert for medium machining
HNGJ09-R indexable insert for roughing

17739 101-105



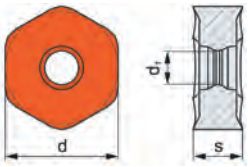


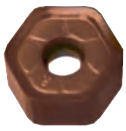
Ø D mm	Ø d H7 mm	d_1 mm	L mm	D_1 mm	Z	17739 ...
50	22	18	40	61.7	4	101
63	22	19	41	74.7	6	102
80	27	38	50	91.7	6	103
80	27	39	51	91.7	8	104
100	32	45	52	111.7	8	105

Indexable inserts and spare parts

Applications Carbide type Coating				P M P 40 coated		P K P 30 coated		P K K 15 coated	
Designation	d mm	s mm	d_1 mm	17739	...	17739	...	17739	...
HNGJ09-S	16.5	6.35	4.9		201		202		
HNGJ09-R	16.5	6.35	4.9				204		203

17739 201-204





Spare parts Indexable insert size	Size	Clamping screw 17739 ...
HNGJ09	M4	301

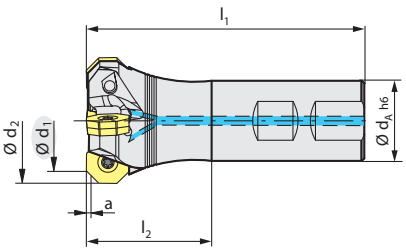
17873 - 17874 Face milling cutter system 273-6

CUTTING SOLUTIONS BY CERATIZIT

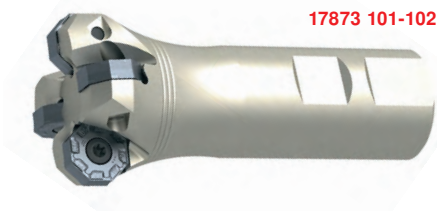
Design
- Sturdy basic body with Hard & Tough coating
- Maximum number of cutting edges

Advantages:
- Highly economical
- Reduced power consumption
- High stability and running smoothness

Scope of delivery:
- Basic body with clamping screws
- **Without** indexable inserts



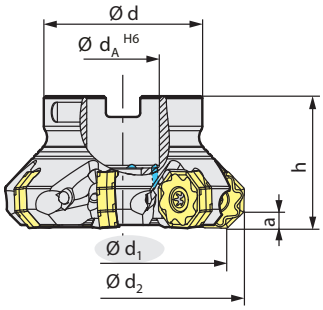
17873 101-102

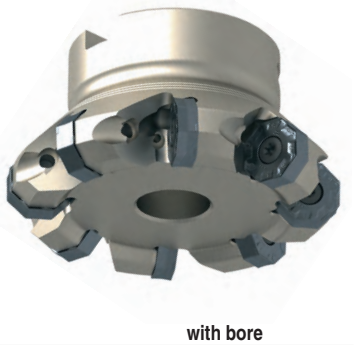


with shank

Ø d_1 mm	Designation	Z	Ø d_2 mm	l_1 mm	l_2 mm	Ø d_A mm	a mm	Indexable inserts	17873 ...
32	C273.32.R.03-06-B-40	3	42.2	101	40	32	3.5	OAKU 06..	101
40	C273.40.R.04-06-B32-50	4	50.2	111	50	32	3.5	OAKU 06..	102

17873 201-206



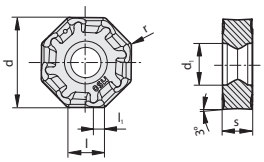


with bore

Ø d_1 mm	Designation	Z	Ø d_2 mm	h mm	Ø d mm	Ø d_A mm	a mm	Indexable inserts	17873 ...
40	A273.40.R.04-06	4	50.2	40	38	16	3.5	OAKU 06..	201
50	A273.50.R.05-06	5	60.2	40	48	22	3.5	OAKU 06..	202
63	A273.63.R.07-06	7	73.2	40	48	22	3.5	OAKU 06..	203
80	A273.80.R.08-06	8	90.2	50	58	27	3.5	OAKU 06..	204
100	A273.100.R.10-06	10	110.2	50	78	32	3.5	OAKU 06..	205
125	A273.125.R.12-06	12	135.2	63	88	40	3.5	OAKU 06..	206

Indexable inserts and spare parts

17874



Applications								M P	P
Cemented carbide grade								CTPM245	CTPP235
Coating								PVD	PVD
Designation	d mm	l mm	s mm	l_1 mm	r mm	d_1 mm		17874 ...	17874 ...
OAKU 060508ER-F40	17.18	6.00	5.56	2.0	0.8	5.8	10 pcs.	101	
OAKU 060508SR-M50	17.18	6.00	5.56	2.0	0.8	5.8	10 pcs.		102

Spare parts for indexable inserts Size	Clamping screw	Key	Clamping screw 17999 ...	Wrench 51932 ...
OAKU 06..	M 5.0 x 14.0	T 20	121	208

Power screw

For cutters with bore Ø d_1 mm	Power screw	For indexable inserts size	17998 ...
40	M 8 x 30.0	OAKU 06..	101
50	M 10 x 31.0	OAKU 06..	102

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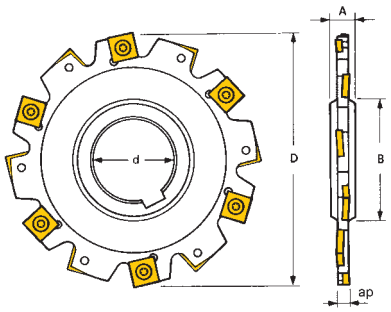
ATORN®

17780

Design
Three-sided cutting, fixed width. Generates a slight arched shape in the groove base. Supplied with clamping screws.

Applications
For bolted indexable inserts (see art. no. 17785–17786). For slitting, cutting and grooving.



For indexable inserts SNHX 1102T

D mm	d mm	ap mm	A mm	B mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17780	...
63	22	4	8	34	8	4	14	SNHX 1102T	VTX 3503		**101**
80	22	4	8	34	10	5	22	SNHX 1102T	VTX 3503		**104**
100	27	4	12	45	12	6	24	SNHX 1102T	VTX 3503		**107**
125	40	4	12	58	14	7	33	SNHX 1102T	VTX 3503		**114**
160	40	4	12	68	18	9	45	SNHX 1102T	VTX 3503		**122**
200	50	4	12	72	18	9	62	SNHX 1102T	VTX 3503		**131**

For indexable inserts SNHX 1103T

D mm	d mm	ap mm	A mm	B mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17780	...
63	22	5	8	34	8	4	14	SNHX 1103T	VTX 3504		**102**
80	22	5	8	34	10	5	22	SNHX 1103T	VTX 3504		**105**
100	27	5	12	45	12	6	24	SNHX 1103T	VTX 3504		**108**
125	40	5	12	58	14	7	33	SNHX 1103T	VTX 3504		**115**
160	40	5	12	68	18	9	45	SNHX 1103T	VTX 3504		**123**
200	50	5	12	72	18	9	62	SNHX 1103T	VTX 3504		**132**

For indexable inserts SNHX 1203T

D mm	d mm	ap mm	A mm	B mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17780	...
63	22	6	8	34	6	3	14	SNHX 1203T	VTX 405		**103**
80	22	6	8	34	8	4	22	SNHX 1203T	VTX 405		**106**
100	27	6	12	45	10	5	24	SNHX 1203T	VTX 405		**109**
125	40	6	12	58	12	6	33	SNHX 1203T	VTX 405		**116**
160	40	6	12	68	16	8	45	SNHX 1203T	VTX 405		**124**
200	50	6	12	72	18	9	62	SNHX 1203T	VTX 405		**133**

For indexable inserts SNHX 1205T

D mm	d mm	ap mm	A mm	B mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17780	...
100	27	10	12	45	10	5	24	SNHX 1205T	VTX 408		**113**
125	40	10	12	58	12	6	33	SNHX 1205T	VTX 408		**120**
160	40	10	12	68	16	8	45	SNHX 1205T	VTX 408		**128**
160	40	14	14	68	15	5	45	SNHX 1205T	VTX 408		**130**
200	50	10	12	72	18	9	62	SNHX 1205T	VTX 408		**135**
200	50	14	14	72	18	6	62	SNHX 1205T	VTX 408		**137**
250	50	10	12	72	24	12	88	SNHX 1205T	VTX 408		**139**

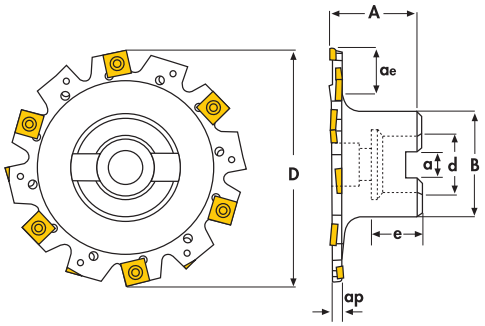
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300-350	300-350	-	140-200	140-200	140-200	120-150	120-150	120-150	-	-	-	-	130-160	130-160	-	100-140	-

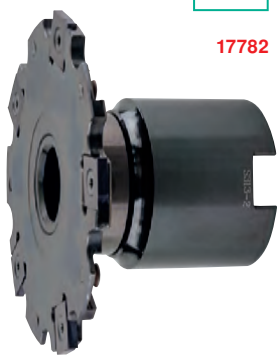
17782 - 17789 Disc milling cutters with collar

ATORN®

Design
With collar. Three-sided cutting, fixed width.
Generates a slight arched shape in the groove base.
Supplied with clamping screws.

Applications
For bolted indexable inserts.
For slitting, cutting and grooving.





17782

For indexable inserts SNHX 1102T

D mm	d mm	ap mm	A mm	B mm	a mm	e mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17782 ...
63	22	4	50	40	10.4	21	6	3	10.5	SNHX 1102T	VTX 3503	101
80	22	4	50	40	10.4	21	8	4	20.2	SNHX 1102T	VTX 3503	104
100	27	4	50	48	12.4	23	12	6	24.2	SNHX 1102T	VTX 3503	107

For indexable inserts SNHX 1103T

D mm	d mm	ap mm	A mm	B mm	a mm	e mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17782 ...
63	22	5	50	40	10.4	21	6	3	10.5	SNHX 1103T	VTX 3504	102
80	22	5	50	40	10.4	21	8	4	20.2	SNHX 1103T	VTX 3504	105
100	27	5	50	48	12.4	23	12	6	24.2	SNHX 1103T	VTX 3504	108

For indexable inserts SNHX 1203T

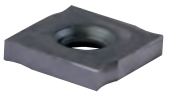
D mm	d mm	ap mm	A mm	B mm	a mm	e mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17782 ...
63	22	6	50	40	10.4	21	6	3	10.5	SNHX 1203T	VTX 405	103
80	22	6	50	40	10.4	21	8	4	20.2	SNHX 1203T	VTX 405	106
100	27	6	50	48	12.4	23	10	5	24.2	SNHX 1203T	VTX 405	109
125	40	6	50	70	16.4	30	12	6	23.7	SNHX 1203T	VTX 405	111
160	40	6	50	70	16.4	30	16	8	41.2	SNHX 1203T	VTX 405	113

For indexable inserts SNHX 1205T

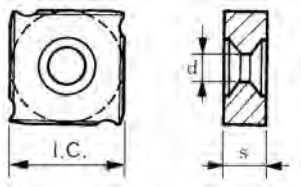
D mm	d mm	ap mm	A mm	B mm	a mm	e mm	Z	Z eff.	Cutting depth ae max. mm	Indexable inserts	Clamping screws	17782 ...
100	27	10	50	48	12.4	23	10	5	24.2	SNHX 1205T	VTX 408	110
125	40	10	50	70	16.4	30	12	6	23.7	SNHX 1205T	VTX 408	112
160	40	10	50	70	16.4	30	16	8	41.2	SNHX 1205T	VTX 408	114

Indexable inserts and spare parts

17785 - 17786



Applications					PMK	K
Carbide type					HC 4630	HW 7415
Coating					TiAlN-coated	Uncoated
ISO designation	l.C. mm	d mm	s mm		17785 ...	17786 ...
SNHX 1102T	11.0	4.4	2.3	10 pcs.	101	101
SNHX 1103T	11.0	4.4	2.7	10 pcs.	102	102
SNHX 1203T	12.7	5.0	3.2	10 pcs.	103	103
SNHX 1205T	12.7	5.0	5.4	10 pcs.	105	105



Type	Size	TX size T	Clamping screws 10	17789 ...	Wrench	52529 ...
VTX 3503	M 3.5 x 3	9		101		404
VTX 3504	M 3.5 x 4	9		102		404
VTX 405	M 4.0 x 5	15		103		406
VTX 408	M 4.0 x 8	15		104		406

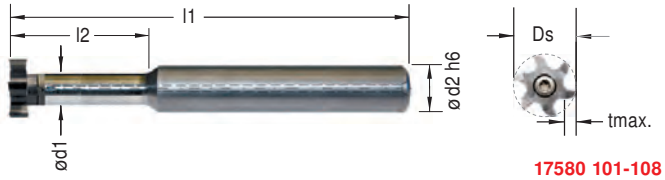
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
300-350	300-350	-	140-200	140-200	140-200	120-150	120-150	120-150	-	-	-	-	130-160	130-160	-	100-140	-

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Dümmel WERKZEUGFABRIK

17580
Clamp holder type ZH22
Design
- With internal coolant supply
- 3-rib toothing

Applications
For producing grooves,
Seeger ring grooves, metric ISO threads, Whitworth pipe threads and full radius grooves, and for chamfering and deburring.



17580 101-108
Solid carbide shaft, DIN 6535 HA

17580 101-108

Designation	Ø d2 h6 mm	Ø d1 mm	l1 mm	l2 mm	Cutting circle Ø DS mm	t max. mm	Clamping screw	TX wrench	17580	...
ZH22.1212.42.A.HM	12	-	100	42	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		101
ZH22.1212.60.A.HM	12	-	130	60	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		102
ZH22.1611.30.A.HM	16	11.5	90	30	21.7	3.9	M5 (17581 101)	T 20 (51932 208)		103
ZH22.1612.42.A.HM	16	12.0	100	42	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		104
ZH22.1612.60.A.HM	16	12.0	130	60	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		105
ZH22.1612.85.A.HM	16	12.0	160	85	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		106
ZH22.2016.45.A.HM	20	16.0	110	45	21.7	2.5	M5 (17581 101)	T 20 (51932 208)		107
ZH22.2016.65.A.HM	20	16.0	130	65	21.7	2.5	M5 (17581 101)	T 20 (51932 208)		108

17580 201-203
Steel shaft, DIN 1835

17580 201-203

Designation	Ø d2 h6 mm	Ø d1 mm	l1 mm	l2 mm	Cutting circle Ø DS mm	t max. mm	Clamping screw	TX wrench	17580	...
ZH22.1011.10.A.ST	10	11.3	60	10.7	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		201
ZH22.1311.25.A.ST	13	11.3	70	25.7	21.7	4.0	M5 (17581 101)	T 20 (51932 208)		202
ZH22.1612.24.A.ST	16	12.0	80	24.0	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		203

17580 301-308
Solid carbide shaft, DIN 6535 HB

17580 301-308

Designation	Ø d2 h6 mm	Ø d1 mm	l1 mm	l2 mm	Cutting circle Ø DS mm	t max. mm	Clamping screw	TX wrench	17580	...
ZH22.1212.42.B.HM	12	-	100	42	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		301
ZH22.1212.60.B.HM	12	-	130	60	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		302
ZH22.1611.30.B.HM	16	11.5	90	30	21.7	3.9	M5 (17581 101)	T 20 (51932 208)		303
ZH22.1612.42.B.HM	16	12.0	100	42	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		304
ZH22.1612.60.B.HM	16	12.0	130	60	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		305
ZH22.1612.85.B.HM	16	12.0	160	85	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		306
ZH22.2016.45.B.HM	20	16.0	110	45	21.7	2.5	M5 (17581 101)	T 20 (51932 208)		307
ZH22.2016.65.B.HM	20	16.0	130	65	21.7	2.5	M5 (17581 101)	T 20 (51932 208)		308

17580 401
Steel shaft, DIN 1835 B

17580 401

Designation	Ø d2 h6 mm	Ø d1 mm	l1 mm	l2 mm	Cutting circle Ø DS mm	t max. mm	Clamping screw	TX wrench	17580	...
ZH22.1612.24.B.ST	16	12	80	24	21.7	4.5	M5 (17581 101)	T 20 (51932 208)		401

Spare parts		Clamping screw		TX wrench	
Clamping screw	TX size T	17581	...	51932	...
M5	20		101		208

Continued

17580 - 17593 Groove and circular form milling system, MINI MILL

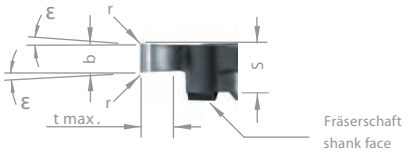
Continued

17582

17582

Dümmel WERKZEUGFABRIK

- Cutting inserts for **Seeger ring grooves,** DIN 471/472 and **general groove milling**
- Cemented carbide/AL 41F TiAlN-coated



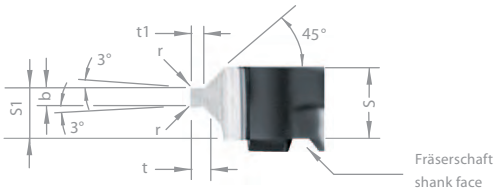
Description	Groove width mm	S mm	Clearance angle (epsilon)	r mm	b -0.02 mm	t max. mm	17582	...
Z22.0070.00	0.7	5.7	1°	-	0.74	1.5		101
Z22.0080.00	0.8	5.7	1°	-	0.84	1.7		102
Z22.0090.00	0.9	5.7	1°	-	0.94	1.9		103
Z22.0100.00	1.0	5.7	1°	-	1.04	2.1		104
Z22.0110.00	1.1	5.7	1°	-	1.21	2.5		105
Z22.0130.00	1.3	5.7	3°	0.1	1.41	4.5		106
Z22.0160.00	1.6	5.7	3°	0.1	1.71	4.5		107
Z22.0185.02	1.85	5.7	3°	0.15	1.96	4.5		108
Z22.0215.02	2.15	5.7	3°	0.15	2.26	4.5		109
Z22.0265.02	2.65	5.7	3°	0.15	2.76	4.5		110
Z22.0315.02	3.15	5.7	3°	0.15	3.26	4.5		111
Z22.0415.02	4.15	5.7	3°	0.15	4.26	4.5		112
Z22.0515.02	5.15	5.7	3°	0.15	5.26	4.5		113

17583

17583

Dümmel WERKZEUGFABRIK

- Cutting inserts with groove outer edge chamfer for **Seeger ring grooves,** DIN 471/472
- Cemented carbide/AL 41F TiAlN-coated



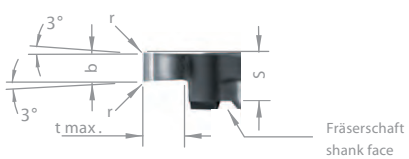
Description	Groove width mm	S mm	S1 mm	r mm	b -0.02 mm	Groove depth t mm	Forming depth t1 -0.04 mm	17583	...
Z22.1105.30	1.1	5.85	5.07	-	1.21	0.50	0.49		101
Z22.1307.30	1.3	5.85	5.17	-	1.41	0.70	0.67		102
Z22.1308.30	1.3	5.85	5.17	-	1.41	0.85	0.83		103
Z22.1609.35	1.6	5.85	5.07	-	1.71	0.85	0.83		104
Z22.1610.35	1.6	5.85	5.07	-	1.71	1.00	0.97		105
Z22.1812.35	1.85	5.85	5.19	0.15	1.96	1.25	1.23		106
Z22.2215.35	2.15	5.85	5.34	0.15	2.26	1.50	1.47		107
Z22.2616.45	2.65	5.85	5.09	0.15	2.76	1.50	1.47		108
Z22.2617.45	2.65	5.85	5.09	0.15	2.76	1.75	1.72		109
Z22.3118.45	3.15	5.85	5.34	0.20	3.26	1.75	1.72		110
Z22.4120.55	4.15	5.85	5.34	0.20	4.26	2.00	1.97		111
Z22.4125.55	4.15	5.85	5.34	0.20	4.26	2.50	2.47		112

17584

17584

Dümmel WERKZEUGFABRIK

- Cutting inserts for **general groove milling**
- Cemented carbide/AL 41F TiAlN-coated



Designation	S mm	r mm	b +0.02 mm	t max. mm	17584	...
Z22.0150.02	5.7	0.2	1.5	4.5		101
Z22.0200.02	5.7	0.2	2.0	4.5		102
Z22.0250.02	5.7	0.2	2.5	4.5		103
Z22.0300.02	5.7	0.2	3.0	4.5		104
Z22.0400.02	5.7	0.2	4.0	4.5		105

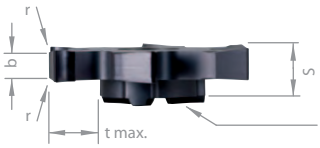
Continued

Continued

17585

Dümmel WERKZEUGFABRIK

- Cutting inserts for **general groove milling with 6 teeth**
- Cemented carbide/AL 41F TiAlN-coated



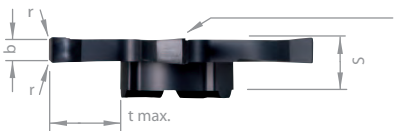
stirnseitig freigeschliffen
frontside freegrinded

Designation	S mm	r mm	b +0.02 mm	t max. mm	17585 ...
Z622.0150.01	6.2	0.1	1.5	4.5	101
Z622.0200.02	6.2	0.2	2.0	4.5	102
Z622.0250.02	6.2	0.2	2.5	4.5	103
Z622.0300.02	6.2	0.2	3.0	4.5	104
Z622.0400.02	6.2	0.2	4.0	4.5	105

17586

Dümmel WERKZEUGFABRIK

- Cutting inserts for **general groove milling with 6 teeth**
- t max. 12 mm can only be used in combination with holder ZH22
- Cemented carbide/AL 41F TiAlN-coated



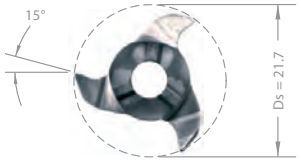
stirnseitig freigeschliffen
frontside freegrinded

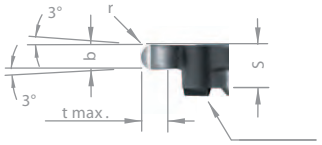
Designation	S mm	r mm	b +0.02 mm	b +0.05 mm	t max. mm	D min. mm	17586 ...
Z637.0050.00	5.85	-	-	0.5	12	37	101
Z637.0100.01	5.85	0.1	1.0	-	12	37	102
Z637.0150.01	5.85	0.1	1.5	-	12	37	103

17587

Dümmel WERKZEUGFABRIK

- Cutting inserts for **full radius grooving**
- Cemented carbide/AL 41F TiAlN-coated





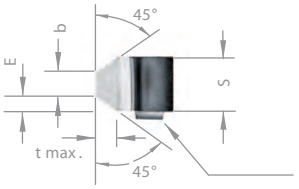
Fräserschaft
shank face

Designation	S mm	r mm	b +0.03 mm	t max. mm	17587 ...
Z22.0005.10	5.75	0.5	1.0	4.5	101
Z22.0010.20	5.75	1.0	2.0	4.5	102
Z22.0014.28	5.75	1.4	2.8	4.5	103
Z22.0015.30	5.75	1.5	3.0	4.5	104
Z22.0020.40	5.75	2.0	4.0	4.5	105

17588

Dümmel WERKZEUGFABRIK

- Cutting inserts for **bore milling, forward and reverse chamfering**
- Cemented carbide/AL 41F TiAlN-coated



Fräserschaft
shank face

Designation	S mm	E mm	b +0.03 mm	t max. mm	17588 ...
Z22.4545.58	5.85	2.00	2.0	1.7	101
Z22.4545.94	9.40	3.25	3.0	3.0	102

Continued

17580 - 17593 Groove and circular form milling system, MINI MILL

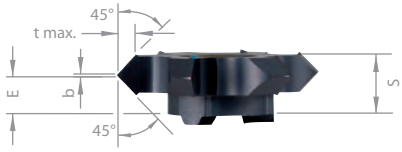
Continued

17589

17589

Dümmel WERKZEUGFABRIK

- Cutting pates for **bore milling, forward and reverse chamfering with 6 teeth**
- Cemented carbide/AL 41F TiAlN-coated



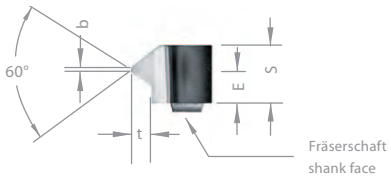
Designation	S mm	E mm	b mm	t max. mm	17589 ...
Z622.4545.63	6.2	3.65	0.2	1.9	101

17590

17590

Dümmel WERKZEUGFABRIK

- Cutting inserts for **metric ISO threads, partial profile**
- Cemented carbide/AL 41F TiAlN-coated



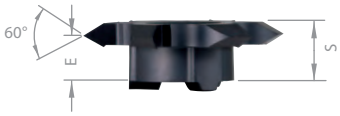
Designation	S mm	Pitch P mm	E mm	b mm	t max. mm	17590 ...
Z22.0720.01	5.85	1.0–2.0	4.6	0.12	1.19	101
Z22.2545.01	5.85	2.0–4.5	3.7	0.31	2.71	102
Z22.0815.01	5.85	1.5–2.75	4.8	0.18	1.62	103
Z22.1020.01	5.85	2.0–3.75	4.6	0.25	2.22	104
Z22.1630.01	5.85	2.5–5.0	4.0	0.37	2.98	105

17591

17591

Dümmel WERKZEUGFABRIK

- Cutting inserts for **metric ISO threads, internal partial profile with 6 teeth**
- Cemented carbide/AL 41F TiAlN-coated



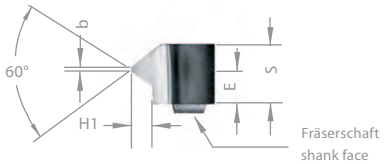
Designation	S mm	Pitch P mm	E mm	Min. thread size	t max. mm	17591 ...
Z622.0720.01	6.20	1.0–2.0	5.1	M 27	1.19	101
Z622.2545.01	6.05	2.0–4.5	4.3	M 27	2.71	102

17592

17592

Dümmel WERKZEUGFABRIK

- Cutting inserts for **metric ISO threads, full profile**
- Cemented carbide/AL 41F TiAlN-coated



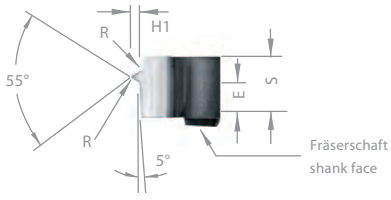
Designation	S mm	Pitch P mm	E mm	b mm	H1 mm	17592 ...
Z22.0815.02	5.85	1.5	4.8	0.19	0.81	101
Z22.0917.02	5.85	1.75	4.7	0.22	0.95	102
Z22.1020.02	5.85	2.0	4.6	0.25	1.08	103
Z22.1630.02	5.85	3.0	4.3	0.37	1.62	104
Z22.1835.02	5.85	3.5	4.1	0.43	1.89	105
Z22.2140.02	5.85	4.0	3.9	0.50	2.16	106
Z22.2445.02	5.85	4.5	3.7	0.56	2.43	107

17593

17593

Dümmel WERKZEUGFABRIK

- Cutting inserts for **Whitworth pipe threads, DIN ISO 228(259) and 2999 full profile**
- Cemented carbide/AL 41F TiAlN-coated

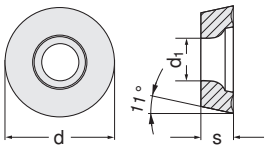


Designation	S mm	Pitch TPI	E mm	R mm	H1 mm	17593 ...
Z22.5506.02	5.85	6 (4.23)	3.1	0.58	2.71	101
Z22.5508.02	5.85	8 (3.17)	3.5	0.43	2.03	102
Z22.5511.02	5.85	11 (2.30)	4.0	0.31	1.48	103

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

17826 Indexable milling insert, RPMT

Design
- **Round**
- Positive 11°
- With sintered chip breaker

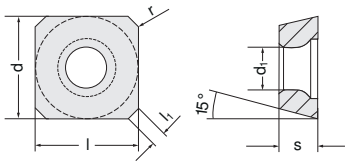


17826

Applications						P M K
Cemented carbide grade						H 42
Coating						TiN
ISO designation	d mm	s mm	d_1 mm			17826 ...
RPMT 1204 MOSN	12	4.76	4.40	10 pcs.		102

17834 Indexable milling inserts, SDHT/SDNT

Design
- **Square**
- Positive 14°
- With chip breaker



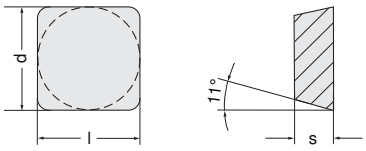
17834

Applications							N	P M
Carbide type							H 25/Al	H 42
Coating							Uncoated	TiN
ISO designation	d+l mm	d_1 mm	s mm	l_1 mm	r		17834 ...	17834 ...
SDHT 0903 AE	9.52	3.40	3.18	1.68	1.0	10 pcs.	102	
SDNT 0903 AESN	9.52	3.40	3.18	1.68	1.0	10 pcs.		101

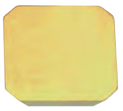
17849 Indexable milling inserts, SPKN

ATORN®

Design
- **Square**
- Positive 11°
- Without chip breaker
- With chamfer milling



17849

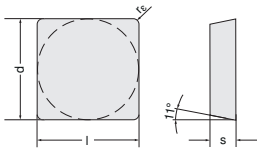


Applications					P M K	M K
Cemented carbide grade					HC 4540	HC 4620
Coating					coated	coated
ISO designation	d+l mm	s mm			17849 ...	17849 ...
SPKN 1203 ED SR	12.7	3.18	10 pcs.		103	102

17855 Indexable milling insert, SPUN

ATORN®

Design
- **Square**
- Positive 11°



17855

Applications						P
Carbide type						HW 4640
Coating						uncoated
ISO designation	d+l mm	s mm	r			17855 ...
SPUN 120308	12.7	3.18	0.4	10 pcs.		101

- *Lathe blanks*
- *Cutting-off and grooving tools*
- *Thread-cutting tools*
- *Lathe tools and chisels*
- *Clamp holders*
- *Boring bars*
- *Indexable inserts*
- *Knurling tools*

18

18.3 – 18.134

- *Circular cutters*
- *Minimum quantity lubrication systems*
- *Coolant hoses*
- *Lubricants and concentrates*
- *Emulsion-mixing devices*
- *Refractometers*
- *Belt skimmers*
- *Thread tallow*
- *Swarf hooks*

19

19.1 – 19.10

Our suppliers for LATHE TOOLS:

ATORN®

HHW

CUTTING SOLUTIONS BY CERATIZIT

Dümmel® WERKZEUGFABRIK

KOMET®

LOC-LINE® FLEXI DAS ORIGINAL

TAPMATIC

testo

zeus

zeus ECO

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info — Overview of external clamp holders

"S" clamping system

Type	SCLCR/L 95°	SDJCR/L 93°	SDNCN 62.5°	SRDCN 90°	SSDCN 45°	STGCR/L 90°
For indexable inserts	CC..	DC..	DC..	RC..	SC..	TC..
Article number	18405 - 18406	18407 - 18410	18411	18400	18402	18416 - 18417
Catalogue page	18.33	18.33	18.34	18.34	18.34	18.35

Type	SVJBR/L 93°	SVJCR/L 93°	SVHCR/L 107.5°	SVVCN 72.5°	SVGCR/L 90°	SVXCR/L 113°
For indexable inserts	VB..	VC..	VC..	VC..	VC..	VC..
Article number	18420 - 18421	18418 - 18419	18424 - 18425	18428	18413	18429
Catalogue page	18.35	18.35	18.36	18.37	18.36	18.37

"C" clamping system

Type	CKJNR/L 93°
For indexable inserts	KNUX
Article number	18430 - 18431
Catalogue page	18.38

"P" clamping system

Type	PCKNR/L 75°	PCLNR/L 95°	PWLNR/L 95°	PSSNR/L 45°
For indexable inserts	CN..	CN..	WN..	SN..
Article number	18442 - 18443	18444 - 18445	18446 - 18447	18448 - 18449
Catalogue page	18.38	18.39	18.39	18.39

Type	PSDNN 45°	PTGNR/L 90°	PDJNR/L 93°
For indexable inserts	SN..	TN..	DN..
Article number	18450	18451 - 18452	18453 - 18454
Catalogue page	18.40	18.40	18.40

"M" clamping system

Type	MTJNR/L 93°	MVJNR/L 93°	MWLNR/L 95°
For indexable inserts	TN..	VN..	WN..
Article number	18460 - 18461	18464 - 18465	18462 - 18463
Catalogue page	18.41	18.41	18.41

Info — Overview of boring bars

"S" clamping system

Type	SCLCR/L 95°	STFCR/L 90°	SDUCR/L 93°	SDQCR/L 107.5°	SVJCR/L 93°
For indexable inserts	CC..	TC..	DC..	DC..	VCMT/VCGT
Article number	18482 - 18487	18490 - 18491	18494 - 18519	18498 - 18501	18509
Catalogue page	18.49 - 18.50	18.51	18.51 - 18.52	18.53	18.53

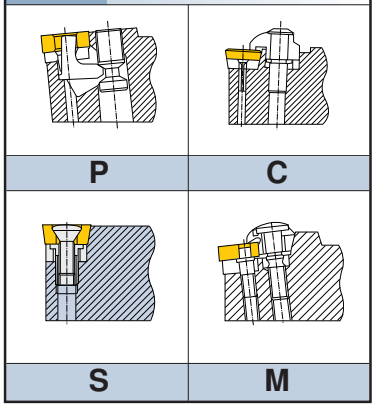
Type	SVUCR/L 93°	SVXCR/L 113°	SVLCR/L 95°	SVVCR/L 72.5°	SV95CR/L 95°	SVQCR/L 107.5°
For indexable inserts	VC..	VCMT/VCGT	VCMT/VCGT	VCMT/VCGT	VCMT/VCGT	VC..
Article number	18512 - 18513	18510	18511	18514	18515	18516 - 18517
Catalogue page	18.54	18.54	18.54 - 18.55	18.55	18.55	18.56

"P" clamping system

Type	PCLNR/L 95°	PDUNR/L 93°	PWLNR/L 95°
For inserts	CN..	DN..	WN..
Article number	18522 - 18523	18526 - 18527	18530 - 18531
Catalogue page	18.56	18.56	18.57

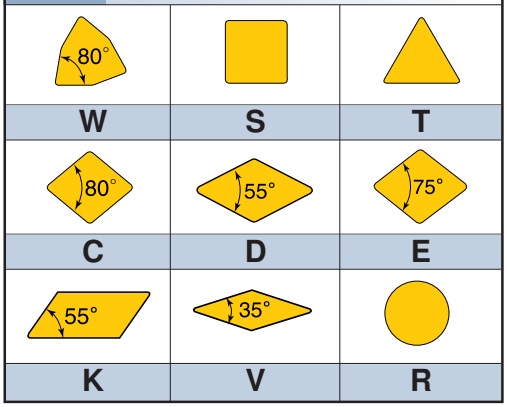
Standard designation for ISO clamp holders (I)

1 CLAMPING SYSTEM



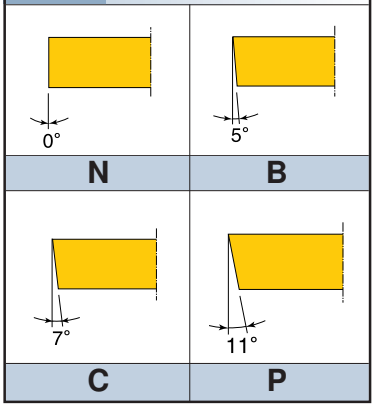
P	C
S	M

2 INSERT SHAPE



W	S	T
C	D	E
K	V	R

4 CLEARANCE ANGLE



N	B
C	P

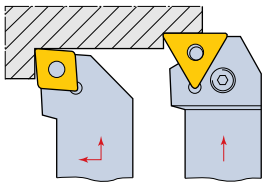
P C L N R

1 2 3 4 5

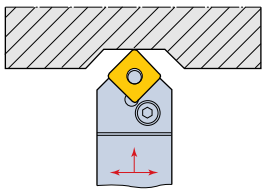
3 SETTING ANGLE

Symbol	Shape	Symbol	Shape	Symbol	Shape
A	90°	J	93°	V	72.5°
	90°	K	75°	W	60°
B	75°	L	95°	X	Special
	75°	M	50°	C	90°
D	45°	N	63°	H	85°
E	60°	R	75°	Q	45°
F	90°	S	45°		
G	90°	T	60°		
	90°	U	93°		

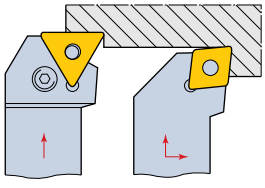
5 CUTTING DIRECTION



R



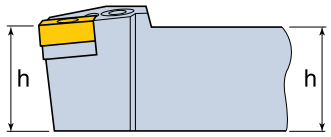
N



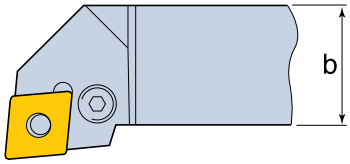
L

Standard designation for ISO clamp holders (II)

6 SHANK HEIGHT



7 SHANK WIDTH

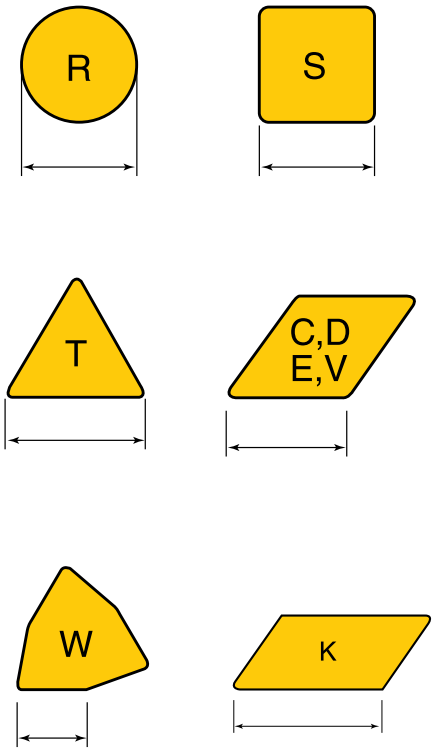


25	25	M	12
6	7	8	9

8 LENGTH OF HOLDER

L (mm)	Symbol	L (mm)	Symbol
32	A	160	N
40	B	170	P
50	C	180	Q
60	D	200	R
70	E	250	S
80	F	300	T
90	G	350	U
100	H	400	V
110	J	450	W
125	K	500	Y
140	L	Special	X
150	M		

9 CUTTING EDGE LENGTH

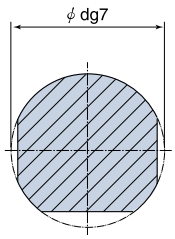


Standard designation for ISO boring bars

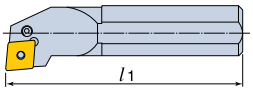
1 BORING BAR

S	Steel shank
A	Steel shank with IKZ
AH	HSS shank with IKZ
C	Solid carbide shank
E	Solid carbide shank with IKZ

2 SHANK Ø

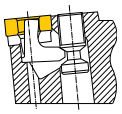
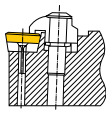


3 LENGTH OF HOLDER

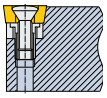
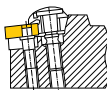


K	125	**U**	350
M	150	**V**	400
Q	180	**W**	450
R	200	**Y**	500
S	250	**X**	Special
T	300		

4 CLAMPING SYSTEM

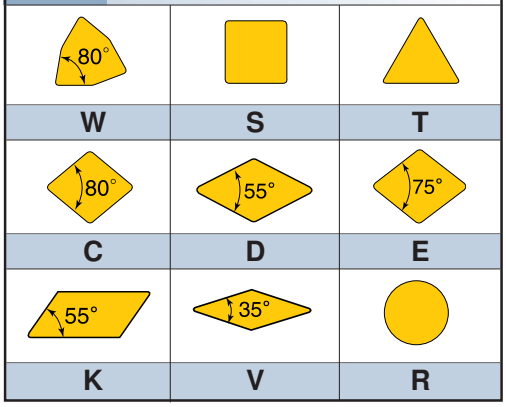
P | **C**

S | **M**

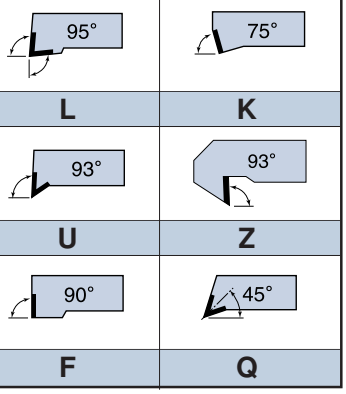
S	32	S	-	C	T	F	P	R	-	16	-	
1	2	3		4	5	6	7	8		9		10

5 INSERT SHAPE



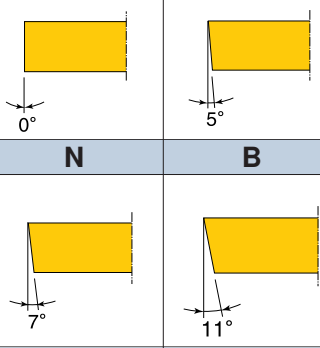
W	**S**	**T**
C	**D**	**E**
K	**V**	**R**

6 SETTING ANGLE



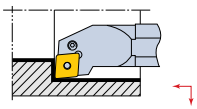
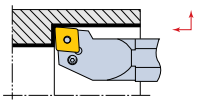
L	**K**
U	**Z**
F	**Q**

7 CLEARANCE ANGLE

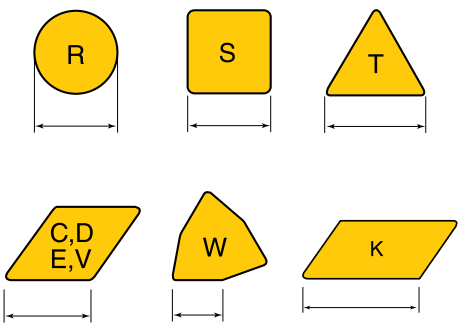


N	**B**
C	**P**

8 CUTTING DIRECTION

R	
L	

9 CUTTING EDGE LENGTH



10 ADDITIONAL INFORMATION

This information is not part of the standard, and is therefore optional to the supplier.

According to ISO, for external and internal machining. For use on NC and CNC-controlled machine tools, but also for use on conventional lathes.

Cutting tools that can be equipped with cemented-carbide cutting edges of various grades and types, as well as with TiN, TiC and al-O-N-coated carbides, offer specific solutions for practically all machining tasks. Cutting data and machiningperformances are optimised.

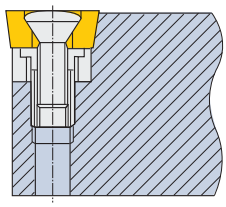
A broad range of chip breakers break chips into short pcs. – a prerequisite for use on modern machine tools with enclosed work areas.

ISO indexable insert clamp holders and boring bars are deliverable with four different clamping systems:

System S

for indexable inserts with centre bore.

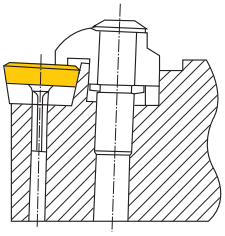
Mounted with central screw.



System C

for indexable inserts without bore (plates according to DIN 4968).

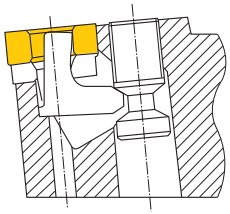
Mounted only with adjustable clamp.



System P

for indexable inserts with centre bore.

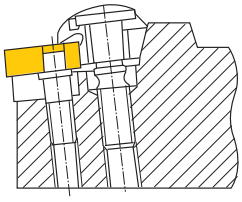
Mounted with clamping lever.



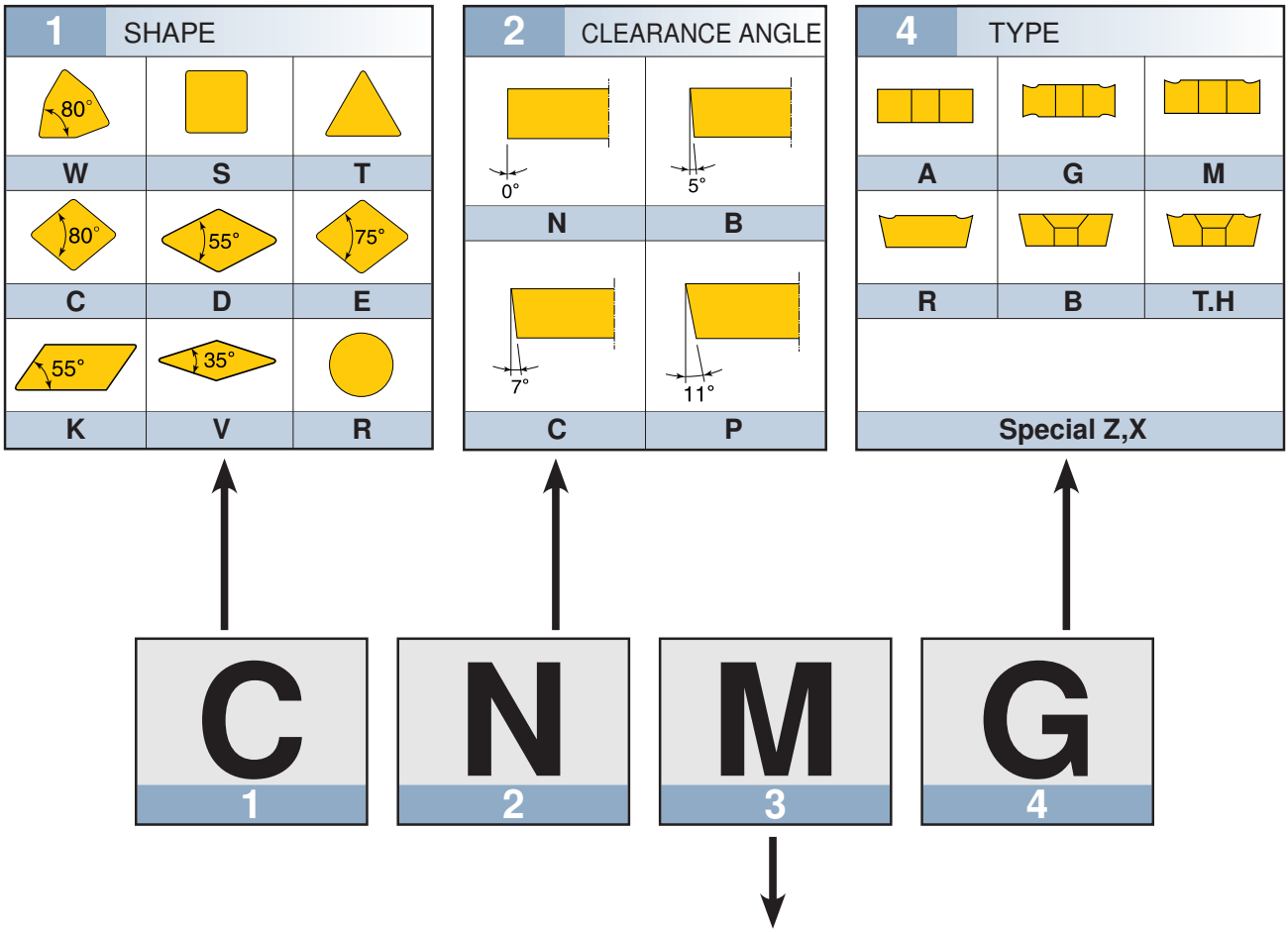
System M

for indexable inserts with centre bore.

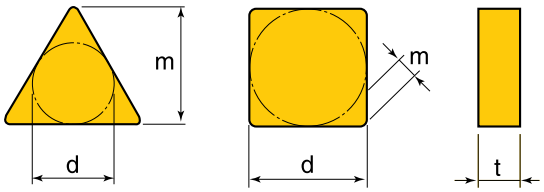
Mounted with adjustable wedge clamping device.



Standard designation for ISO indexable inserts (I)



3 TOLERANCE

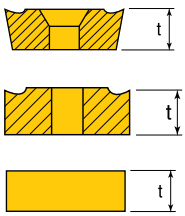


Tolerance class	m	t	d
A	± 0.005	± 0.025	± 0.025
G	± 0.025	± 0.13	± 0.025
M	± 0.08 - ± 0.18	± 0.13	± 0.05 - ± 0.13
U	± 0.13 - ± 0.38	± 0.13	± 0.08 - ± 0.25

In-circle diameter	Tolerance			
	m		d	
	M	U	M	U
6.35	± 0.08	± 0.13	± 0.05	± 0.08
9.52	± 0.08	± 0.13	± 0.05	± 0.08
12.70	± 0.13	± 0.20	± 0.08	± 0.13
15.87	± 0.15	± 0.27	± 0.10	± 0.18
19.05	± 0.15	± 0.27	± 0.10	± 0.18
25.40	± 0.18	± 0.38	± 0.13	± 0.25
31.75	± 0.18	± 0.38	± 0.13	± 0.25

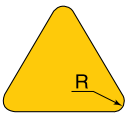
Standard designation for ISO indexable inserts (II)

6 THICKNESS



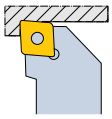
01 = 1.59
T1 = 1.98
02 = 2.38
03 = 3.18
T3 = 3.97
04 = 4.76
05 = 5.56
06 = 6.35
07 = 7.94
09 = 9.52

7 CORNER RADIUS

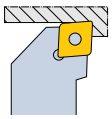


00 = acute
02 = 0.2 mm
04 = 0.4 mm
05 = 0.5 mm
08 = 0.8 mm
12 = 1.2 mm
16 = 1.6 mm
20 = 2.0 mm
24 = 2.4 mm
32 = 3.2 mm

8 CUTTING DIRECTION



R Right-hand version



L Left-hand version

9 CHIP FORMING DESIGNATION

12	04	08	(R)	
5	6	7	8	9

5

In-circle (mm)	Cutting edge length (mm)								
	C	D	E	R	S	T	V	W	K
5.56	05	06			05	09	09	03	
6.35	06	07			06	11	11	04	
8.00				08					
9.52	09	11		09	09	16	16	06	16
10.00		12		10					
12.00				12					
12.70	12	15	13		12	22	22	08	
15.88	16	19		15	15	27	27	10	
16.00				16					16
19.05	19	23		19	19	33	33	13	
20.00				20					
25.00				25					
25.40	25	31		25	25	44			

ATORN®

Selection of carbide grades

ISO	Grade	Material	ISO area	Recommended area of application
P K	HC7610	Steel GG, GGG	P01-P20 K15-K25	Highly wear-resistant grade for small to medium chip cross-sections, high cutting speeds under good conditions
P K	HC7620	Steel GG, GGG	P10-P30 K25-K35	Wear-resistant grade for medium to large chip cross-sections, medium to high cutting speeds under good to moderate conditions
P	HC7630	Steel	P20-P40	Very tough grade for medium to large chip cross-sections, medium cutting speeds under moderate and poor conditions
M P	HC7510	FE Steel	M01-M20 P15-P25	Highly wear-resistant grade for small to medium chip cross-sections, high cutting speeds under good conditions
M S	HC7520	FE Materials that are difficult to machine	M10-M30 S15-S25	Wear-resistant grade for medium to large chip cross-sections, medium to high cutting speeds under good to moderate conditions
M S	HC7530	FE Materials that are difficult to machine	M20-M40 S25-S35	Very tough grade for medium to large chip cross-sections, medium cutting speeds under moderate and poor conditions
M P S	HC7810	FE Steel Super alloys	M01-M20 P01-P15 S01-S20	Highly wear-resistant grade for small to medium chip cross-sections, high cutting speeds under good conditions
M P S	HC7820	FE Steel Super alloys	M10-M30 P15-P25 S10-S30	Wear-resistant grade for medium to large chip cross-sections, medium to high cutting speeds under good to moderate conditions
M P S	HC7830	FE Steel Super alloys	M20-M40 P25-P35 S20-S40	Very tough grade for medium to large chip cross-sections, medium cutting speeds under moderate and poor conditions
N M	HC6310	Aluminium, copper FE	N05-N15 M01-M05	Wear-resistant grade for small to medium chip cross-sections, medium cutting speeds under good conditions
N	HW6310	Aluminium, copper, plastics	N05-N15	Wear-resistant grade for small to medium chip cross-sections, medium cutting speed under good conditions

Geometry selection guide

ISO	Processing	Depth of chip mm	Feed mm/revolution	Negative insert geometry	Positive insert geometry
P	Finishing	0.2-1.5	0.04-0.20	-	FU1
		0.5-2.0	0.10-0.30	FP	FP
	Medium machining	1.5-5.0	0.20-0.50	MP	MP
	Roughing	2.5-10.0	0.25-0.80	RP5	
K	Finishing	0.2-1.5	0.04-0.20	-	FU1
		0.5-2.0	0.10-0.30	MP	-
	Medium machining	1.5-5.0	0.20-0.50	RP5	MP
	Roughing	5.0-15.0	0.50-1.5	RP5	MP
M	Finishing	0.5-2.0	0.10-0.30	FM	-
	Medium machining	1.5-5.0	0.20-0.50	MM	MP
	Roughing	5.0-15.0	0.50-1.5	RM	-
N	Finishing	0.2-1.5	0.04-0.20	-	FU1
		0.5-2.0	0.10-0.30	-	MN
	Medium machining	1.5-5.0	0.20-0.50	-	MN
	Roughing	5.0-15.0	0.50-1.5	-	-
S	Finishing	0.2-1.5	0.04-0.20	-	FU1
		0.5-2.0	0.10-0.30	FM	-
	Medium machining	1.5-5.0	0.20-0.50	MM	MP
	Roughing	5.0-15.0	0.50-1.5	RM	-

		Negative insert geometry	Positive insert geometry
Other influences	Fine finishing	-	FU1/MN
	Cut interruption	RP5	MP
	Vibration tendency	FP/FM	FP
	Unstable machine conditions	FP/FM	FP
	Copy milling	FP/MP/FM/MM	FP/MP

FU1 Extremely positively ground chip breaker for universal finishing work
Very positively ground chip breaker for low cutting depths and very high surface qualities
Extremely low cutting forces with excellent chip breaking
Optimised geometry for long-chipping steels and austenitic stainless steel

FM Chip breaker optimised for low cutting depths and high surface qualities when finishing steel and stainless steel
Very positively curved chip breaker geometry, which also ensures good temperature dissipation, keeps the cutting forces low and offers good chip control

MM Universal chip breaker with very positive geometry, offers a broad infeed range for machining stainless steels and special alloys
Optimised chip breaker for good temperature dissipation, very good chip control and excellent surfaces

RM Robust chip breaker with soft cut, offers a broad infeed range for unfavourable cutting conditions in stainless steel
Ensures very soft cuts with large infeeds and offers good surface qualities
At high cutting depths and feeds, this chip breaker still ensures very soft chip deformation
This chip breaker also ensures good temperature dissipation

Cutting data guideline values

ATORN®

ISO	Material	Conditions		Cutting speed v_c (m/min)																
				Negative indexable insert									Positive indexable insert							
				HC7610	HC7620	HC7630	HC7510	HC7520	HC7530	HC7810	HC7820	HC7830	HC7610	HC7620	HC7630	HC7520	HC7530	HC7810	HC7820	HC6310	HW6310
P	Unalloyed carbon steel	0.05-0.25% C		340-590	300-500	240-430	300-500	–	–	250-270	220-230	200-220	410-530	330-450	290-430	–	–	370-490	310-410	–	–
		0.25-0.55% C		230-360	180-300	140-240	180-300	–	–	190-210	160-180	150-160	250-320	210-270	190-240	–	–	280-390	230-330	–	–
		0.55-0.80% C		280-400	220-320	170-260	220-320	–	–	160-180	130-150	110-130	290-360	240-290	210-260	–	–	240-290	190-230	–	–
				210-300	160-250	110-200	160-250	–	–	160-180	130-140	120-130	210-270	160-230	140-200	–	–	310-350	250-290	–	–
	Low-alloy steel	Unhardened		280-440	220-370	190-300	220-370	–	–	150-170	120-140	100-120	290-400	240-330	210-300	–	–	320-360	260-310	–	–
		Tempered		190-300	140-250	110-190	140-250	–	–	–	–	–	210-270	160-230	140-190	–	–	160-200	120-160	–	–
	High-alloy steel	Annealed		210-460	160-380	120-300	160-380	–	–	150-170	110-130	90-110	290-420	240-340	210-300	–	–	300-340	230-280	–	–
	Tool steel			210-460	160-380	120-300	160-380	–	–	150-200	140-190	120-170	290-420	240-340	210-300	–	–	260-300	170-210	–	–
				100-230	80-170	60-110	80-170	–	–	110-170	100-140	80-110	120-210	100-150	80-110	–	–	90-120	70-100	–	–
M	Stainless steel	martensitic/ferritic		150-270	110-210	100-160	110-210	130-190	110-150	130-260	110-240	90-200	170-240	130-190	110-160	130-170	110-140	–	–	–	–
		austenitic		–	–	–	130-310	110-260	90-220	110-170	90-150	70-130	–	–	–	110-240	90-200	–	–	200-220	–
K	GG	Low tensile strength		210-500	180-440	–	–	–	–	–	–	–	260-450	230-400	–	–	–	450-530	430-480	–	–
		High tensile strength		130-270	110-240	–	–	–	–	–	–	–	170-250	150-220	–	–	–	230-280	160-210	–	–
	SGI	Ferritic		150-290	140-260	–	–	–	–	–	–	–	190-260	160-230	–	–	–	250-300	180-230	–	–
		Pearlitic		130-210	110-180	–	–	–	–	–	–	–	140-190	130-160	–	–	–	160-210	110-160	–	–
	Malleable iron	Short-chipping		230-330	200-300	–	–	–	–	–	–	–	250-300	230-270	–	–	–	230-280	200-250	–	–
		long-chipping		110-240	100-220	–	–	–	–	–	–	–	140-220	130-260	–	–	–	190-240	160-210	–	–
N	Wrought aluminium alloys	Non-hardenable		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1560-2880	1300-2400
		Hardenable		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	360-900	300-750
	Cast aluminium alloys	max. 12% Si, non-hardenable		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	360-960	300-800
		max. 12% Si, hardenable		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	240-600	200-500
	Copper and copper alloys (bronze/brass)	Free-machining alloy, Pb > 1%		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	320-720	270-600
		Brass, red bronze		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	300-480	250-400
		Bronze, lead-free copper, electrolytic copper		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	160-340	130-280
	Non-metallic materials	Thermosetting plastics, fibre-reinforced plastics		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	240-360	200-300
		Hard rubber		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	360-540	300-450
S	High-temperature-resistant alloy	Fe-based	Annealed	–	–	–	–	–	–	65-100	60-90	50-80	–	–	–	60-90	50-80	–	–	90-110	–
			Hardened	–	–	–	–	–	–	55-80	50-70	40-60	–	–	–	50-70	40-60	–	–	70-80	–
		Ni- or Co-based	Annealed	–	–	–	–	–	–	55-80	50-70	30-60	–	–	–	40-70	30-60	–	–	50-60	–
			Hardened	–	–	–	–	–	–	45-70	40-60	30-50	–	–	–	50-70	30-80	–	–	25-60	–
			Cast	–	–	–	–	–	–	35-60	30-50	20-40	–	–	–	30-50	20-40	–	–	25-50	–
	Titanium alloy	Pure titanium		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	160-220	–
		Alpha + beta alloys, hardened		–	–	–	–	–	–	–	40-70	–	–	–	–	40-60	–	–	–	60-100	–

HW

Coated carbide grades:

H 42 (HC - P30) Multi-layer coating, excellent toughness. Medium to coarse machining, also stainless steel, also higher cutting speeds.
H 45 (HC - P25) TiCN-coated. Carbon steel, stainless steel, alloy steel, tool steel.
H 60 (HC - P15) Ceramic Al-O-N multi-layer coating. Excellent resistance to wear and lime scale. Multi-range grade for general machining.

Uncoated carbide grades:

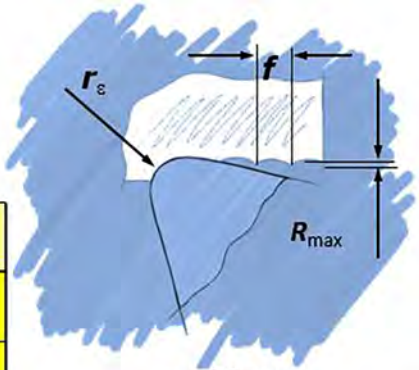
H 12 (HW - P25) Balanced ratio of wear resistance and toughness in the medium working range of steel machining.
H 20 (HW - K15) Good toughness and stability.
General machining of short-chipping cast iron materials, turning of non-ferrous metals (Al and Cu alloys) and plastics.
H25-ALU Very well suited for simple to medium machining of aluminium.

Cermet:

H 05 (HT - P10) For simple and finish-turning of steel and spheroidal cast iron at medium to high cutting speeds and feed rates. Low adhesion, therefore also well suited to machining stainless steel.

	P Unalloyed and alloyed steel and cast steel, stainless, ferritic steel and cast steel						**M** Stainless, austenitic steel and cast steel				**K** Grey, malleable, nodular graphite iron, non-ferrous metals, plastics			
DIN ISO 513	**P01**	**P10**	**P20**	**P30**	**P40**	**P50**	**M10**	**M20**	**M30**	**M40**	**K01**	**K10**	**K20**	**K30**
HC carbide coated			H 42					H 42					H 42	
			H 45									H 45		
HW carbide uncoated		H 12										H 20		
												H 25		
HT Cermet		H 05					H 05							

Surface quality



Theoretical R_a / R_z values as a function of feed and corner radius

Corner radius r_ε mm	Round plate D mm	R_a / R_z [µm] 0.4 / 1.6	1.6 / 6.3	3.2 / 12.5	6.3 / 25	8 / 32	32 / 100
		Feed f [mm]					
0.2		0.05	0.08	0.13			
0.4		0.07	0.11	0.17	0.22		
0.8		0.10	0.15	0.24	0.30	0.38	
1.2			0.19	0.29	0.37	0.47	
1.6				0.34	0.43	0.54	1.08
2.4				0.42	0.53	0.66	1.32
	6	0.20	0.31	0.49	0.62		
	8	0.23	0.36	0.56	0.72		
	10	0.25	0.40	0.63	0.80	1.00	
	12		0.44	0.69	0.88	1.10	
	16		0.51	0.80	1.01	1.26	2.54
	20			0.89	1.13	1.42	2.94
	25				1.26	1.58	3.33

Example: r = 0,8 mm
R_z = 4 µm
f = ?

$$f = \sqrt{\frac{R_{max} \cdot 8 \cdot r_\varepsilon}{1000}}$$

$$f = \sqrt{\frac{4 \cdot 8 \cdot 0{,}8}{1000}} = 0{,}16 \text{ mm}$$

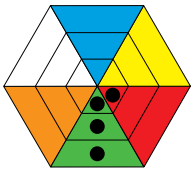
Grade description and chip deflection step overview

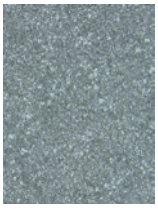
CUTTING SOLUTIONS BY CERATIZIT

CUTTING SOLUTIONS BY CERATIZIT PREMIUM PARTNER

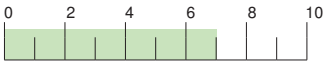
H10T

HW-K15

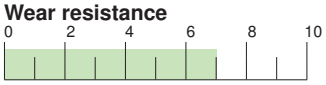




Ductility



Wear resistance

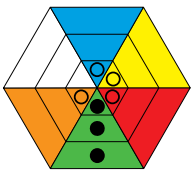


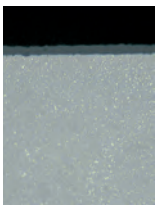
Properties/Application:

- Ideally suited to aluminium
- High wear resistance
- High heat resistance
- Low adhesion

AMZ

HC-K10





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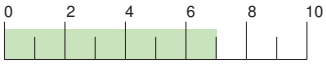
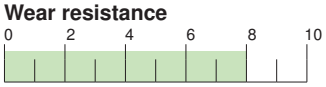


Wear resistance

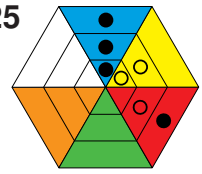


Properties/Application:

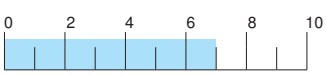
- Ideally suited to aluminium, cast iron
- Low adhesion

CTCP125

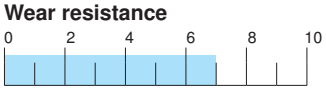
HC-P25
HC-M20
HC-K30



Ductility



Wear resistance

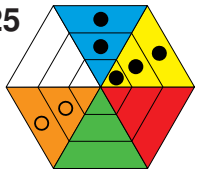


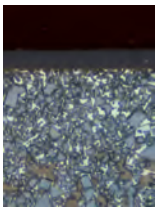
Properties/Application:

- Ideally suited to steel and cast materials
- High wear resistance
- High toughness

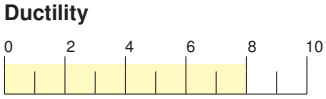
CTPM125

HC-P35
HC-M25

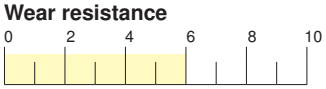




Ductility



Wear resistance

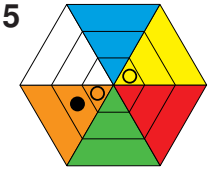


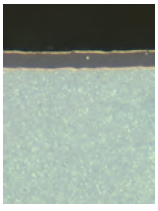
Properties/Application:

- Ideally suited to stainless steels and high-alloy materials
- High wear resistance
- High toughness

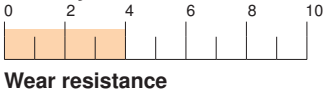
CTP5115

HC-M15
HC-S15

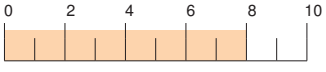




Ductility



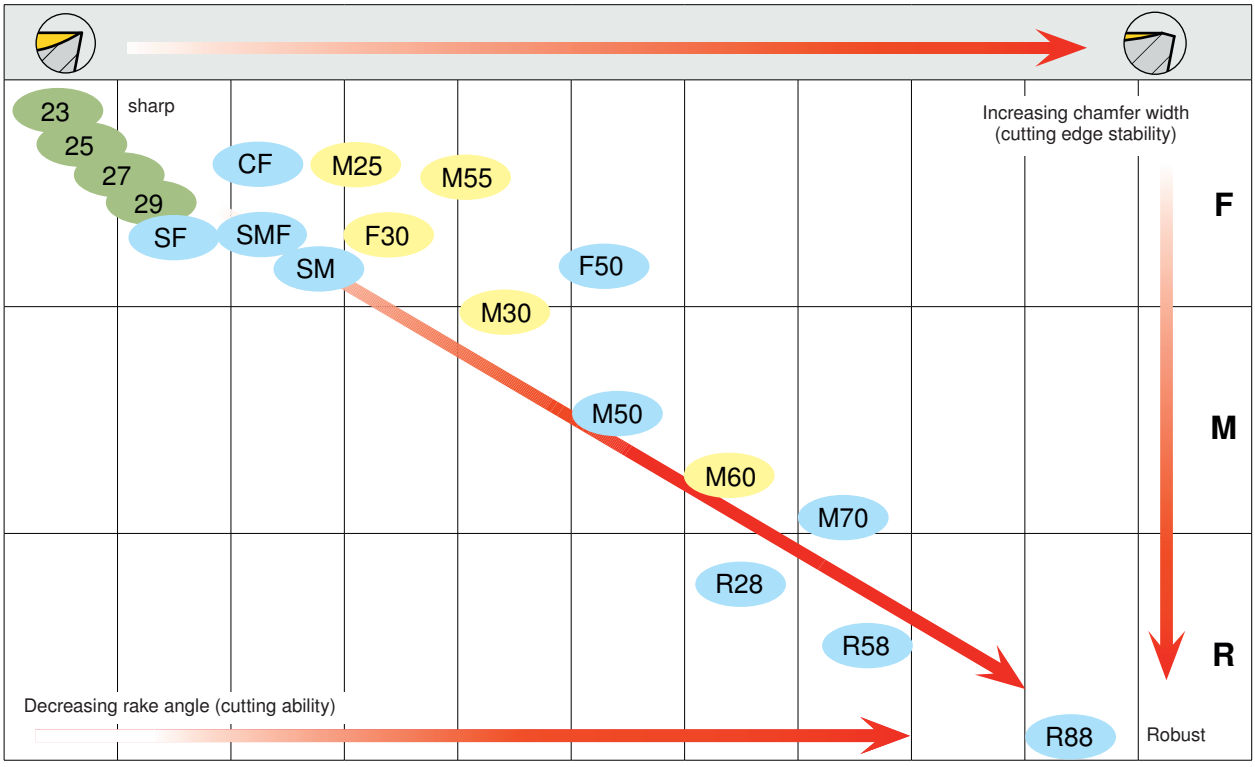
Wear resistance



Properties/Application:

- Ideally suited to titanium, titanium alloys, heat-resistant and highly heat-resistant steels
- Very high wear resistance

Chip deflection step overview, turning



18012 - 18016 Graver (incision miller)

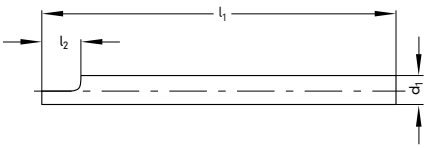
Design
With pre-sanded profile.
Applications
For machining tempered and chrome-nickel alloyed steels. For engraving letters and copy milling for contours, etc.

18012
Profile A
Quality
HSS-EW 9 Co 10 (10% cobalt).

18016
Profile D 60°
Quality
Cemented carbide K 10.

HSS-E 18012

HM K10 18016



Recommended cutting speeds in m/min.			
	Graver		Reference values for
Material	Steel	Cemented carbide K 10	the relief angle
Cast iron, steel casting	50–70	60–100	-
Steel up to 900 N/mm²	40–70	120–160	15°–25°
Steel over 900 N/mm²	-	50–70	-
Brass, aluminium	200–250	200–400	35°
Plastics (Astralon, Plexiglas, Resopal, etc.)	200–300	200–600	35°
Light metal, copper, gold, silver	200–250	200–400	30°

			HSS-E				HM-K10	
d_1 mm	l_1 mm	l_2 mm	18012	...	d_1 mm	l_1 mm	l_2 mm	18016	...
2.5	40	6		101	3	40	3		103
4	60	10		102	4	40	4		104
6	80	14		103	4	60	4		105
8	90	16		104	6	70	6		107
8	125	16		105	8	80	8		108
10	125	18		106					
12	125	18		107					

18020 High-performance lathe blanks DIN 4964

HSS-E

Design
Round. Fully hardened, face-ground on all sides. Ready for use immediately after the desired cutting-edge shape has been sanded.

Quality
HSS-1.3207
(EW 9 Co 10, cobalt 10%).

18020

	HSS-E			HSS-E			HSS-E	
Ø x l mm	18020	...	Ø x l mm	18020	...	Ø x l mm	18020	...
4 x 100		103	10 x 100		116	16 x 125		131
5 x 100		105	10 x 125		117	16 x 160		132
6 x 100		107	10 x 160		118	18 x 200		135
8 x 80		110	10 x 200		119	20 x 160		138
8 x 100		111	12 x 100		122	20 x 200		139
8 x 160		113	12 x 160		124			
10 x 80		115	14 x 125		127			

18023 High-performance lathe blanks DIN 4964 B

HSS-E

Design
Square. Fully hardened, face-ground on all sides. Ready for use immediately after the desired cutting-edge shape has been sanded.

Quality
HSS-1.3207
(EW 9 Co 10, cobalt 10%).

18023

w x h x l mm	HSS-E 18023 ...
4 x 4 x 80	102
5 x 5 x 63	103
5 x 5 x 100	105
6 x 6 x 63	106
6 x 6 x 80	107
6 x 6 x 100	108
6 x 6 x 160	110
8 x 8 x 63	111
8 x 8 x 80	112
8 x 8 x 100	113
8 x 8 x 160	115
8 x 8 x 200	116

w x h x l mm	HSS-E 18023 ...
10 x 10 x 63	117
10 x 10 x 80	118
10 x 10 x 100	119
10 x 10 x 125	120
10 x 10 x 160	121
10 x 10 x 200	122
12 x 12 x 80	124
12 x 12 x 100	125
12 x 12 x 125	126
12 x 12 x 160	127
12 x 12 x 200	128
14 x 14 x 125	129

w x h x l mm	HSS-E 18023 ...
14 x 14 x 200	131
16 x 16 x 100	132
16 x 16 x 125	133
16 x 16 x 160	134
16 x 16 x 200	135
20 x 20 x 125	137
20 x 20 x 160	138
20 x 20 x 200	139
25 x 25 x 160	140
25 x 25 x 200	141
25 x 25 x 250	142

18025 High-performance lathe blank DIN 4964 D

HSS-E

Design
Rectangular. Fully hardened, face-ground on all sides. Ready for use immediately after the desired cutting-edge shape has been sanded.

Quality
HSS-1.3207
(EW 9 Co 10, cobalt 10%).

18025

w x h x l mm	HSS-E 18025 ...
10 x 4 x 100	101
10 x 4 x 160	102
10 x 5 x 100	104
10 x 5 x 160	105
10 x 6 x 100	107
10 x 6 x 160	108
12 x 8 x 100	110
12 x 8 x 160	111

w x h x l mm	HSS-E 18025 ...
12 x 8 x 200	112
16 x 8 x 100	113
16 x 8 x 160	114
16 x 8 x 200	115
16 x 10 x 160	116
20 x 5 x 100	118
20 x 5 x 160	119
20 x 10 x 160	121

w x h x l mm	HSS-E 18025 ...
20 x 10 x 200	122
20 x 12 x 160	123
20 x 12 x 200	124
25 x 16 x 200	126
32 x 16 x 200	127
40 x 10 x 200	128

18102 Cutting-off tool holder

Design
With adjustable clamp for clamping the cutter on the side.
Applications
For tappings and for grooves in outside round slots for circlips.

Note:
Large AE for direct clamping of special cutters art. no. 18110 101-106.

18102 101-102

18102 103-105

Size	b x a x l_1 mm	d mm	18102 ...
A 00	11.0 x 16 x 100	12	101
A 0	11.0 x 18 x 125	14	102
A I/II a	14.5 x 22 x 170	20	103
A III a	18.0 x 27 x 210	25	104
AE	11.0 x 18 x 125	14	105

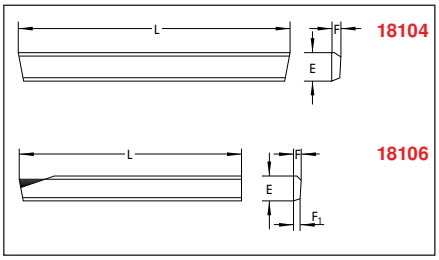
18104 - 18106 Cutting-off tools

18104
Quality
HSS, Quality class F (12% tungsten, 5% cobalt).

18106
Quality
With cemented carbide cutting plate P20.

18104

18106



E x F/F_1 x L Mm	For holder size	HSS/F 18104	...	Cemented carbide/P20 18106	...
8.0 x 2.2 x 75	A 00		101		
10.0 x 2.7 x 100	A 0		102		102
16.0 x 4/3 x 150	A I/II a		103		103
18.5 x 5/4 x 150	A III a		104		104

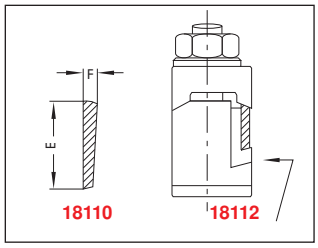
18110 - 18112 Recessing cutter and insert

18110
Recessing cutter
Applications
For circlip grooves, tolerance H11, for holder AI/IIa or AE (art. No. 18102 103 and/or 105).
Quality
HSS, Quality class F (12% tungsten, 5% cobalt).

18112
Insert

Note:
Cutters for circlip grooves A 0.9 to A 2.15 can be clamped directly in holder AE or, using this spacer piece, in holder AI/IIa. Cutters A 2.65 to A 5.15 can be mounted directly in holder AI/IIa.

18110 - 18112



Size	For ring width mm	F mm	E mm	Cutter length mm	HSS/F 18110	...	Insert 18112	...
A 0.9	0.80	0.90	11	80		101		101
A 1.1	1.00	1.10	11	80		102		
A 1.3	1.20	1.30	11	80		103		
A 1.6	1.50	1.60	11	80		104		
A 1.85	1.75	1.85	11	80		105		
A 2.15	2.00	2.15	11	80		106		
A 2.65	2.50	2.65	16	150		107		
A 3.15	3.00	3.15	16	150		108		
A 4.15	4.00	4.15	16	150		109		
A 5.15	5.00	5.15	16	150		110		

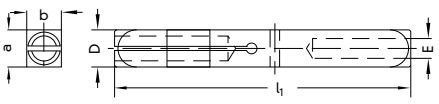
18202 Boring-tool holder

Applications
For clamping reboring shank cutters (art. no. 18209–18233). For bores from 3 mm.

18202 101
Applications
For steels: Size 01–05 standard and extended.

18202 102
Applications
For steels: Size 01–06 standard and extended. Size 01–05, shank diameter 10 mm.

18202



Size	a x b Mm	Mounting holes D + E mm	l_1 mm	Cutting edge height mm	18202	...
B 8	12 x 12	8	100	6.0		101
B 10	15 x 15	8 + 10	125	7.5		102

Lathe tools

18209 - 18210 Roughing reboring cutters

Design
Type g.
Applications
For through holes.
Quality
HSS, quality class H (11% tungsten, 10% cobalt).

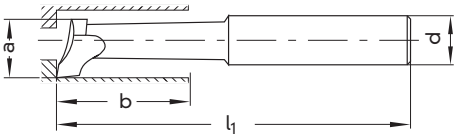
18209
Design
Standard.

18210
Design
Extended. **Total length l_1 = 125 mm.**

18209

18210

Size	a mm	l_1 mm	b mm	d mm	HSS/H 18209	...	long HSS/H 18210	...
01	3	60	20	8		101		
02	5	60	24	8		102		202
03	7	65	26	8		103		203
04	9	75	30	8		104		204
05	12	80	50	8		105		205
06	14	95	60	10		106		206



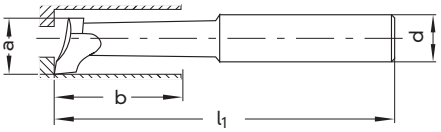
18215 - 18216 Angled reboring cutters

Design
Type f.
Applications
For blind holes.
Quality
HSS, quality class H (11% tungsten, 10% cobalt).

18215
Design
Standard.

18216
Design
Extended. **Total length l_1= 125 mm.**

18215 - 18216



Size	a mm	l_1 mm	b mm	d mm	HSS/H 18215	...	long HSS/H 18216	...
01	3	60	20	8		101		201
02	5	60	24	8		102		202
03	7	65	26	8		103		203
04	9	75	30	8		104		204
05	12	80	50	8		105		205
06	14	95	60	10		106		

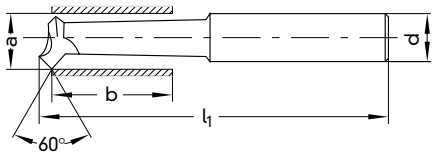
18221 - 18226 Female thread cutters

Quality
HSS, quality class H (11% tungsten, 10% cobalt).

18221
Design
Standard, for metric ISO thread 60°.

18226
Design
Standard, for Whitworth thread 55°.

18221 - 18226



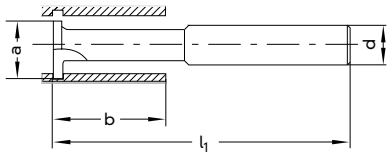
Size	a mm	l_1 mm	b mm	d mm	Pitch to mm	Pitch to TPI	60°/HSS/H 18221	...	55°/HSS/H 18226	...
01	3	60	20	8	1.0	-		101		
02	5	60	24	8	1.0	-		102		
03	7	65	26	8	1.5	16–50		103		203
04	9	75	30	8	1.5	16–50		104		204
05	12	80	50	8	2.0	12–40		105		205
06	14	95	60	10	3.0	8 - 30		106		206

18233 Internal recessing cutters

Design
Type h, standard, for groove width 1.1 mm.
Quality
HSS, quality class H (11% tungsten, 10% cobalt).

Note:
Standard recessing width 1.1 mm.

18233



Size	a mm	l_1 mm	b mm	d mm	HSS/H 18233	...
01	3	60	20	8		101
02	5	60	24	8		102
03	7	65	26	8		103
04	9	75	30	8		104
05	12	80	50	8		105
06	14	95	60	10		106

18247 Boring bars

Applications
For screwing on cutting heads
Art. no. 18301–18314. For holder art. no. 18246.

18247

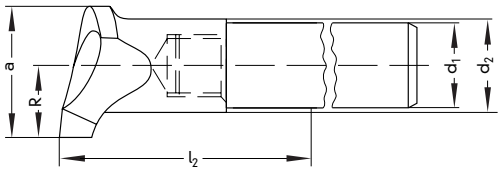
Size	For bores from mm	Cutting edge height mm	Boring bar Ø mm	Length mm	18247	...
B 1	16	10	10	180		101
B 1a	18	14	13	220		102
B 2	21	14	13	250		103
B 2a	24	20	20	275		104
B 2B	28	20	20	300		105
B 3	30	20	20	325		106

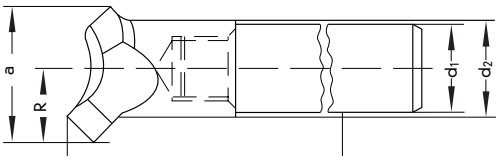
18301 - 18303 Reboring heads

Applications
For screwing onto boring bars art. no. 18247.
Quality
HSS, Quality class F (12% tungsten, 5% cobalt).

18301
Design
Type f, angled cutter for extracting blind holes and for turning and facing.

18303
Design
Type g, roughing cutter for extracting through-bores.





18301

18303

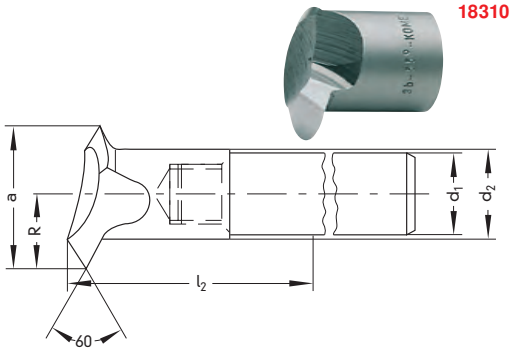
For boring bar	a for Ø mm from	l_2 mm	R mm	d_2 mm	d_1 boring bar mm	Type f/HSS/F 18301	...	Type g/HSS/F 18303	...
B 1	16	80	9.0	11.5	10		101		101
B 1a	18	85	10.3	13.5	13		102		102
B 2	21	115	12.0	16.0	13		103		103
B 2a	24	120	13.5	18.0	20		104		104
B 2B	28	140	15.5	20.2	20		105		
B 3	30	165	16.8	21.5	20		106		106

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18310 Female thread cutters

Design
For a metric ISO thread 60°.
Applications
For screwing onto boring bars art. no. 18247.
Quality
HSS, Quality class F (12% tungsten, 5% cobalt).

18310



60°/HSS/F

For boring bar	a bore From mm	l_2 mm	R mm	d_2 mm	d_1 boring bar mm	Thread pitch to mm	Thread pitch to TPI	18310	...
B 1	16	80	9.0	11.5	10	4	6.5		101
B 1a	18	85	10.3	12.5	13	5	5.0		102
B 2	21	115	12.0	15.0	13	6	4.0		103
B 2a	24	120	13.5	17.0	20	7	3.5		104
B 2B	28	140	15.5	20.2	20	8	3.0		105
B 3	30	165	16.8	21.5	20	9	2.5		106

18314 Female thread cutters

Design
For trapezoidal thread.
Applications
For screwing onto boring bars art. no. 18247.
Quality
HSS, Quality class F (12% tungsten, 5% cobalt).

18314

TR/HSS/F

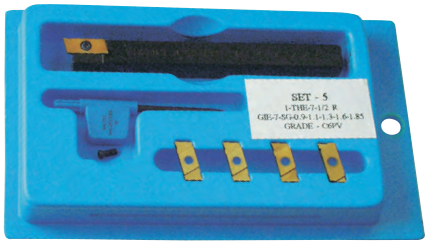
For boring bar	min. core Ø mm	Pitch mm	18314	...
B 1	16	3		101
B 1a	18	4		102
B 2	21	5		103
B 2a	24	6		104
B 3	30	8		106

18137 Grooving-tool assortment

18137 201
Design
With two cutting edges on each indexable insert for very small-scale grooving work.
Set contents:
1 holder, right, 12 x 12 x 120 mm, 1 grooving indexable insert 0.9/1.1/1.3/1.6/1.85 mm in each case. In case, incl. TX key T8.
Applications
For locking grooves.
Quality
Indexable inserts P 25 PVD/TiN-coated.

18137 501
Clamping screws for grooving-tool assortment (art. no. 18137 201), grooving-tool holder (art. no. 18130) and grooving boring bars (art. no. 18133).

18137 201



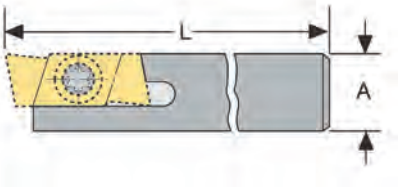
18137 501

Set contents	Size	TORX® Size		18137	...
7 pcs.	-	-	-		201
-	M 3 x 8	T 8	10 pcs.		501

18130 Grooving-tool external holder

Applications
For grooving indexable inserts art. no. 18138.

18130

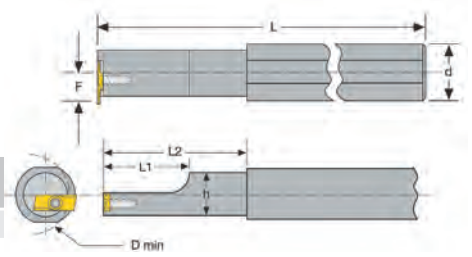


Holder designation	A mm	L mm	Right 18130	...
THE 1010	10	120		102
THE 1212	12	120		103
THE 1616	16	125		104

18133 Grooving boring bar, left

Applications
For grooving indexable inserts art. no. 18138.

18133

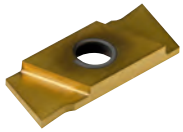


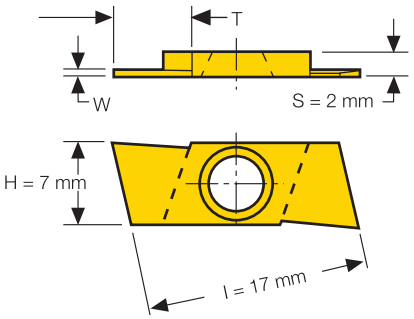
Holder designation	d mm	h mm	L mm	L_1 mm	L_2 mm	F mm	D min. mm	18133	...
THI-7-20	20	19.05	140	25	50	13.34	38.1		201

18138 Grooving indexable inserts

Applications
For locking grooves. Suitable for assortment art. no. 18137.
Quality
P 25 PVD/TiN-coated.

18138





W +0.02/0 mm	T mm		P 25/TiN 18138	...
0.50	2.54	10 pcs.		210
0.70	2.54	10 pcs.		211
0.80	2.54	10 pcs.		212
0.90	2.54	10 pcs.		213
1.10	6.00	10 pcs.		214
1.30	6.00	10 pcs.		215
1.60	6.00	10 pcs.		216
1.85	6.00	10 pcs.		217

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Dümmel WERKZEUGFABRIK

Design
Right cutting, **with internal coolant supply.**
Quality
Inserts HC8615/TiN-coated.

18320 101
Cutting-tool set mini-bore 1
Applications
For internal extraction, internal recess turning and chamfering. For internal machining from bore diameter 3mm.

18320 102
Cutting-tool set mini-bore 2
Applications
For internal recess turning. For internal machining From bore diameter 4mm.

18320 103
Cutting-tool set mini-bore 3
Applications
For internal extraction. For internal machining From bore diameter 3 mm.

18320 101

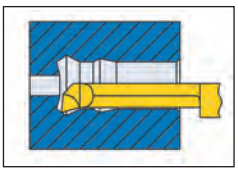
18320 102

18320 103

18320 101 mini-bore 1

Set contents	Designation	Bore Ø mm	Bore depth mm	Grooving depth mm	Grooving width mm	Fig.
1x clamp holder	676.0016-D	-	-	-	-	-
1x clamp holder	645.0016-D	-	-	-	-	-
1x T-handle wrench	111.645	-	-	-	-	-
1x cutting insert	R 050.6-22	6	22	-	-	A
1x cutting insert	R 050.5-20	5	20	-	-	A
1x cutting insert	R 060.5-20	5	20	-	-	F
1x cutting insert	R 050.4-16	4	16	-	-	A
1x cutting insert	R 050.3-16	3	16	-	-	A
1x cutting insert	R 006.0200-22	6	22	1.8	2.0	E
1x cutting insert	R 006.0150-22	6	22	1.8	1.5	E
1x cutting insert	R 005.0200-20	5	20	1.0	2.0	E
1x cutting insert	R 005.0150-20	5	20	1.0	1.5	E
1x cutting insert	R 004.0100-16	4	16	0.8	1.0	E

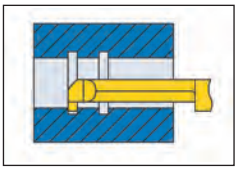
Fig. A



18320 102 mini-bore 2

Set contents	Designation	Bore Ø mm	Bore depth mm	Grooving depth mm	Grooving width mm	Fig.
1x clamp holder	676.0016-D	-	-	-	-	-
1x clamp holder	645.0016-D	-	-	-	-	-
1x T-handle wrench	111.645	-	-	-	-	-
1x cutting insert	R 006.0200-22	6	22	1.8	2.0	E
1x cutting insert	R 006.0150-22	6	22	1.8	1.5	E
1x cutting insert	R 005.0200-20	5	20	1.0	2.0	E
1x cutting insert	R 005.0150-20	5	20	1.0	1.5	E
1x cutting insert	R 004.0100-16	4	16	0.8	1.0	E

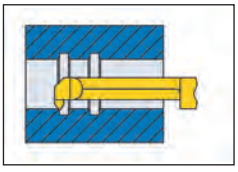
Fig. E



18320 103 mini-bore 3

Set contents	Designation	Bore Ø mm	Bore depth mm	Grooving depth mm	Grooving width mm	Fig.
1x clamp holder	676.0016-D	-	-	-	-	-
1x clamp holder	645.0016-D	-	-	-	-	-
1x T-handle wrench	111.645	-	-	-	-	-
1x cutting insert	R 050.6-22	6	22	-	-	A
1x cutting insert	R 050.5-20	5	20	-	-	A
1x cutting insert	R 050.4-16	4	16	-	-	A
1x cutting insert	R 050.3-16	3	16	-	-	A

Fig. F



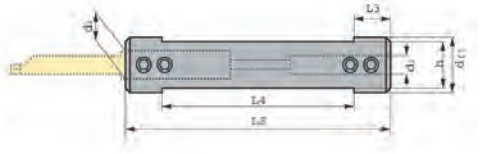
	18320 ...
mini-bore 1	101
mini-bore 2	102
mini-bore 3	103

18321 Clamp holder for system mini-bore

Dümmel WERKZEUGFABRIK

Design
Clamp holder with 2 clamping diameters. Internal coolant feed. Built-in depth stop for exact reproducibility.
Applications
For cutting inserts art. no.18322–18329.

18321



Model	For cutting insert Ø mm	Ødg6 mm	L_2 mm	L_3 mm	L_4 mm	h mm	18321	...
645.0012-D	4/5	12	75	10	55	10.3		101
645.0016-D	4/5	16	75	10	55	14.0		102
645.0020-D	4/5	20	90	10	70	18.0		103
676.0016-D	6/7	16	75	10	55	14.0		104
676.0020-D	6/7	20	90	10	70	18.0		105

18322 - 18325 Cutting inserts for system mini-bore

VHM TiN

Dümmel WERKZEUGFABRIK

Design
With straight shank and lateral clamping surface for holding in the clamp holder.
Applications
For internal extraction from bore diameter 0.6 mm.
Quality
Cemented-carbide ultra-fine grain HC8615/TiN-coated.

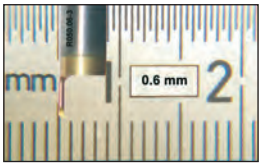
18322 101-120
Right cutting, for clamp holder 645.0012-D, 645.0016-D and 645.0020-D (art. no. 18321 101-103).

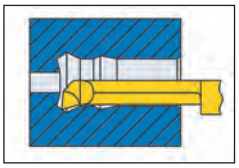
18323 101-120
Left cutting, for clamp holder 645.0012-D, 645.0016-D and 645.0020-D (art. no. 18321 101–103).

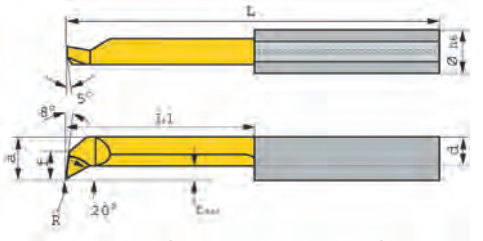
18324 101-111
Right cutting, for clamp holder 676.0016-D and 676.0020-D (art. no. 18321 104–105).

18325 101-111
Left cutting, for clamp holder 676.0016-D and 676.0020-D (art. no. 18321 104–105).

18322 - 18325







Model	Ø h6 mm	f mm	d mm	a mm	L mm	L_1 mm	t max. mm	D min. mm	R mm	Right 18322	...	Left 18323	...
R/L 050.06-2	4	-	0.4	0.5	20	2	0.08	0.6	0.04		101		101
R/L 050.06-3	4	-	0.4	0.5	20	3	0.08	0.6	0.04		102		102
R/L 050.15-5	4	-	1.15	1.3	19	5	0.1	1.5	0.05		103		103
R/L 050.15-10	4	-	1.15	1.3	24	10	0.1	1.5	0.05		104		104
R/L 050.2-5	4	-	1.5	1.7	19	5	0.1	2.0	0.05		105		105
R/L 050.2-10	4	-	1.5	1.7	24	10	0.1	2.0	0.05		106		106
R/L 050.2-15	4	-	1.5	1.7	29	15	0.1	2.0	0.05		107		107
R/L 050.3-10	4	0.6	2.3	2.6	24	10	0.2	2.8	0.1		108		108
R/L 050.3-16	4	0.6	2.3	2.6	30	16	0.2	2.8	0.1		109		109
R/L 050.3-20	4	0.6	2.3	2.6	34	20	0.2	2.8	0.1		110		110
R/L 050.4-10	4	1.5	3.0	3.5	24	10	0.3	4.0	0.1		111		111
R/L 050.4-16	4	1.5	3.0	3.5	30	16	0.3	4.0	0.1		112		112
R/L 050.4-20	4	1.5	3.0	3.5	34	20	0.3	4.0	0.1		113		113
R/L 050.4-24	4	1.5	3.0	3.5	38	24	0.3	4.0	0.1		114		114
R/L 050.5-10	5	1.9	3.8	4.4	25	10	0.5	5.0	0.15		116		116
R/L 050.5-20	5	1.9	3.8	4.4	35	20	0.5	5.0	0.15		118		118
R/L 050.5-30	5	1.9	3.8	4.4	45	30	0.5	5.0	0.15		120		120

Model	Ø h6 mm	f mm	d mm	a mm	L mm	L_1 mm	t max. mm	D min. mm	R mm	Right 18324	...	Left 18325	...
R/L 050.6-15	6	2.3	4.5	5.3	30	15	0.5	6.0	0.15		101		101
R/L 050.6-22	6	2.3	4.5	5.3	37	22	0.5	6.0	0.15		102		102
R/L 050.6-25	6	2.3	4.5	5.3	40	25	0.5	6.0	0.15		103		103
R/L 050.6-35	6	2.3	4.5	5.3	50	35	0.5	6.0	0.15		105		105
R/L 050.7-20	7	2.8	5.5	6.3	35	20	0.6	6.8	0.15		107		107
R/L 050.7-30	7	2.8	5.5	6.3	45	30	0.6	6.8	0.15		109		109
R/L 050.7-40	7	2.8	5.5	6.3	55	40	0.6	7.0	0.15		111		111

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VHM TiN

Dümmel WERKZEUGFABRIK

Version
With straight shank and lateral clamping surface for holding in the clamp holder.

Applications
For internal recessing from bore diameter 4 mm.

Quality
Cemented-carbide ultra-fine grain HC8615/TiN-coated.

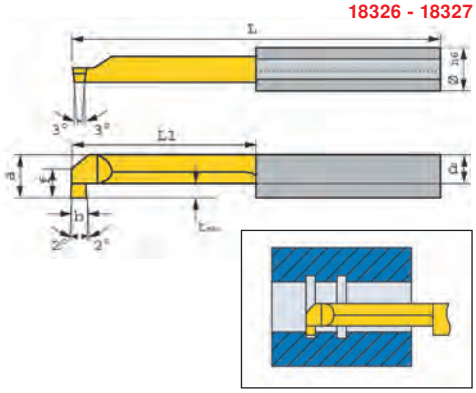
18326 101-119
Right cutting, for clamp holder 645.0012-D, 645.0016-D and 645.0020-D (art. no. 18321 101-103).

18327 101-119
Left cutting, for clamp holder 645.0012-D, 645.0016-D and 645.0020-D (art. no. 18321 101–103).

18326 127-159
Right cutting, for clamp holder 676.0016-D and 676.0020-D (art. no. 18321 104–105).

18327 127-159
Left cutting, for clamp holder 676.0016-D and 676.0020-D (art. no. 18321 104–105).

18326 - 18327



Model	Ø h6 mm	b + 0,05 mm	f mm	d mm	a mm	L mm	L_1 mm	t max. mm	D min. mm	Right 18326 ...	Left 18327 ...
R/L 004.0100-10	4	1.0	1.5	2.4	3.5	24	10	0.8	4.0	101	101
R/L 004.0100-16	4	1.0	1.5	2.4	3.5	30	16	0.8	4.0	102	102
R/L 004.0100-20	4	1.0	1.5	2.4	3.5	34	20	0.8	4.0	103	103
R/L 005.0150-10	5	1.5	1.9	3.3	4.4	25	10	1.0	5.0	110	110
R/L 005.0150-20	5	1.5	1.9	3.3	4.4	35	20	1.0	5.0	112	112
R/L 005.0150-30	5	1.5	1.9	3.3	4.4	45	30	1.0	5.0	114	114
R/L 005.0200-10	5	2.0	1.9	3.3	4.4	25	10	1.0	5.0	115	115
R/L 005.0200-20	5	2.0	1.9	3.3	4.4	35	20	1.0	5.0	117	117
R/L 005.0200-30	5	2.0	1.9	3.3	4.4	45	30	1.0	5.0	119	119
R/L 006.0150-10	6	1.5	2.3	3.4	5.3	25	10	1.8	6.0	127	127
R/L 006.0150-22	6	1.5	2.3	3.4	5.3	37	22	1.8	6.0	129	129
R/L 006.0150-30	6	1.5	2.3	3.4	5.3	45	30	1.8	6.0	131	131
R/L 006.0200-10	6	2.0	2.3	3.4	5.3	25	10	1.8	6.0	133	133
R/L 006.0200-22	6	2.0	2.3	3.4	5.3	37	22	1.8	6.0	135	135
R/L 006.0200-25	6	2.0	2.3	3.4	5.3	40	25	1.8	6.0	136	136
R/L 007.0100-15	7	1.0	2.8	3.8	6.3	30	15	2.5	6.8	139	139
R/L 007.0100-25	7	1.0	2.8	3.8	6.3	40	25	2.5	6.8	141	141
R/L 007.0100-40	7	1.0	2.8	3.8	6.3	55	40	2.5	7.0	144	144
R/L 007.0100-50	7	1.0	2.8	3.8	6.3	65	50	2.5	7.0	146	146
R/L 007.0150-15	7	1.5	2.8	3.8	6.3	30	15	2.5	6.8	148	148
R/L 007.0150-25	7	1.5	2.8	3.8	6.3	40	25	2.5	6.8	150	150
R/L 007.0150-40	7	1.5	2.8	3.8	6.3	55	40	2.5	7.0	153	153
R/L 007.0200-15	7	2.0	2.8	3.8	6.3	30	15	2.5	6.8	155	155
R/L 007.0200-25	7	2.0	2.8	3.8	6.3	40	25	2.5	6.8	157	157
R/L 007.0200-35	7	2.0	2.8	3.8	6.3	50	35	2.5	7.0	159	159

18335 - 18337 Clamp holders for system MINI-CUT

Dümmel WERKZEUGFABRIK

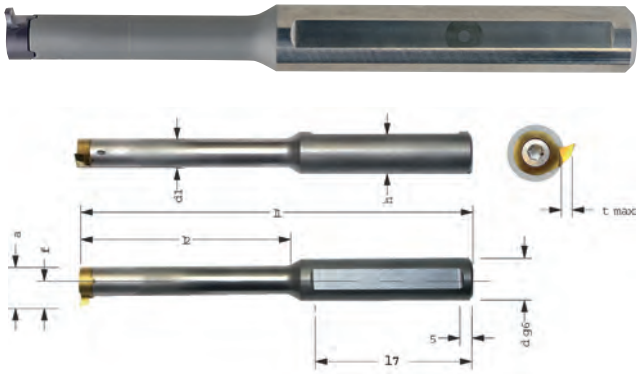
18335
Cemented-carbide clamp holder

18336
Steel clamp holder

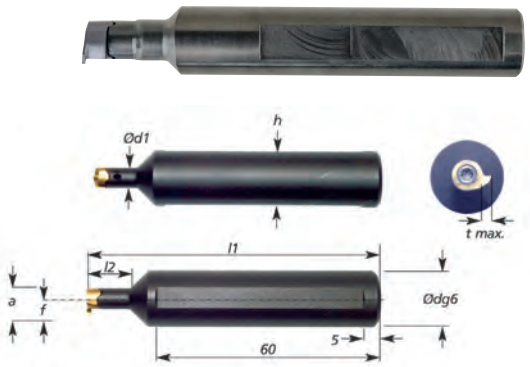
Version
With internal cooling.

Applications
For recess turning, extracting and thread cutting (internal) from diameter 7.8 mm.

18335



18336



Cemented-carbide clamp holder

Designation	Ø dg6 mm	l2 mm	l1 mm	l7 mm	d1 mm	f mm	a mm	h mm	For cutting plate	t max. mm	d min. mm	clamping screw	18335 ...
608.0012.1 HM	12	21	80	48	6	4.8	7.8	11.0	R/LS08	1.0	8	M 2.6-MC	101
608.0012.2 cemented carbide	12	30	90	48	6	4.8	7.8	11.0	R/LS08	1.0	8	M 2.6-MC	102
608.0012.3 cemented carbide	12	42	100	48	6	4.8	7.8	11.0	R/LS08	1.0	8	M 2.6-MC	103
608.0012.4 HM	12	50	115	48	6	4.8	7.8	11.0	R/LS08	1.0	8	M 2.6-MC	104
611.0012.1 HM	12	29	95	60	8	6.7	10.7	10.5	R/LS11	2.3	11	M 3.5-MC	105
611.0012.2 cemented carbide	12	42	110	60	8	6.7	10.7	10.5	R/LS11	2.3	11	M 3.5-MC	106
611.0012.3 cemented carbide	12	56	120	60	8	6.7	10.7	10.5	R/LS11	2.3	11	M 3.5-MC	107
611.0012.4 cemented carbide	12	64	130	60	8	6.7	10.7	10.5	R/LS11	2.3	11	M 3.5-MC	108
614.0012.1 cemented carbide	12	34	100	609.5 x 11		9.0	13.8	10.5	R/LS14	4.0/6.5	14/17	M 4-MC	109
614.0012.2 cemented carbide	12	45	110	609.5 x 11		9.0	13.8	10.5	R/LS14	4.0/6.5	14/17	M 4-MC	110
614.0012.3 cemented carbide	12	64	130	609.5 x 11		9.0	13.8	10.5	R/LS14	4.0/6.5	14/17	M 4-MC	111
614.0016.1 cemented carbide	16	34	100	609.5 x 11		9.0	13.8	14.5	R/LS14	4.0/6.5	14/17	M 4-MC	112
614.0016.2 cemented carbide	16	45	110	609.5 x 11		9.0	13.8	14.5	R/LS14	4.0/6.5	14/17	M 4-MC	113
614.0016.3 cemented carbide	16	64	130	609.5 x 11		9.0	13.8	14.5	R/LS14	4.0/6.5	14/17	M 4-MC	114
614.0016.4 cemented carbide	16	75	145	609.5 x 11		9.0	13.8	14.5	R/LS14	4.0/6.5	14/17	M 4-MC	115
616.0012.1 cemented carbide	12	40	130	60	11	10.2	15.7	10.5	R/LS16	4.3	16	M 5-MC	116
616.0012.2 cemented carbide	12	56	130	60	11	10.2	15.7	10.5	R/LS16	4.3	16	M 5-MC	117
616.0012.3 cemented carbide	12	80	150	60	11	10.2	15.7	10.5	R/LS16	4.3	16	M 5-MC	118
616.0016.1 cemented carbide	16	40	130	60	11	10.2	15.7	14.5	R/LS16	4.3	16	M 5-MC	119
616.0016.2 cemented carbide	16	56	130	60	11	10.2	15.7	14.5	R/LS16	4.3	16	M 5-MC	120
616.0016.3 cemented carbide	16	80	150	60	11	10.2	15.7	14.5	R/LS16	4.3	16	M 5-MC	121

Steel clamp holder, short

Designation	Ø dg6 mm	l2 mm	l1 mm	d1 mm	f mm	a mm	h mm	For cutting plate	t max. mm	d min. mm	Clamping screw	18336 ...
608.0016.1 ST	16	12	80	6	4.8	7.8	15.0	R/LS08	1.0	8	M 2.6-MC	101
611.0016.2 ST	16	16	97	8	6.7	10.7	14.5	R/LS11	2.3	11	M 3.5-MC	102
614.0016.3 ST	16	18	100	9.5 x 11	9.0	13.8	14.5	R/LS14	4.0/6.5	14/17	M 4-MC	103
616.0016.3 ST	16	22	100	11	10.2	15.7	14.5	R/LS16	4.3	16	M 5-MC	104

Steel clamp holder, long

Designation	Ø dg6 mm	l2 mm	l1 mm	d1 mm	f mm	a mm	h mm	For cutting plate	t max. mm	d min. mm	Clamping screw	18336 ...
608.0016.1E.ST	16	22	90	6 x 7	4.8	7.8	15.0	R/LS08	1.0	8	M 2.6-MC	201
611.0016.2E.ST	16	29	110	8 x 9.5	6.7	10.7	14.5	R/LS11	2.3	11	M 3.5-MC	202
614.0016.3E.ST	16	38	120	9.5 x 11	9.0	13.8	14.5	R/LS14	4.0/6.5	14/17	M 4-MC	203
616.0016.3E.ST	16	42	120	11 x 13.5	10.2	15.7	14.5	R/LS16	4.3	16	M 5-MC	204

18337 101-104

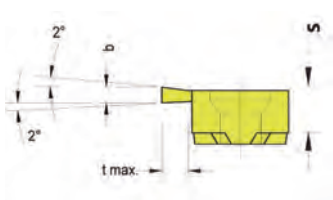
Clamping screws

Designation	18337 ...
M 2.6-MC	101
M 3.5-MC	102
M 4-MC	103
M 5-MC	104

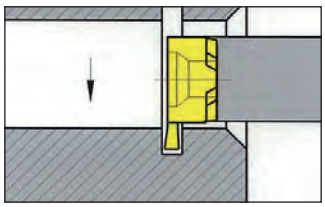
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Dümmel WERKZEUGFABRIK

- **For circlip grooves**
- Cemented carbide/HC8620 TiAIN-coated



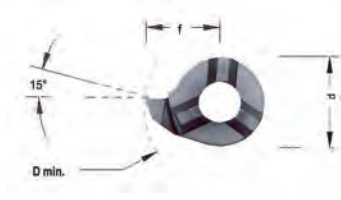
18340

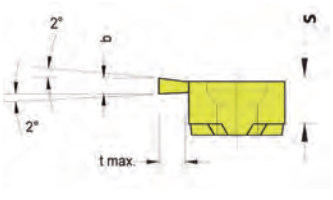


Designation	D min. mm	t max. mm	b + 0.03 mm	d mm	f mm	s mm	For clamp holder type	Right 18340 ...	Left 18340 ...
R/LS008.0070	8	1.0	0.73	6	4.8	3.3	608	101	201
R/LS008.0080	8	1.0	0.83	6	4.8	3.3	608	102	202
R/LS008.0090	8	1.0	0.93	6	4.8	3.3	608	103	203
R/LS008.0110	8	1.0	1.20	6	4.8	3.3	608	104	204
R/LS008.0130	8	1.0	1.40	6	4.8	3.3	608	105	205
R/LS008.0160	8	1.0	1.70	6	4.8	3.3	608	106	206
R/LS011.0070	11	1.2	0.73	8	6.7	4.2	611	107	207
R/LS011.0080	11	1.3	0.83	8	6.7	4.2	611	108	208
R/LS011.0090	11	1.5	0.93	8	6.7	4.2	611	109	209
R/LS011.0110	11	2.3	1.20	8	6.7	4.2	611	110	210
R/LS011.0130	11	2.3	1.40	8	6.7	4.2	611	111	211
R/LS011.0160	11	2.3	1.70	8	6.7	4.2	611	112	212
R/LS014.0070	14	1.2	0.73	9	9.0	5.3	614	113	213
R/LS014.0080	14	1.3	0.83	9	9.0	5.3	614	114	214
R/LS014.0090	14	1.5	0.93	9	9.0	5.3	614	115	215
R/LS014.0110	14	4.0	1.20	9	9.0	5.3	614	116	216
R/LS014.0130	14	4.0	1.40	9	9.0	5.3	614	117	217
R/LS014.0160	14	4.0	1.70	9	9.0	5.3	614	118	218
R/LS016.0070	16	1.2	0.73	11	10.2	5.4	616	119	219
R/LS016.0080	16	1.3	0.83	11	10.2	5.4	616	120	220
R/LS016.0090	16	1.5	0.93	11	10.2	5.4	616	121	221
R/LS016.0110	16	4.3	1.20	11	10.2	5.4	616	122	222
R/LS016.0130	16	4.3	1.40	11	10.2	5.4	616	123	223
R/LS016.0160	16	4.3	1.70	11	10.2	5.4	616	124	224

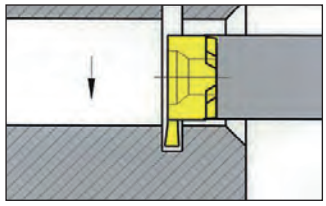
Dümmel WERKZEUGFABRIK

- Recess turning **general**
- Cemented carbide/HC8620 TiAIN-coated





18341



Designation	D min. mm	t max. mm	b + 0.03 mm	d mm	f mm	s mm	For clamp holder type	Right 18341 ...	Left 18341 ...
R/LS008.0100	8	1.0	1.0	6	4.8	3.3	608	101	201
R/LS008.0150	8	1.0	1.5	6	4.8	3.3	608	102	202
R/LS008.0200	8	1.0	2.0	6	4.8	3.3	608	103	203
R/LS011.0100	11	2.3	1.0	8	6.7	4.2	611	104	204
R/LS011.0150	11	2.3	1.5	8	6.7	4.2	611	105	205
R/LS011.0200	11	2.3	2.0	8	6.7	4.2	611	106	206
R/LS011.0250	11	2.3	2.5	8	6.7	4.2	611	107	207
R/LS011.0300	11	2.3	3.0	8	6.7	4.2	611	108	208
R/LS014.0150	14	4.0	1.5	9	9.0	5.3	614	109	209
R/LS014.0200	14	4.0	2.0	9	9.0	5.3	614	110	210
R/LS014.0250	14	4.0	2.5	9	9.0	5.3	614	111	211
R/LS014.0300	14	4.0	3.0	9	9.0	5.3	614	112	212
R/LS016.0150	16	4.3	1.5	11	10.2	5.4	616	113	213
R/LS016.0200	16	4.3	2.0	11	10.2	5.4	616	114	214
R/LS016.0250	16	4.3	2.5	11	10.2	5.4	616	115	215
R/LS016.0300	16	4.3	3.0	11	10.2	5.4	616	116	216
R/LS016.0350	16	4.3	3.5	11	10.2	5.4	616	117	217
R/LS016.0400	16	4.3	4.0	11	10.2	5.4	616	118	218

Continued

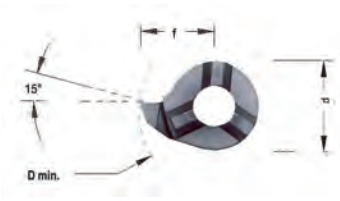
18340 - 18352 Cemented-carbide cutting plates for system MINI-CUT

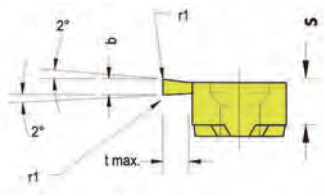
VHM TiAIN

Continued

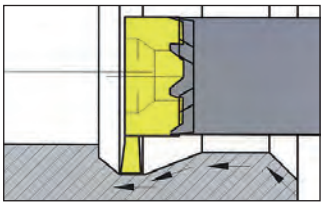
Dümmel WERKZEUGFABRIK

Finishing inserts
- Maximum cutting depth = 0.02 mm
- Cemented carbide/HC8620 TiAlN-coated





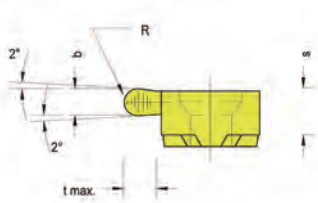
18342



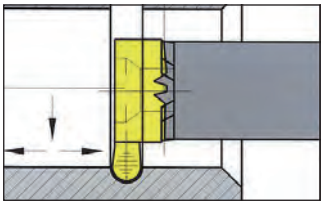
Designation	D min. mm	t max. mm	b + 0.05 mm	d mm	f mm	s mm	For clamp holder type	Right 18342 ...	Left 18342 ...
R/LS08.150.02	8	1.0	1.5	6	4.8	3.3	608	101	201
R/LS08.200.02	8	1.0	2.0	6	4.8	3.3	608	102	202
R/LS11.150.02	11	2.3	1.5	8	6.7	4.2	611	103	203
R/LS11.200.02	11	2.3	2.0	8	6.7	4.2	611	104	204
R/LS14.150.02	14	4.0	1.5	9	9.0	5.3	614	105	205
R/LS14.200.02	14	4.0	2.0	9	9.0	5.3	614	106	206
R/LS16.200.02	16	4.3	2.0	11	10.2	5.4	616	107	207

Dümmel WERKZEUGFABRIK

- full radius
- Cemented carbide/HC8620 TiAlN-coated



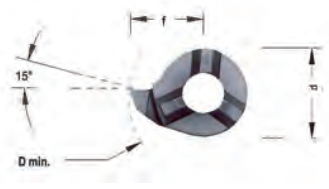
18343

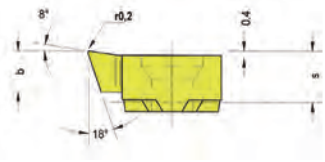


Designation	D min. mm	t max. mm	b + 0.05 mm	d mm	f mm	s mm	For clamp holder type	Right 18343 ...	Left 18343 ...
R/LS08.008R04	8	1.0	0.8	6	4.8	3.3	608	101	201
R/LS08.012R06	8	1.0	1.2	6	4.8	3.3	608	102	202
R/LS08.018R09	8	1.0	1.8	6	4.8	3.3	608	103	203
R/LS11.008R04	11	2.3	0.8	8	6.7	4.2	611	104	204
R/LS11.012R06	11	2.3	1.2	8	6.7	4.2	611	105	205
R/LS11.018R09	11	2.3	1.8	8	6.7	4.2	611	106	206
R/LS11.020R10	11	2.3	2.0	8	6.7	4.2	611	107	207
R/LS11.030R15	11	2.3	3.0	8	6.7	4.2	611	108	208
R/LS14.012R06	14	4.0	1.2	9	9.0	5.3	614	109	209
R/LS14.018R09	14	4.0	1.8	9	9.0	5.3	614	110	210
R/LS14.020R10	14	4.0	2.0	9	9.0	5.3	614	111	211
R/LS14.022R11	14	4.0	2.2	9	9.0	5.3	614	112	212
R/LS14.030R15	14	4.0	3.0	9	9.0	5.3	614	113	213
R/LS16.018R09	16	4.3	1.8	11	10.2	5.4	616	114	214
R/LS16.022R11	16	4.3	2.2	11	10.2	5.4	616	115	215
R/LS16.030R15	16	4.3	3.0	11	10.2	5.4	616	116	216
R/LS16.040R20	16	4.3	4.0	11	10.2	5.4	616	117	217

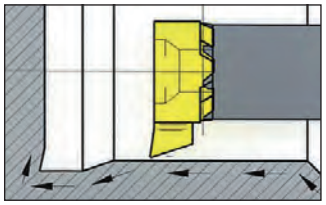
Dümmel WERKZEUGFABRIK

copy plates
- Ap max = maximum cutting depth
- Cemented carbide/HC8620 TiAlN-coated





18344



Designation	D min. mm	Ap max. mm	b mm	d mm	f mm	s mm	For clamp holder type	Right 18344 ...	Left 18344 ...
R/LS08.1846.02	7.8	0.6	3.3	6	4.65	3.5	608	101	201
R/LS11.1855.02	9.8	1.0	3.9	8	5.50	4.2	611	102	202
R/LS11.1867.02	11.0	1.0	3.9	8	6.70	4.2	611	103	203
R/LS14.1867.02	13.8	1.5	5.0	9	8.70	5.3	614	104	204
R/LS16.1897.02	15.5	1.5	5.0	11	9.70	5.4	614	105	205

Continued

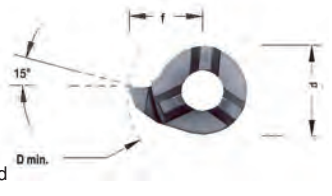
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

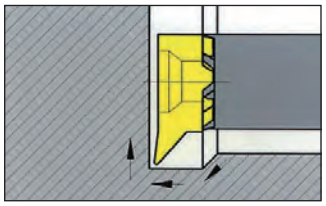
Continued

Dümmel WERKZEUGFABRIK

Relief grooving inserts
- Extraction, internal relief grooves (DIN 509)
- Ap max = maximum cutting depth
- Angle W1 = 47°
- Cemented carbide/HC8620 TiAlN-coated

18345



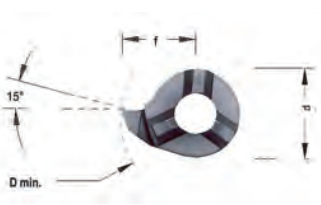


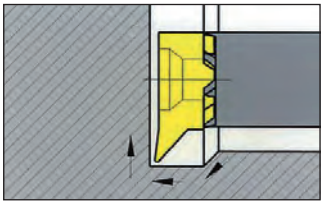
Designation	D min. mm	t max. mm	Ap max. mm	d mm	f mm	s mm	For clamp holder type	Right 18345 ...	Left 18345 ...
R/LS08.4746.02	7.8	1.2	0.4	6	4.65	3.5	608	101	201
R/LS11.4767.02	11.0	2.3	0.6	8	6.70	4.2	611	102	202
R/LS14.4787.02	13.7	3.0	0.8	9	8.70	5.3	614	103	203

Dümmel WERKZEUGFABRIK

Copy swivel plates
- Angle W1 = 30°
- Cemented carbide/HC8620 TiAlN-coated

18346



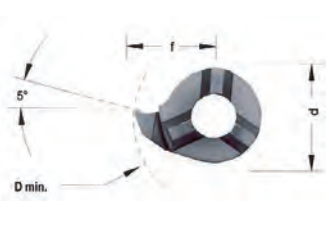


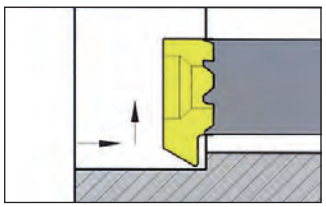
Designation	D min. mm	t max. mm	Ap max. mm	d mm	f mm	s mm	For clamp holder type	Right 18346 ...	Left 18346 ...
R/LS08.2555.02	7.8	1.2	0.4	6	4.65	3.5	608	101	201
R/LS11.2755.02	11.0	2.3	0.6	8	6.70	4.2	611	102	202
R/LS14.3555.02	13.7	4.0	0.8	9	8.70	5.3	614	103	203
R/LS16.4055.02	15.8	4.3	0.8	11	10.20	5.4	616	104	204

Dümmel WERKZEUGFABRIK

Reverse swivel plates
- Ap max = maximum cutting depth
- Angle W2 = 30°
- Cemented carbide/HC8620 TiAlN-coated

18347



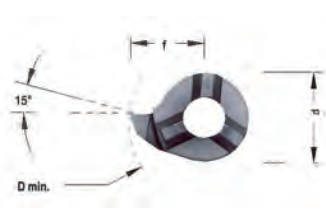


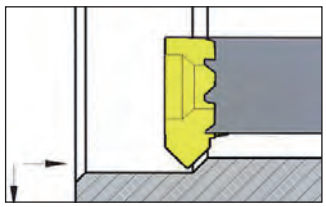
Designation	D min. mm	t max. mm	Ap max. mm	s1 mm	d mm	f mm	s mm	For clamp holder type	Right 18347 ...	Left 18347 ...
R/LS08.3046.02	7.8	1.3	0.6	1.0	6	4.65	3.5	608	101	201
R/LS11.3067.02	11.0	2.3	1.0	1.6	8	6.70	4.3	611	102	202
R/LS14.3087.02	13.8	3.5	1.5	2.4	9	8.70	5.4	614	103	203

Dümmel WERKZEUGFABRIK

Chamfer swivel plates
- Chamfering and extracting
- Ap max = maximum cutting depth
- Cemented carbide/HC8620 TiAlN-coated

18348



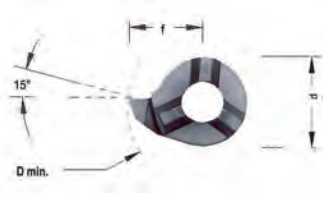


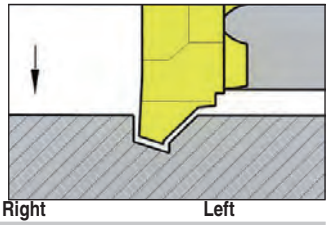
Designation	D min. mm	t max. mm	Ap max. mm	e mm	d mm	f mm	s mm	For clamp holder type	Right 18348 ...	Left 18348 ...
R/LS08.4545.02	8	1.4	0.6	1.8	6	4.8	3.5	608	101	201
R/LS11.4545.02	11	1.5	1.0	2.2	8	6.7	4.3	611	102	202
R/LS14.4545.02	14	1.5	1.2	2.8	9	9.0	5.4	614	103	203

Dümmel WERKZEUGFABRIK

Pre-cutting plates
- Pre-cutting and chamfering
- t = 0.2 mm
- Cemented carbide/HC8620 TiAlN-coated

18349





Designation	D min. mm	t max. mm	b mm	d mm	f mm	s mm	For clamp holder type	Right 18349 ...	Left 18349 ...
R/LS08.0810.45	8	1.0	1.0	6.0	4.8	3.3	608	101	201
R/LS11.0810.45	11	1.5	1.0	8.0	6.7	4.2	611	102	202
R/LS14.0815.45	14	1.5	1.0	9.0	9.0	5.3	614	103	203
R/LS16.0815.45	16	1.5	1.0	11.0	10.2	5.4	616	104	204

Continued

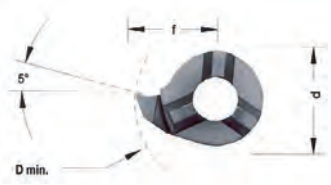
18340 - 18352 Cemented-carbide cutting plates for system MINI-CUT

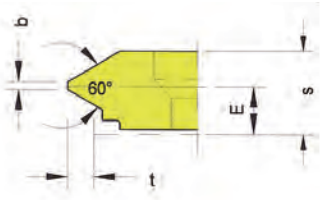
VHM TiAIN

Continued

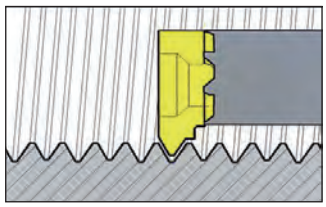
Dümmel WERKZEUGFABRIK

Thread-cutting inserts 60°
- Standard thread partial profile
- t = 0.2 mm
- Cemented carbide/HC8620 TiAIN-coated





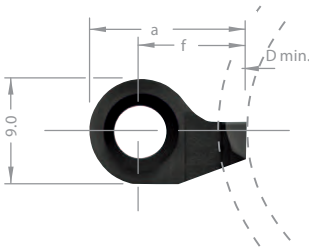
18350

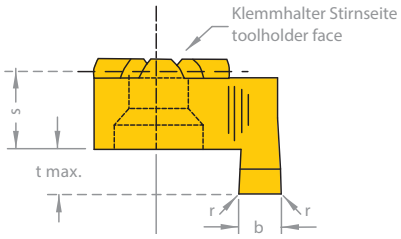


Designation	D min. mm	pitch mm	t mm	e mm	b mm	f mm	s mm	d mm	For clamp holder type	Right 18350	...	Left 18350	...
R/LS08.0815.01	8	1.5/1.75	0.95	2.25	0.18	4.8	3.5	6	608		101		201
R/LS11.1020.01	11	2.0/2.5	1.08	3.00	0.25	6.7	4.3	8	611		102		202
R/LS11.1325.01	11	2.5/3.0	1.35	3.00	0.31	6.7	4.3	8	611		103		203
R/LS14.1020.01	14	2.0/2.5	1.08	3.90	0.25	9.0	5.4	9	614		104		204
R/LS14.1325.01	14	2.5/3.0	1.35	3.65	0.31	9.0	5.4	9	614		105		205
R/LS16.1325.01	16	2.5/3.0	1.35	3.70	0.31	10.2	5.5	11	616		106		206

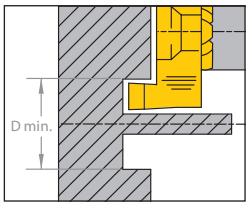
Dümmel WERKZEUGFABRIK

Axial grooving inserts
- Axial grooving past the pin
- Cemented carbide/HC8620 TiAIN-coated





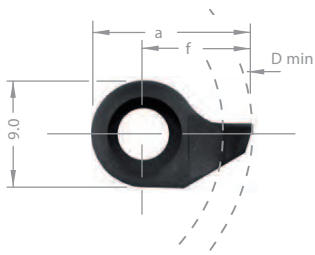
18351

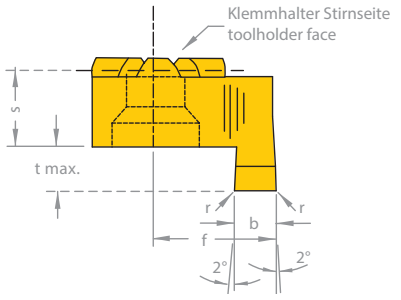


Designation	D min. mm	t max. mm	b + 0.03 mm	a mm	r mm	f mm	s mm	For clamp holder type	Right 18351	...	Left 18351	...
R/LS014.1210.00	12	1.5	1.0	11.5	-	7.0	8.3	614		101		201
R/LS014.1215.02	12	2.5	1.5	12.0	0.2	7.5	8.3	614		102		202
R/LS014.1220.02	12	3.0	2.0	12.5	0.2	8.0	8.3	614		103		203
R/LS014.1225.02	12	3.0	2.5	13.0	0.2	8.5	8.3	614		104		204
R/LS014.1230.02	12	3.0	3.0	13.5	0.2	9.0	8.3	614		105		205
R/LS014.1220.52	12	5.0	2.0	12.5	0.2	8.0	10.3	614		106		206
R/LS014.1225.52	12	5.0	2.5	13.0	0.2	8.5	10.3	614		107		207
R/LS014.1230.52	12	5.0	3.0	13.5	0.2	9.0	11.3	614		108		208

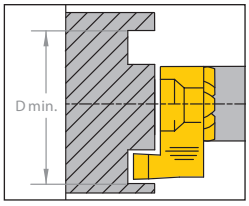
Dümmel WERKZEUGFABRIK

Axial grooving inserts
- Axial grooving
- Cemented carbide/HC8620 TiAIN-coated





18352



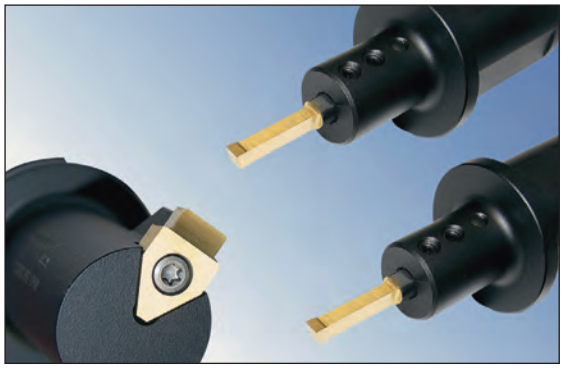
Designation	D min. mm	t max. mm	b + 0.03 mm	a mm	r mm	f mm	s mm	For clamp holder type	Right 18352	...	Left 18352	...
R/LS014.1410.00	14	1.5	1.0	13.5	-	9	8.3	614		101		201
R/LS014.1415.02	14	2.5	1.5	13.5	0.2	9	8.3	614		102		202
R/LS014.1420.02	14	3.0	2.0	13.5	0.2	9	8.3	614		103		203
R/LS014.1425.02	14	3.0	2.5	13.5	0.2	9	8.3	614		104		204
R/LS014.1430.02	14	3.0	3.0	13.5	0.2	9	8.3	614		105		205
R/LS014.1420.52	14	5.0	2.0	13.5	0.2	9	10.3	614		106		206
R/LS014.1425.52	14	5.0	2.5	13.5	0.2	9	10.3	614		107		207
R/LS014.1430.52	14	5.0	3.0	13.5	0.2	9	10.3	614		108		208

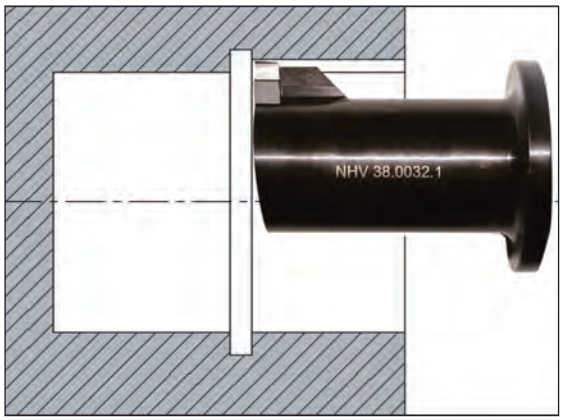
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Broaching with a system

Dümmel WERKZEUGFABRIK

The tool system for broaching offers, for many sectors, a cost-effective and simple solution that can be used on practically any CNC lathe, milling machine and machining centre. Almost all standard grooves can be made on the lathe itself. Complex, and hence usually valuable, workpcs. or semi-finished products are often involved in one of the first operations on a lathe. The workpiece is rough and finish-turned. As a catch or anti-rotation device, grooves now have be introduced in the longitudinal direction. This tool system is now able to make longitudinal grooves to DIN 138 and DIN 6885 on CNC lathes and cut costs.



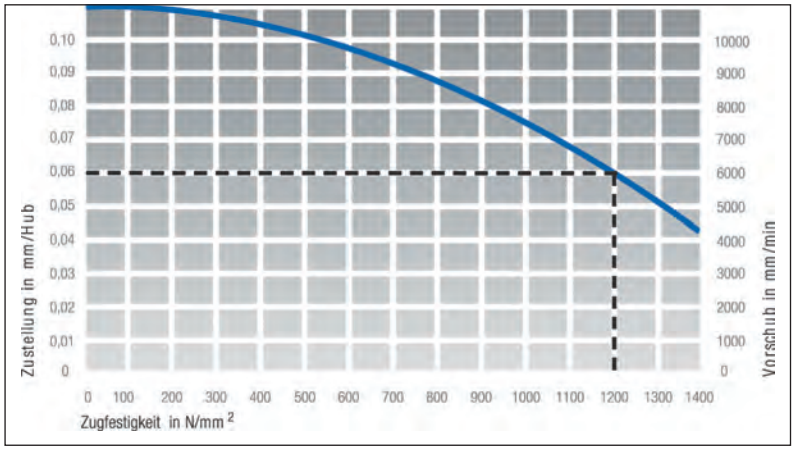


Note:

- Make sure there is a relief groove at the end of the broached groove to allow the tool to exit freely.
- As the tool is retracting, the cutting edge should not touch the base of the groove.
- Adjusting the tool is essential. Check the diameter of the workpiece carefully before moving the first insert.
- If you use oil or an emulsion, the chips from the workpiece will be flushed away and you achieve a perfect surface.
- If you align the tool upwards, the chips will automatically drop down and away from the cutting edge.
- Avoid an interrupted cut.

Reference values for broaching

Example: - Heat-treated steel, e.g. 42CrMo4 with 1200 N/mm²
- Feed per stroke 0.05 - 0.06 mm
- Feed 5500 mm/min.



18360 Sets for broaching longitudinal grooves

Dümmel WERKZEUGFABRIK

Design
- Light seat for cutting inserts and cutting plates in accordance with DIN 6885
- Tolerance class JS9

Applications
- Broaching on CNC lathes, milling machines and machining centres
- Broaching longitudinal grooves in accordance with DIN 6885

Quality
Cutting material HC 8620 TiAlN-coated.

18360 101

18360 102

18360 103

18360 101 NPU

Set contents	Designation	For groove width mm
1x clamp holder	NHU.0025.1	-
1x cutting insert	NPU.0200.01.1	2
1x cutting insert	NPU.0300.01.1	3
1x cutting insert	NPU.0400.01.1	4
1x hexagon socket wrench	-	-

18360 102 NP10

Set contents	Designation	For groove width mm
1x clamp holder	NH10.0025.1	-
1x cutting insert	NP10.400.02.3	4
1x cutting insert	NP10.500.02.3	5
1x hexagon socket wrench	-	-

18360 103 NPV

Set contents	Designation	For groove width mm
1x clamp holder	NHV.22.0025.1	-
1x cutting plate	NPV.0501.02	5
1x cutting plate	NPV.0601.02	6
1x cutting plate	NPV.0801.02	8
1x TORX® key	TX 15	-

Set	Bore Ø from mm	Contents	18360	...
NPU	6	5 pcs.		101
NP10	10	4 pcs.		102
NPV	22	5 pcs.		103

18361 Clamp holder for broaching

Dümmel WERKZEUGFABRIK

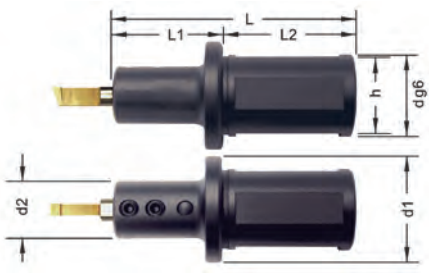
Design
- Broaching on CNC lathes, milling machines and machining centres
- Broaching longitudinal grooves in accordance with DIN 138 and DIN 6885

18631 101-102
Clamp holder NHU
Design
Bore diameter from 6 mm.

18631 201-202
Clamp holder NH10
Design
Bore diameter from 10 mm.

18631 301-305
Clamp holder NHV
Design
Bore diameter from 22 mm.

18361 101-202



Type NHU

Designation	Ø dg6 mm	d1 mm	d2 mm	L mm	L1 mm	L2 mm	h mm	18361	...
NHU.0025.1	25	33	18	73	33	40	23		101
NHU.0032.1	32	40	20	73	33	40	30		102

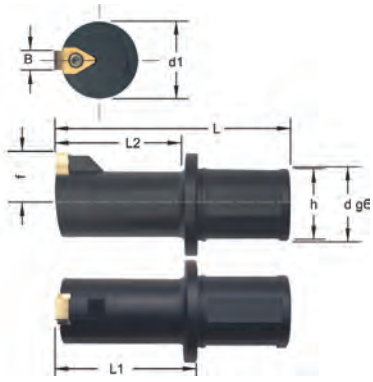
Type NH10

Designation	Ø dg6 mm	d1 mm	d2 mm	L mm	L1 mm	L2 mm	h mm	18361	...
NH10.0025.1	25	33	20	73	33	40	23		201
NH10.0032.1	32	40	20	73	33	40	30		202

Type NHV

Designation	D min. mm	Ø dg6 mm	d1 mm	f mm	L mm	L1 mm	L2 mm	h mm	18361	...
NHV.22.0025.1	22	25	33	12.0	100	60	50	23		301
NHV.30.0032.1	30	32	45	16.5	100	60	50	30		302
NHV.38.0032.1	38	32	45	22.0	100	60	50	30		303
NHV.30.0032.2	30	32	45	16.5	125	85	75	30		304
NHV.38.0032.2	32	32	45	22.0	125	85	75	30		305

18361 301-305



18362 Cutting and chamfering inserts for broaching

Dümmel WERKZEUGFABRIK

Design
Type NPU bore diameter from 6 mm.
Applications
Broaching longitudinal grooves in accordance with DIN 138 and DIN 6885.
Quality
Cutting material HC 8620 TiAlN-coated.

18362 101-105
Design
Type NPU Standard DIN 138.

18362 201-206
Design
Type NPU light seat DIN 6885.

18362 301-305
Design
Type NPU firm seat DIN 6885.

18362 401
Design
NPU 45°/chamfers.

18362 101-305

18362 401

Groove dimensions to DIN

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	H mm	r mm	f mm	L mm	For use from Ø mm	For holder	18362 mm	...
NPU.0210.03.1	6	2	0.9	C11	2.1	5.5	0.35	2.0	38	6	NHU		101
NPU.0310.03.1	10	3	1.5	C11	3.1	6.2	0.35	2.7	38	7	NHU		102
NPU.0310.05.1	13	3	1.6	C11	3.1	6.2	0.50	2.7	38	7	NHU		103
NPU.0410.05.1	16	4	1.7	C11	4.1	6.2	0.50	2.7	40	7	NHU		104
NPU.0410.05.2	16	4	1.7	C11	4.1	6.2	0.50	2.7	50	7	NHU		105

Groove dimensions to DIN

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	H mm	r mm	f mm	L mm	L1 mm	For use from Ø mm	For holder	18362 mm	...
NPU.0200.01.1	> 6–8	2	1.0	JS9	2	5.5	0.1	2.0	38	12.5	6	NHU		201
NPU.0300.01.1	> 8–10	3	1.4	JS9	3	6.2	0.1	2.7	38	12.5	7	NHU		202
NPU.0400.01.1	> 10–12	4	1.8	JS9	4	6.2	0.1	2.7	40	15.0	7	NHU		203
NPU.0400.02.1	> 10–12	4	1.8	JS9	4	6.2	0.2	2.7	40	15.0	7	NHU		204
NPU.0400.02.2	> 10–12	4	1.8	JS9	4	6.2	0.2	2.7	50	25.0	7	NHU		205
NPU.0500.02.2	> 12–17	5	2.3	JS9	5	5.8	0.2	2.3	50	25.0	7	NHU		206

Groove dimensions to DIN

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	H mm	r mm	f mm	L mm	L1 mm	For use from Ø mm	For holder	18362 mm	...
NPU.0198.01.1	> 6–8	2	1.0	P9	1.98	5.5	0.1	2.0	38	12.5	6	NHU		301
NPU.0298.01.1	> 8–10	3	1.4	P9	2.98	6.2	0.1	2.7	38	12.5	7	NHU		302
NPU.0398.01.1	> 10–12	4	1.8	P9	3.98	6.2	0.1	2.7	40	15.0	7	NHU		303
NPU.0398.02.2	> 10–12	4	1.8	P9	3.98	6.2	0.2	2.7	50	25.0	7	NHU		304
NPU.0498.02.2	> 12–17	5	2.3	P9	4.98	5.8	0.2	2.3	50	25.0	7	NHU		305

Designation	B1 mm	B mm	L mm	L1 mm	Groove width mm	for holder	18362	...
NPU.4545.1	3.6	6.5	50	25	4/5	NHU		401

18363 Cutting inserts for broaching

Dümmel WERKZEUGFABRIK

Version
Type NP 10 bore diameter from 10 mm.
Applications
Cutting inserts for longitudinal grooves according to DIN 138 and DIN 6885.
Quality
Cutting material HC 8620 TiAlN-coated.

18363 101-104
Design
Type NP10 Standard DIN 138.

18363 201-204
Design
Type NP10 light seat DIN 6885.

18363

Groove dimensions to DIN (* without DIN)

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	H mm	r mm	f mm	L mm	L1 mm	For use from Ø mm	For holder	18363	...
NP10.410.05.2	16	4	1.7	C11	4.1	9	0.5	4	50	25	10	NH10		101
NP10.410.05.3	16	4	1.7	C11	4.1	9	0.5	4	66	41	10	NH10		102
NP10.510.05.2*	10	-	-	-	5.1	9	0.5	4	50	25	10	NH10		103
NP10.510.05.3*	10	-	-	-	5.1	9	0.5	4	66	41	10	NH10		104

Groove dimensions to DIN

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	H mm	r mm	f mm	L mm	L1 mm	For use from Ø mm	For holder	18363	...
NP10.400.02.2	> 10.0 - 12.0	4	1.8	JS9	4	9	0.2	4	50	25	10	NH10		201
NP10.400.02.3	> 10,0 - 12.0	4	1.8	JS9	4	9	0.2	4	66	41	10	NH10		202
NP10.500.02.2	> 12.0 - 17.0	5	2.3	JS9	5	9	0.2	4	50	25	10	NH10		203
NP10.500.02.3	> 12.0 - 17.0	5	2.3	JS9	5	9	0.2	4	66	41	10	NH10		204

Continued

18363 Cutting inserts for broaching

Dümmel WERKZEUGFABRIK

Design
Type NP 10 bore diameter from 10 mm.
Applications
Cutting inserts for longitudinal grooves according to DIN 138 and DIN 6885.
Quality
Cutting material HC 8620 TiAlN-coated.

18363 301-304
Design
Type NP10 firm seat DIN 6885.

18363

Groove dimensions to DIN

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	H mm	r mm	f mm	L mm	L1 mm	For use from Ø mm	For holder	18363	...
NP10.398.02.2	> 10.0 - 12.0	4	1.8	P9	3.98	9	0.2	4	50	25	10	NH10		**301**
NP10.398.02.3	> 10.0 - 12.0	4	1.8	P9	3.98	9	0.2	4	66	41	10	NH10		**302**
NP10.498.02.2	> 12.0 - 17.0	5	2.3	P9	4.98	9	0.2	4	50	25	10	NH10		**303**
NP10.498.02.3	> 12.0 - 17.0	5	2.3	P9	4.98	9	0.2	4	66	41	10	NH10		**304**

18364 Cutting and chamfering plates for grooving

Dümmel WERKZEUGFABRIK

Version
Type NPV bore diameter from 22 mm.
Applications
Broaching longitudinal grooves in accordance with DIN 138 and DIN 6885.
Quality
Cutting material HC 8620 TiAlN-coated.

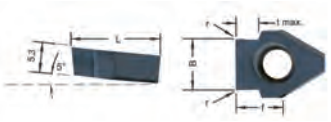
18364 101-107
Design
Type NPV standard DIN 138.

18364 201-206
Design
Type NPV light seat DIN 6885.

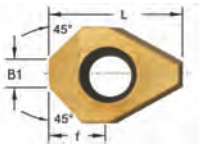
18364 301-305
Design
Type NPV tightness DIN 6885.

18364 401-402
Design
Type NPV 45°/chamfers.

18364 101-305



18364 401-402



Groove dimensions to DIN

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	r mm	f mm	L mm	t max. mm	For use from Ø mm	For holder	18364	...
NVP.0612.085	22	6	2.1	C11	6.12	0.85	8.0	17.3	2.6	22	NHV 22		**101**
NVP.0713.085	27	7	2.8	C11	7.13	0.85	8.0	17.3	3.3	22	NHV 22		**102**
NVP.0813.105	32	8	2.8	C11	8.13	1.05	8.0	17.3	3.4	22	NHV 22/NHV 30		**103**
NVP.1013.105	40	10	3.5	C11	10.13	1.05	10.9	20.1	4.2	40	NHV 38		**104**
NVP.1215.135	50	12	3.6	C11	12.15	1.35	10.9	20.1	5.1	40	NHV 38		**105**
NVP.1215.175	70	16	5.0	C11	12.15	1.75	10.9	20.1	6.6	40	NHV 38		**106**
NVP.1215.225	100	24	7.0	C11	12.15	2.25	10.9	20.1	8.5	40	NHV 38		**107**

Groove dimensions to DIN

Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	r mm	f mm	L mm	t max. mm	For use from Ø mm	For holder	18364	...
NPV.0501.02	22	5	2.3	JS9	5.01	0.2	8.0	17.3	2.7	22	NHV 22		**201**
NPV.0601.02	22	6	2.8	JS9	6.01	0.2	8.0	17.3	3.4	22	NHV 22		**202**
NPV.0801.02	> 22–30	8	3.3	JS9	8.01	0.2	8.0	17.3	4.1	22	NHV 22/NHV 30		**203**
NPV.1001.03	> 30–38	10	3.3	JS9	10.01	0.3	8.0	17.3	4.2	30	NHV 30		**204**
NPV.1202.03	> 38–44	12	3.3	JS9	12.02	0.3	10.9	20.1	5.7	40	NHV 38		**205**
NPV.1202.05	> 65–75	20	4.9	JS9	12.02	0.3	10.9	20.1	8.5	40	NHV 38		**206**

Groove dimensions to DIN

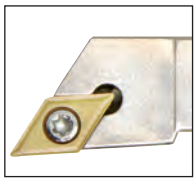
Designation	Ø mm	Width mm	Depth mm	Tolerance	B mm	r mm	f mm	L mm	T max. mm	For use from Ø mm	For holder	18364	...
NPV.0498.02	22	5	2.3	P9	4.98	0.2	8.0	17.3	2.7	22	NHV 22		**301**
NPV.0598.02	22	6	2.8	P9	5.98	0.2	8.0	17.3	3.4	22	NHV 22		**302**
NPV.0798.02	> 22 - 30	8	3.3	P9	7.98	0.2	8.0	17.3	4.1	22	NHV 22/NHV 30		**303**
NPV.0998.03	> 30–38	10	3.3	P9	9.98	0.3	8.0	17.3	4.2	30	NHV 30		**304**
NPV.1197.03	> 38–44	12	3.3	P9	11.98	0.3	10.9	20.1	5.7	40	NHV 38		**305**

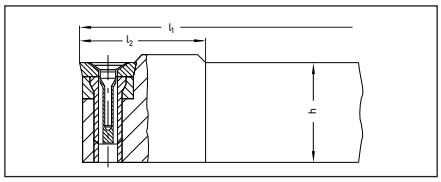
Designation	B1 mm	B mm	L mm	Groove width mm	For holder	18364	...
NPV.3045.1	3.5	8.0	17.3	6 / 7 / 8	NHV 22		**401**
NPV.6045.1	6.0	10.9	20.2	10	NHV 38		**402**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info — Clamp holder system S

Clamp holder for indexable inserts
with centre bore.
Mounted with central screw.

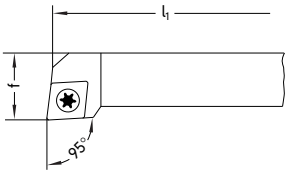




18405 - 18406 Clamp holder SCLCR/L

Design
Angle of attack 95°.

Applications
For indexable insert CC.



18405

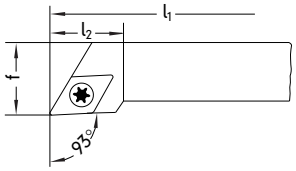
ISO designation	l_1 mm	f mm	For indexable inserts	Right 18405	...	Left 18406	...
SCLCR/L 1010 E06	70	12	CC.. 0602..		102		102
SCLCR/L 1212 F09-T3	80	16	CC.. 09T3..		103		103
SCLCR/L 1616 H09-T3	100	20	CC.. 09T3..		104		104
SCLCR/L 2020 K09-T3	125	20	CC.. 09T3..		105		105
SCLCR/L 1616 H12	100	20	CC.. 1204..		106		106
SCLCR/L 2020 K12	125	25	CC.. 1204..		107		107
SCLCR/L 2525 M12	150	32	CC.. 1204..		108		108

Spare parts		Clamping screw		Wrench		Support plate		Insert nut		Key	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18472	...	51809	...
6 mm	8		723		403						
9 mm	15		724		406		712		720		107
12 mm	15		722		406		741		723		109

18407 - 18410 Clamp holder SDJCR/L

Design
Angle of attack 93°.

Applications
For indexable insert DC..



18407

ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18407	...	Left 18410	...
SDJCR/L 1010 E07	70	17	12	DC.. 0702..		102		102
SDJCR/L 1212 F11	80	29	16	DC.. 11T3..		103		103
SDJCR/L 1616 H11	100	29	20	DC.. 11T3..		104		104
SDJCR/L 2020 K11	125	29	25	DC.. 11T3..		105		105
SDJCR/L 2525 M11	150	33	32	DC.. 11T3..		106		106

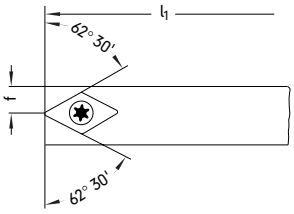
Spare parts		Clamping screw		Wrench		Support plate		Insert nut		Key	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18472	...	51809	...
7 mm	8		723		403						
11 mm	15		724		406		713		720		108

Clamp holders

18411 Clamp holder SDNCN

Design
Angle of attack 62° 30'.

Applications
For indexable insert DC..



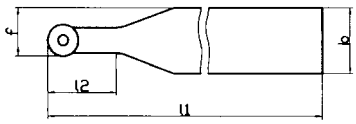
18411

ISO designation	l_1 mm	f mm	For indexable inserts	Neutral 18411 ...
SDNCN 1010 E07	70	5.0	DC.. 0702..	102
SDNCN 1212 F11	80	6.0	DC.. 11T3..	103
SDNCN 1616 H11	100	8.0	DC.. 11T3..	104
SDNCN 2020 K11	125	10.0	DC.. 11T3..	105
SDNCN 2525 M11	150	12.5	DC.. 11T3..	106

Spare parts		Clamping screw 10	Wrench	Support plate	Insert nut	Key
Plate size	TORX® size T	18470 ...	52529 ...	18471 ...	18472 ...	51809 ...
7 mm	8		723	403		
11 mm	15		724	406	713	720 107

18400 Clamp holder SRDCN

Applications
For indexable insert RC.



18400

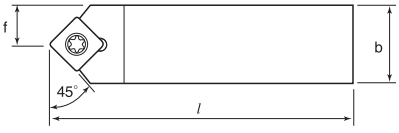
ISO designation	b mm	l_1 mm	l_2 mm	f mm	For indexable inserts	Neutral 18400 ...
SRDCN 1010 E06	10	70	10	8.0	RC.. 0602..	098
SRDCN 1212 F06	12	80	12	9.0	RC.. 0602..	099
SRDCN 1616 H06	16	100	12	11.0	RC.. 0602..	100
SRDCN 1010 E08	10	70	12	9.0	RC.. 0803..	101
SRDCN 1616 H08	16	100	16	12.0	RC.. 0803..	103

Spare parts		Clamping screw 10	Wrench
Plate size	TORX® size T	18470 ...	52529 ...
6 mm	8	723	403
8 mm	8	721	403

18402 Clamp holder SSDCN

Design
Angle of attack 45°.

Applications
For indexable insert SCM..



18402

ISO designation	b mm	l mm	f mm	For indexable inserts	Neutral 18402 ...
SSDCN 1212 F09	12	80	6.0	SCM. 09T3..	098
SSDCN 1616 H09	16	100	8.0	SCM. 09T3..	099
SSDCN 2020 K09	20	125	10.0	SCM. 09T3..	100
SSDCN 1616 H12	16	100	8.0	SCM. 1204..	101
SSDCN 2020 K12	20	125	10.0	SCM. 1204..	102
SSDCN 2525 M12	25	150	12.5	SCM. 1204..	103

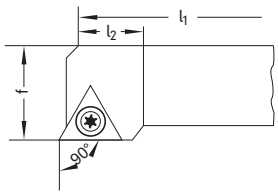
Spare parts		Clamping screw 10	Wrench	Support plate	Insert nut	Key
Plate size	TORX® size T	18470 ...	52529 ...	18471 ...	18472 ...	51809 ...
9 mm	15		738	406		
12 mm	15		722	406	716	723 109

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18416 - 18417 Clamp holder STGCR/L

Design
Angle of attack 90°.

Applications
For indexable insert TC..



18416

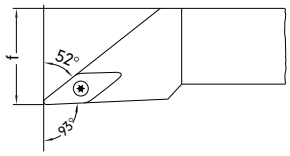
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18416	...	Left 18417	...
STGCR/L 1616 H11	100	16	20	TC.. 1102..		100		100
STGCR/L 1616 H16	100	20	20	TC.. 16T3..		101		101
STGCR/L 2020 K16	125	20	25	TC.. 16T3..		102		102
STGCR/L 2525 M16	150	20	32	TC.. 16T3..		103		103

Spare parts		Clamping screw 10		Wrench		Support plate		Insert nut		Key	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18472	...	51809	...
11 mm	8		723		403						
16 mm	15		724		406		721		720		107

18420 - 18421 Clamp holder SVJBR/L

Design
Angle of attack 93°.

Applications
For indexable insert VB..



18420

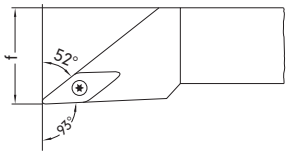
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18420	...	Left 18421	...
SVJBR K16/L 2020	125	36	25	VB. 1604..		102		102
SVJBR M16/L 2525	150	36	32	VB. 1604..		103		103

Spare parts		Clamping screw 10		Wrench		Support plate		Insert nut		Key	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18472	...	51809	...
16 mm	15		724		406		733		720		107

18418 - 18419 Clamp holder SVJCR/L

Design
Angle of attack 93°.

Applications
For indexable insert VC..



18418

ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18418	...	Left 18419	...
SVJCR/L 1212 F11	80	23	16	VC. 1103..		102		102
SVJCR/L 1616 H11	100	23	20	VC. 1103..		103		103
SVJCR/L 2020 K11	125	23	25	VC. 1103..		104		104
SVJCR/L 1616 H16	100	34	20	VC. 1604..		107		107
SVJCR/L 2020 K16	125	34	25	VC. 1604..		108		108
SVJCR/L 2525 M16	150	35	32	VC. 1604..		109		109

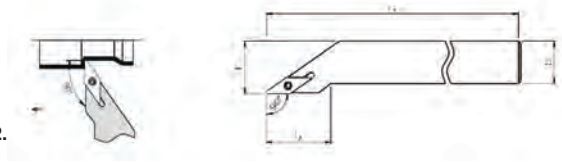
Spare parts		Clamping screw 10		Wrench		Support plate		Insert nut		Key	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18472	...	51809	...
11 mm	8		723		403						
16 mm	15		737		406		719		719		106

18413 Mini clamp holder SVGCR/L

ATORN®

Design
Angle of attack 90°.

Applications
For indexable inserts VC. 0702.



18413

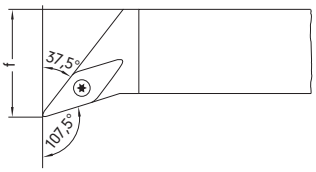
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18413 ...	Left 18413 ...
SVGCR/L 0808 K07	125	15	8.5	VCMT/VCGT 0702..	101	111
SVGCR/L 1010 M07	150	15	10.5	VCMT/VCGT 0702..	102	112
SVGCR/L 1212 M07	150	18	12.5	VCMT/VCGT 0702..	103	113

18424 - 18425 Clamp holder SVHCR/L

HW

Design
Angle of attack 107.5°.

Applications
For indexable insert VC..



18424

ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18424 ...	Left 18425 ...
SVHCR/L 2020 K16	125	27	25	VC. 1604..	201	201
SVHCR/L 2525 M16	150	27	32	VC. 1604..	202	202

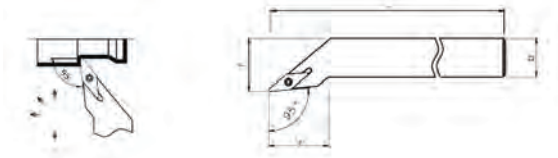
Spare parts		Clamping screw 10	Wrench	Support plate	Insert nut	Key
Plate size	TORX® size T	18470 ...	52529 ...	18471 ...	18472 ...	51809 ...
16 mm	15	724	406	733	720	107

18405 - 18406 Mini clamp holder SVLCR/L

ATORN®

Design
Angle of attack 95°.

Applications
For indexable insert VC..



18405

ISO designation	l_1 mm	f mm	For indexable inserts	Right 18405 ...	Left 18406 ...
SVLCR/L 0808 D07	60	10	VC. 0702..	095	095
SVLCR/L 1010 E07	70	12	VC. 0702..	096	096
SVLCR/L 1212 F07	80	16	VC. 0702..	097	097

Spare parts		Clamping screw 10	Wrench	Support plate	Insert nut	Key
Plate size	TORX® size T	18470 ...	52529 ...	18471 ...	18472 ...	51809 ...
6 mm	8	723	403			
9 mm	15	724	406	712	720	107
12 mm	15	722	406	741	723	109

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18428 Clamp holder SVVCN

Design
Angle of attack 72.5°.

Applications
For indexable insert VC..

18428

ISO designation	l_1 mm	f mm	For indexable inserts	Neutral 18428	...
SVVCN 0808 K07	125	4.0	VC. 0702		098
SVVCN 1010 M07	150	5.0	VC. 0702		099
SVVCN 1212 M07	150	6.0	VC. 0702		100
SVVCN 1212 F11	80	6.0	VC. 1103..		101
SVVCN 1616 H11	100	8.0	VC. 1103..		102
SVVCN 2020 K11	125	10.0	VC. 1103..		103
SVVCN 2020 K16	125	10.0	VC. 1604..		105
SVVCN 2525 M16	150	12.5	VC. 1604..		106

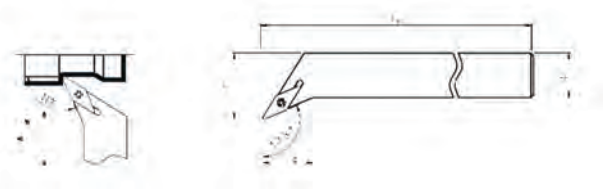
Spare parts		Clamping screw		Wrench		Support plate		Insert nut		Key	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18472	...	51809	...
11 mm	8			723		403					
16 mm	15			737		406		729		720	107

18429 Mini clamp holder SVXCR/L

Design
Angle of attack 113°.

Applications
For indexable insert VC

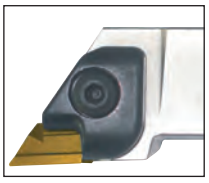
18429

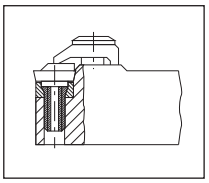


ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18429	...	Left 18429	...
SVXCR/L 0808 D07	60	15	10	VC. 0702		101		111
SVXCR/L 1010 E07	70	15	12	VC. 0702		102		112
SCXCR/L 1212 F07	80	18	16	VC.. 0702		103		113

Info — Clamp holder system C

For indexable inserts without bore.
Mounted only with adjustable clamp for DIN 4968 indexable inserts.

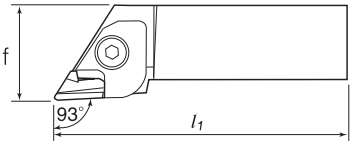




18430 - 18431 Clamp holder CKJNR/L

Design
Angle of attack 93°.

Applications
For indexable insert KNUX 1604.



18430

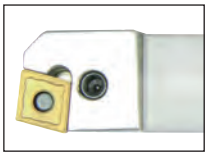
ISO designation	l_1 mm	f mm	For indexable inserts	Right 18430	...	Left 18431	...
CKJNR/L 2525 M16	150	32	KNUX 1604..		101		101
CKJNR/L 3225 P16	170	32	KNUX 1604..		102		

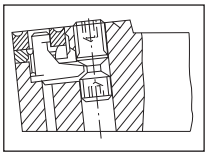
Spare parts	Bracket	...	Key	...
Plate size	18470	...	51809	...
16 mm right		801		109
16 mm left		802		109

Spare parts	Shim	...	Screw for bracket	...	Key	...
Plate size	18474	...	18475	...	51809	...
16 mm right		801		801		106
16 mm left		802		801		106

Info — Clamp holder system P

For indexable inserts with centre bore.
Mounted with clamping lever.

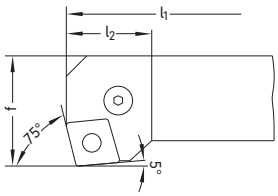




18442 - 18443 Clamp holder PCKNR/L

Design
Angle of attack 75°.

Applications
For indexable insert CN..



18442

ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18442	...	Left 18443	...
PCKNR/L 2020 K12	125	25	25	CN .. 1204..		301		301
PCKNR/L 2525 M12	150	25	32	CN .. 1204..		302		302

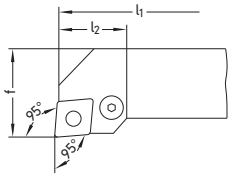
Spare parts	TORX® size T	Clamping screw 10	...	Key	...	Support plate	...	Sleeve 10	...	Clamping lever	...
Plate size		18470	...	52529	...	18471	...	18474	...	18475	...
12 mm	15		730		406		725		720		720

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18444 - 18445 Clamp holder PCLNR/L

Design
Angle of attack 95°.

Applications
For indexable insert CN..



18444

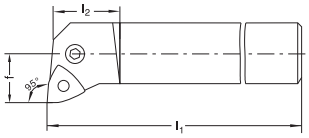
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18444	...	Left 18445	...
PCLNR/L 2020 K12	125	28	25	CN .. 1204..		301		301
PCLNR/L 2525 M12	150	33	32	CN .. 1204..		302		302
PCLNR/L 3225 P12	170	33	32	CN .. 1204..		303		303
PCLNR/L 2525 M16	150	33	32	CN .. 1606..		304		304
PCLNR/L 3225 P16	170	33	32	CN .. 1606..		305		305

Spare parts		Clamping screw 10		Wrench		Support plate		Sleeve 10		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
12 mm	15		730		406		725		720		720
16 mm	10		734		405		739		726		727

18446 - 18447 Clamp holder PWLNR/L

Design
Angle of attack 95°.

Applications
For indexable insert WN..



18446

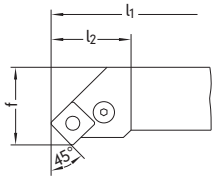
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18446	...	Left 18447	...
PWLNR/L 2020 K06	125	28	25	WN .. 0604..		299		299
PWLNR/L 2525 M06	150	33	32	WN .. 0604..		300		300
PWLNR/L 2020 K08	125	28	25	WN .. 0804..		301		301
PWLNR/L 2525 M08	150	33	32	WN .. 0804..		302		302
PWLNR/L 3225 P08	170	33	32	WN .. 0804..		304		304

Spare parts		Clamping screw 10		Wrench		Support plate		Sleeve 10		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
6 mm	10		733		405		738		725		726
8 mm	15		730		406		734		720		720

18448 - 18449 Clamp holder PSSNR/L

Design
Angle of attack 45°.

Applications
For indexable insert SN..



18448

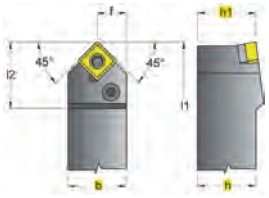
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18448	...	Left 18449	...
PSSNR/L 2020 K12	125	30	25	SN .. 1204..		301		301
PSSNR/L 2525 M12	150	30	32	SN .. 1204..		302		302
PSSNR/L 3225 P12	170	32	32	SN .. 1204..		303		303

Spare parts		Clamping screw 10		Wrench		Support plate		Sleeve 10		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
12 mm	15		730		406		730		720		720

18450 Clamp holder PSDNN

Design
Angle of attack 45°.

Applications
For indexable insert SN..



18450

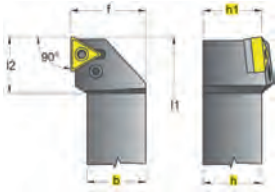
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Neutral 18450 ...
PSDNN 2020 K12	125	28	10.3	SN .. 1204..	301
PSDNN 2525 M12	150	29	12.8	SN .. 1204..	302

Spare parts		Clamping screw 10		Wrench		Support plate		Sleeve 10		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
12 mm	15		730		406		730		720		720

18451 - 18452 Clamp holder PTGNR/L

Design
Angle of attack 90°.

Applications
For indexable insert TN..



18451

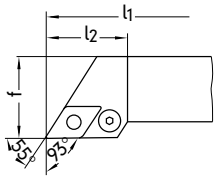
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18451 ...	Left 18452 ...
PTGNR/L 2020 K16	125	20	25	TN .. 1604..	301	301
PTGNR/L 2525 M16	150	21	32	TN .. 1604..	302	302

Spare parts		Clamping screw 10		Wrench		Support plate		Sleeve 10		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
16 mm	9		731		404		731		721		721

18453 - 18454 Clamp holder PDJNR/L

Design
Angle of attack 93°.

Applications
For indexable insert DN..



18453

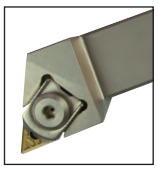
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18453 ...	Left 18454 ...
PDJNR/L 1616 H11	100	31	20	DN .. 1104..	298	298
PDJNR/L 2020 K11	125	28	25	DN .. 1104..	299	299
PDJNR/L 2020 K15	125	35	25	DN .. 1506..	301	301
PDJNR/L 2525 M15	150	39	32	DN .. 1506..	302	302
PDJNR/L 3225 P15	170	33	32	DN .. 1506..	303	303

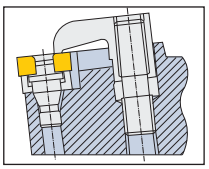
Spare parts		Clamping screw 10		Wrench		Support plate		Sleeve 10		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
11 mm	10		733		405		737		725		725
15 mm	15		732		406		732		720		722

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info — Clamp holder system M

For indexable inserts with centre bore.
Mounted with adjustable clamp.

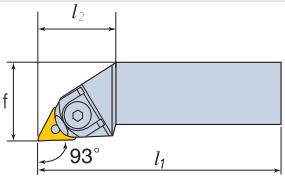




18460 - 18461 Clamp holder MTJNR/L

Design
Angle of attack 93°.

Applications
For indexable insert TNM..



18460

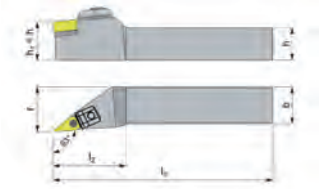
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18460	...	Left 18461	...
MTJNR/L 2020-K16	125	32	25	TNM .. 16..		201		201
MTJNR/L 2525-M16	150	32	32	TNM .. 16..		202		202

Spare parts	Key		Clamping pin		Bracket		Shim	
Plate size	51809	...	18471	...	18472	...	18473	...
16 mm		106		601		601		601

18464 - 18465 Clamp holder MVJNR/L

Design
Angle of attack 93°.

Applications
For indexable insert VN..



18464

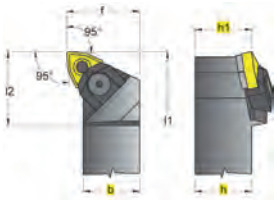
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18464	...	Left 18465	...
MVJNR/L 2020-K16	125	32	25	VN .. 16..		101		101
MVJNR/L 2525-M16	150	32	32	VN .. 16..		102		102

Spare parts	Key		Clamping pin		Bracket		Shim	
Plate size	51809	...	18471	...	18472	...	18473	...
16 mm		107		601		604		604

18462 - 18463 Clamp holder MWLNR/L

Design
Angle of attack 95°.

Applications
For indexable insert WN..



18462

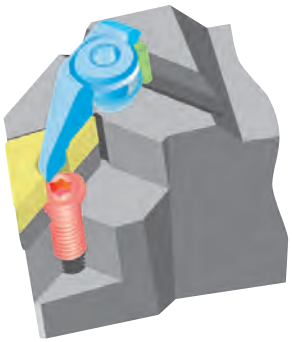
ISO designation	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18462	...	Left 18463	...
MWLNR/L 2020-K08	125	34	25	WN .. 08..		204		204
MWLNR/L 2525-M08	150	34	32	WN .. 08..		205		205
MWLNR/L 3232-P08	170	35	40	WN .. 08..		206		206

Spare parts	Key		Clamping pin		Bracket		Shim	
Plate size	51809	...	18471	...	18472	...	18473	...
8 mm		107		602		603		603

Info — Clamp holder system MaxiLock D

CUTTING SOLUTIONS BY CERATIZIT

The number-one choice for machining with negative centre hole plates.
Reliable and precise positioning of the indexable insert thanks to **double clamping action** of the clamping element.
Delivered with 1 spare shim.



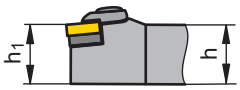
- Clamping element
- Indexable insert
- Shim
- Pin
- Screw

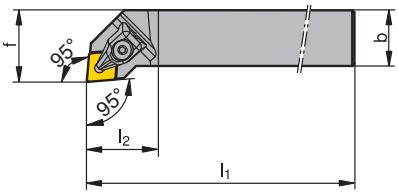
19500 Clamp holder MaxiLock D DCLN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 95°

Applications
For indexable insert CN..





ISO designation	h_1 mm	h mm	b mm	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 19500	...	Left 19500	...
DCLNR/L 2020 K12	20	20	20	125	32	25	CN.. 1204..		101		201
DCLNR/L 2525 M12	25	25	25	150	32	32	CN.. 1204..		102		202
DCLNR/L 3225 P12	32	32	25	170	32	32	CN.. 1204..		103		203

Spare parts

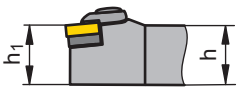
For indexable inserts Size	Screw	Shim	Bracket	Key	Screw 19990	...	Shim 19991	...	Bracket 19992	...	Key 51932	...
CN.. 1204..	M 4.5 x 12.0	U-CN12T3	SET-02-D	IP 15		102		101		102		407

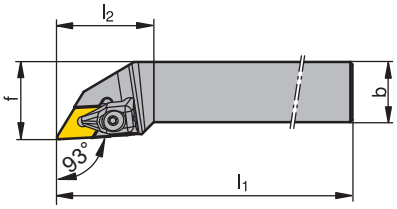
19501 Clamp holder MaxiLock D DDJN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 93°

Applications
For indexable insert DN..





ISO designation	h_1 mm	h mm	b mm	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 19501	...	Left 19501	...
DDJNR/L 1616 H11	16	16	16	100	33	20	DN.. 1104..		101		201
DDJNR/L 2020 K11	20	20	20	125	40	25	DN.. 1104..		102		202
DDJNR/L 2020 K15	20	20	20	125	40	25	DN.. 1506..		103		203
DDJNR/L 2525 M15	25	25	25	150	40	32	DN.. 1506..		104		204
DDJNR/L 3225 P15	32	32	25	170	40	32	DN.. 1506..		105		205

Spare parts

For indexable inserts Size	Screw	Shim	Bracket	Key	Screw 19990	...	Shim 19991	...	Bracket 19992	...	Key 51932	...
DN.. 1104..	M 3.0 x 7.0	U-DN1103-D	SET-01L-D	IP 9		101		102		101		405
DN.. 1506..	M 4.5 x 12.0	U-DN15T3-D	SET-02-D	IP 15		102		103		102		407

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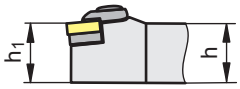
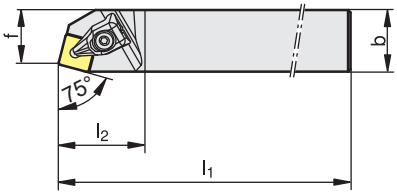
19502 Clamp holder MaxiLock D DSBN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 75°

Applications
For indexable insert SN..





19502

ISO designation	h1 mm	h mm	b mm	l1 mm	l2 mm	f mm	For indexable inserts	Right 19502	...	Left 19502	...
DSBNR/L 2020 K12	20	20	20	125	35	17	SN.. 1204..		101		201
DSBNR/L 2525 M12	25	25	25	150	35	22	SN.. 1204..		102		202
DSBNR/L 3232 P15	32	32	32	170	42	27	SN.. 1506..		103		203

Spare parts

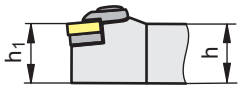
For indexable inserts Size	Screw	Shim	Bracket	Key	Screw 19990	...	Shim 19991	...	Bracket 19992	...	Key 51932	...
SN.. 1204..	M 4.5 x 12.0	U-SN12T3-D	SET-02-D	IP 15		102		104		102		407
SN.. 1506..	M 5.0 x 14.0	U-SN1504-D	SET-03-D	IP 20				105		103		408

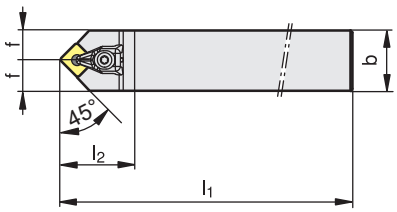
19503 Clamp holder MaxiLock D DSDN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 45°

Applications
For indexable insert SN..





19503

ISO designation	h1 mm	h mm	b mm	l1 mm	l2 mm	f mm	For indexable inserts	Neutral 19503	...
DSDNN 2020 K12	20	20	20	125	38	10	SN.. 1204..		101
DSDNN 2525 M12	25	25	25	150	38	13	SN.. 1204..		102

Spare parts

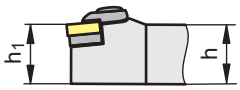
For indexable inserts Size	Screw	Shim	Bracket	Key	Screw 19990	...	Shim 19991	...	Bracket 19992	...	Key 51932	...
SN.. 1204..	M 4.5 x 12.0	U-SN12T3-D	SET-02-D	IP 15		102		104		102		407

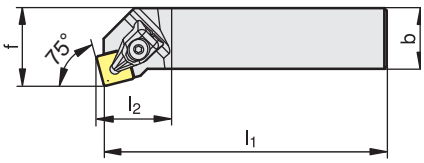
19504 Clamp holder MaxiLock D DSKN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 75°

Applications
For indexable insert SN..





19504

ISO designation	h1 mm	h mm	b mm	l1 mm	l2 mm	f mm	For indexable inserts	Right 19504	...	Left 19504	...
DSKNR/L 2525 M12	25	25	25	150	31	32	SN.. 1204..		101		201

Spare parts

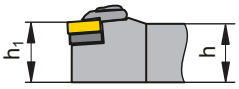
For indexable inserts Size	Screw	Shim	Bracket	Key	Screw 19990	...	Shim 19991	...	Bracket 19992	...	Key 51932	...
SN.. 1204..	M 4.5 x 12.0	U-SN12T3-D	SET-02-D	IP 15		102		104		102		407

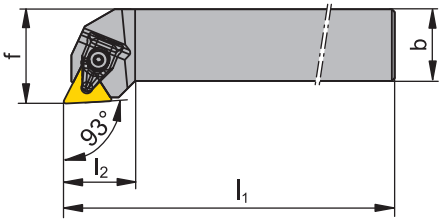
19505 Clamp holder MaxiLock D DTJN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 93°

Applications
For indexable insert TN..





19505

ISO designation	h1 mm	h mm	b mm	l1 mm	l2 mm	f mm	For indexable inserts	Right 19505	...	Left 19505	...
DTJNR/L 2020 K16	20	20	20	125	23	25	TN.. 1604..		101		201
DTJNR/L 2525 M16	25	25	25	150	24	32	TN.. 1604..		102		202

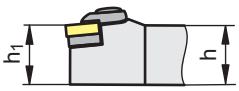
Spare parts					Screw		Shim		Bracket		Key	
For indexable inserts Size	Screw	Shim	Bracket	Key	19990	...	19991	...	19992	...	51932	...
TN.. 1604..	M 3.0 x 7.0	U-TN1603-D	SET-01-D	IP 9		101		106		104		405

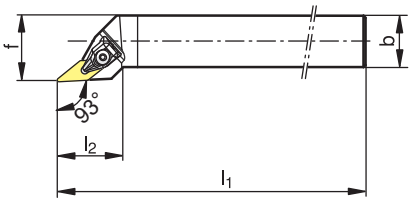
19506 Clamp holder MaxiLock D DVJN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 93°

Applications
For indexable insert VN..





19506

ISO designation	h1 mm	h mm	b mm	l1 mm	l2 mm	f mm	For indexable inserts	Right 19506	...	Left 19506	...
DVJNR/L 2020 K16	20	20	20	125	39	25	VN.. 1604..		101		201
DVJNR/L 2525 M16	25	25	25	150	39	32	VN.. 1604..		102		202

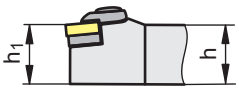
Spare parts					Screw		Shim		Bracket		Key	
For indexable inserts Size	Screw	Shim	Bracket	Key	19990	...	19991	...	19992	...	51932	...
VN.. 1604..	M 3.0 x 7.0	U-VN1603-D	SET-01L-D	IP 9		101		107		101		405

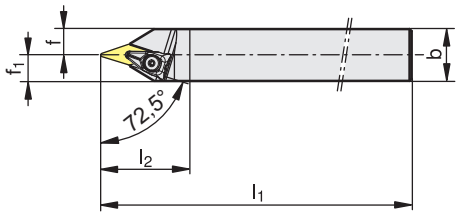
19507 Clamp holder MaxiLock D DVVN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 72°

Applications
For indexable insert VN..





19507

ISO designation	h1 mm	h mm	b mm	l1 mm	l2 mm	f mm	For indexable inserts	Neutral 19507	...
DVVNN 2020 K16	20	20	20	125	43	7.5	VN.. 1604..		101
DVVNN 2525 M16	25	25	25	150	43	13.0	VN.. 1604..		102

Spare parts					Screw		Shim		Bracket		Key	
For indexable inserts Size	Screw	Shim	Bracket	Key	19990	...	19991	...	19992	...	51932	...
VN.. 1604..	M 3.0 x 7.0	U-VN1603-D	SET-01L-D	IP 9		101		107		101		405

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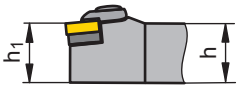
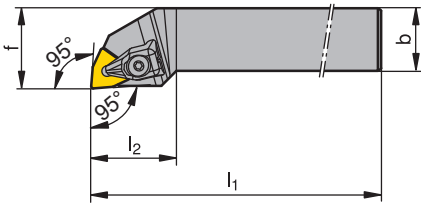
19508 Clamp holder MaxiLock D DWLN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 95°

Applications
For indexable insert WN..





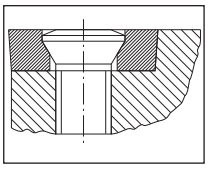
ISO designation	h_1 mm	h mm	b mm	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 19508	...	Left 19508	...
DWLNR/L 1616 H06	16	16	16	100	25	20	WN.. 0604..		101		201
DWLNR/L 2020 K06	20	20	20	125	27	25	WN.. 0604..		102		202
DWLNR/L 2020 K08	20	20	20	125	34	25	WN.. 0804..		103		203
DWLNR/L 2525 M06	25	25	25	150	27	32	WN.. 0604..		104		204
DWLNR/L 2525 M08	25	25	25	150	34	32	WN.. 0804..		105		205

Spare parts					Screw	...	Shim	...	Bracket	...	Key	...
For indexable inserts Size	Screw	Shim	Bracket	Key	19990		19991		19992		51932	
WN.. 0604..	M 3.0 x 7.0	U-WN0603-D	SET-01-D	IP 9		101		108		104		405
WN.. 0804..	M 4.5 x 12.0	U-WN08T3-D	SET-02-D	IP 15		102		109		102		407

Info Boring bars system S

ATORN® HHW

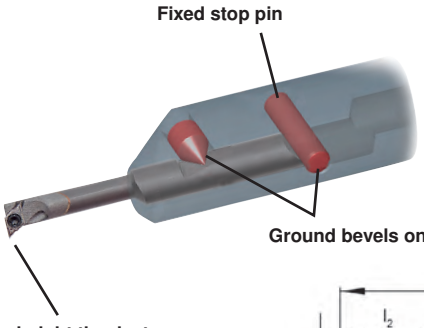
Indexable insert mounted with central screw.



18477 Miniature extractor range

ATORN®

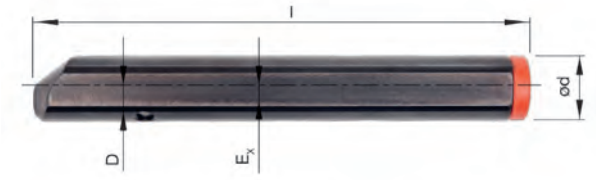
- Innovative mini extractor range from diameter 4.8 mm with CD.., CP.., WC.., VC.. Indexable inserts
- Extremely economical and universal thanks to boring bar holder
- Innovative clamping technology for process-reliable series production



NEW

18477 101

18477 102-103



18477 101-103
Design
- With stop pin and fixing pin
- Innovative system with perfect fixing of the tool

l mm	l1 mm	l2 mm	D mm	D2 mm	d mm	Miniature boring-bar holder 18477	...	Threaded bolt 18477	...	Coolant locking ring 18477	...
120	95	25	4	12	16		101		210		212
120	-	-	6	-	16		102		211		
120	-	-	8	-	16		103		211		

Continued

18477 Miniature extractor range

Continued

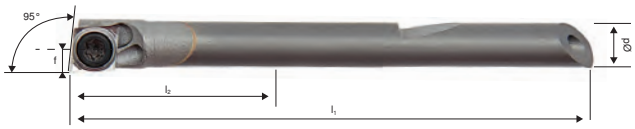
18477 104-105

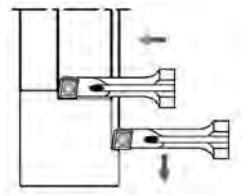
NEW

18477 104-105

Design
- Precision-manufactured boring bar made from solid carbide, with internal cooling
- Offset, type C
- Angle of attack 95°

Applications
Universal use for turning and facing and for longitudinal turning.





ISO designation	Ø D min. mm	d mm	l_2 mm	l_1 mm	f mm	For indexable inserts	18477 ...
E04-SCLDR04-AX	4.8	4	24	46	2.4	CD.. 0401	104
E06-SCLDR04-AX	6.8	6	37	65	3.4	CD.. 0401	105

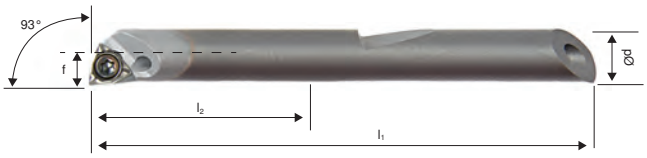
18477 106

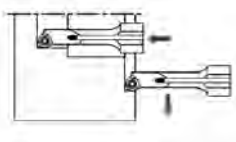
NEW

18477 106

Design
- Precision-manufactured boring bar made from solid carbide, with internal cooling
- Offset, type W
- Angle of attack 93°
- Positive body geometry ensures low cutting forces

Applications
Universal use for turning and facing and for longitudinal turning.





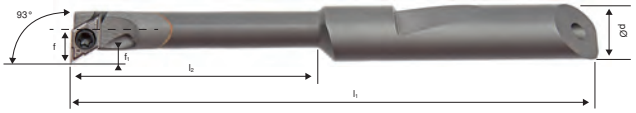
ISO designation	Ø D min. mm	d mm	l_2 mm	l_1 mm	f mm	For indexable inserts	18477 ...
E06-SWUCR02-AX	7.8	6	37	65	3.9	WC.. 0201	106

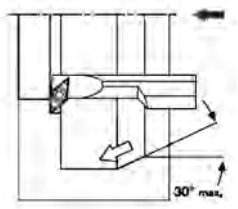
18477 107-108

NEW

18477 107-108

Design
- Precision-manufactured boring bar made from solid carbide, with internal cooling
- Offset, type D
- Angle of attack 93.5°
- Slim contour optimised for longitudinal and copy turning
- Positive body geometry ensures low cutting forces





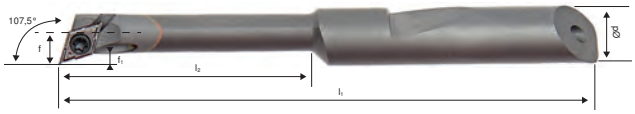
ISO designation	Ø D min. mm	d mm	l_2 mm	l_1 mm	f mm	f_1 mm	For indexable inserts	18477 ...
E0406-SDUCR04-AX	5.6	6	26	56	3	1.5	DC.. 04..	107
E0408-SDUCR04-AX	5.6	8	26	57	3	1.5	DC.. 04..	108

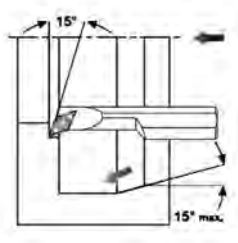
18477 109-110

NEW

18477 109-110

Design
- Precision-manufactured boring bar made from solid carbide, with internal cooling
- Offset, type D
- Angle of attack 107.5°
- Slim contour optimised for longitudinal and copy turning
- Positive body geometry ensures low cutting forces





ISO designation	Ø D min. mm	d mm	l_2 mm	l_1 mm	f mm	f_1 mm	For indexable inserts	18477 ...
E0406-SDQCR04-AX	5.2	6	26	56	2.6	1.1	DC.. 04..	109
E0408-SDQCR04-AX	5.2	8	26	57	2.6	1.1	DC.. 04..	110

Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

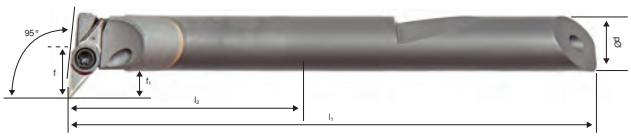
Continued

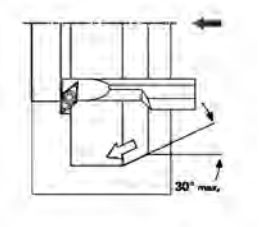
18477 111-112

Design
- Precision-manufactured boring bar made from solid carbide with internal cooling
- Offset, type V
- Angle of attack 95°
- Slim contour optimised for longitudinal and copy turning
- Positive body geometry ensures low cutting forces

NEW

18477 111-112





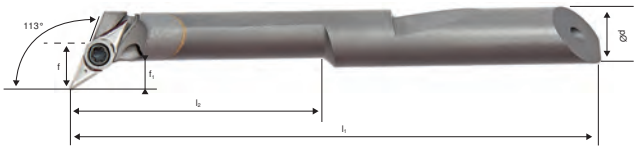
ISO designation	Ø D min. mm	d mm	l_2 mm	l_1 mm	f mm	f_1 mm	For indexable inserts	18477 ...
E0406-SVLRC05-AX	9.2	6	26	56	6	3	VC.. 05..	111
E0408-SVLRC05-AX	9.2	8	26	57	5	3	VC.. 05..	112

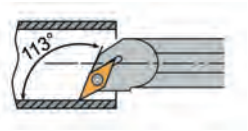
18477 113-114

Design
- Precision-manufactured boring bar made from solid carbide, with internal cooling
- Offset, type V
- Angle of attack 113°
- Slim contour optimised for longitudinal and copy turning
- Positive body geometry ensures low cutting forces

NEW

18477 113-114



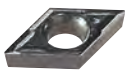


ISO designation	Ø D min. mm	d mm	l_2 mm	l_1 mm	f mm	f_1 mm	For indexable inserts	18477 ...
E0406-SVXCR05-AX	8.2	6	26	56	5	3	VC.. 05..	113
E0408-SVXCR05-AX	9.2	8	26	57	5	3	VC.. 05..	114

NEW

Indexable inserts and spare parts

18477 201 | 18477 202 | 18477 203-204



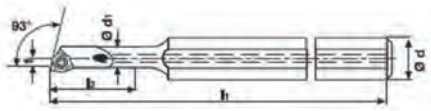
Applications Cemented carbide grade Coating		N HC 6315 uncoated	P HC 7625 coated	N HW 6315 uncoated
ISO Designation		18477 ...	18477 ...	18477 ...
DCGT 04T002-MN		201		
DCGT 04T002-FP1			202	
VCGT 050102-MN				203
VCGT 050102-FP1			204	

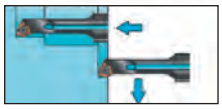
Spare parts		Clamping screw
Screw size	TORX®size T	18477 ...
M2 x 3	6	214
M1.6 x 3.5	5	215

18478 Mini boring bar SWUCR/L with internal cooling

ATORN®

Design
Angle of attack 93°.
Applications
For indexable inserts WCGT 0201..





18478 105

18478 121-122

ISO designation	Ø d mm	f mm	d_1 mm	l_1 mm	l_2 mm	Ø D min. mm	For indexable inserts	Steel/right 18478 ...	Steel/left 18478 ...
A 0508H SWUCR/L 02	8	2.9	5	100	18	5.8	WCGT 0201	101	105
A 0608H SWUCR/L 02	8	3.9	6	100	24	7.8	WCGT 0201	102	106

ISO designation	Ø d mm	f mm	d_1 mm	l_1 mm	l_2 mm	Ø D min. mm	For indexable inserts	Solid carbide/right 18478 ...	Solid carbide/left 18478 ...
E 0508H SWUCR/L 02	8	2.9	5	100	18	5.8	WCGT 0201	111	115
E 0608H SWUCR/L 02	8	3.9	6	100	24	7.8	WCGT 0201	112	116

ISO designation	Ø d mm	f mm	l_1 mm	Ø d mm	For indexable inserts	Solid carbide/right 18478 ...	Solid carbide/left 18478 ...
E 05F SWUCR/L 02	5	2.9	85	5.8	WCGT 0201	121	125
E 06G/L02 SWUCR	6	3.9	95	7.8	WCGT 0201	122	126

Clamping screw

Wrench

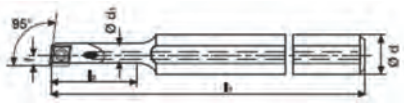
Spare parts Plate size	TORX®size T	Clamping screw 18470 ...	Wrench 52529 ...
2 mm	7	749	402

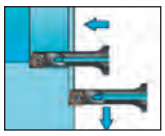
18479 Mini boring bar SCLDR/L with internal cooling

ATORN®

Design
Angle of attack 95°.

Applications
For indexable inserts CDGT 0401...
For special mini machining tasks and
for automated longitudinal turning machines
from diameter 4.8 mm.





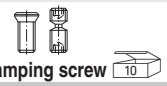
18479

ISO designation	f mm	d_1 mm	l_1 mm	Ø D min. mm	For indexable inserts	Steel/right 18479 ...	Steel/left 18479 ...
A 04E SCLDR/L 04	2.4	4	70	4.8	CDGT 0401..	101	111
A 05E SCLDR/L 04	2.9	5	70	5.8	CDGT 0401..	102	112
A 06F SCLDR/L 04	3.4	6	80	6.8	CDGT 0401..	103	113

ISO designation	Ø d mm	f mm	d_1 mm	l_1 mm	l_2 mm	Ø D min. mm	For indexable inserts	Steel/right 18479 ...	Steel/left 18479 ...
A 0408H SCLDR/L 04	8	2.4	4	100	16	4.8	CDGT 0401..	121	131
A 0508H SCLDR/L 04	8	2.9	5	100	20	5.8	CDGT 0401..	122	132
A 0608H SCLDR/L 04	8	3.4	6	100	24	6.8	CDGT 0401..	123	133

ISO designation	f mm	d_1 mm	l_1 mm	Ø D min. mm	For indexable inserts	Solid carbide/right 18479 ...	Solid carbide/left 18479 ...
E 04F SCLDR/L 04	2.4	4	80	4.8	CDGT 0401..	141	151
E 05F SCLDR/L 04	2.9	5	80	5.8	CDGT 0401..	142	152
E 06G SCLDR/L 04	3.4	6	95	6.8	CDGT 0401..	143	153

ISO designation	Ø d mm	f mm	d_1 mm	l_1 mm	l_2 mm	Ø D min. mm	For indexable inserts	Solid carbide/right 18479 ...	Solid carbide/left 18479 ...
E 0408H SCLDR/L 04	8	2.4	4	100	16	4.8	CDGT 0401..	161	171
E 0508H SCLDR/L 04	8	2.9	5	100	20	5.8	CDGT 0401..	162	172
E 0608H SCLDR/L 04	8	3.4	6	100	24	6.8	CDGT 0401..	163	173



Clamping screw

Wrench

Spare parts Plate size	TORX®size T	Clamping screw 18470 ...	Wrench 52529 ...
4 mm	6	750	401

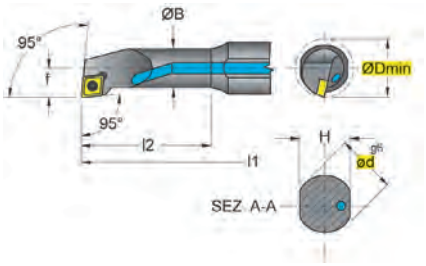
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18482 Boring bar sets SCLCR/L with internal cooling

ATORN®

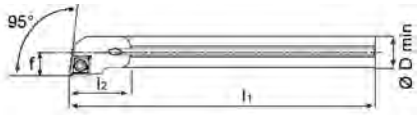
Design
Angle of attack 95°, each with 1 boring bar, in case.

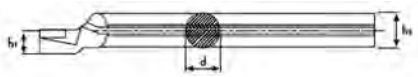
Applications
For indexable insert CCMT 0602...



18482 201-302

18482 201-302 Set contents	Ø D mm	d mm	f mm	Ø B mm	l_1 mm	l_2 mm	H mm
0608H-SCLCR/L-06	8.5	8	4	6	100	20	7
0810J-SCLCR/L-06	10.5	10	6	8	110	26	9
1012K-SCLCR/L-06	12.5	12	7	10	125	32	11
1216M-SCLCR/L-06	15.5	16	9	12	150	40	15





18482 401-402

18482 401-402 Set contents	d mm	f mm	l_1 mm	l_2 mm	h_1 mm	h_2 mm	Ø D min. mm
E 08K SCLCR/L-06	8	5	125	-	3.5	7.5	11.0
E 10K SCLCR/L-06	10	6	125	10	4.5	9.5	14.0
E 12M SCLCR/L-06	12	8	150	10	5.5	11.5	17.0

Set	Shank	Version	Content	18482 ...
A-SCLCR-06	Steel	Right	4 pcs.	201
A-SCLCL-06	Steel	Left	4 pcs.	202
AH-SCLCR-06	HSS	Right	4 pcs.	301
AH-SCLCL-06	HSS	Left	4 pcs.	302
E-SCLCR-06	Solid carbide	Right	3 pcs.	401
E-SCLCL-06	Solid carbide	Left	3 pcs.	402

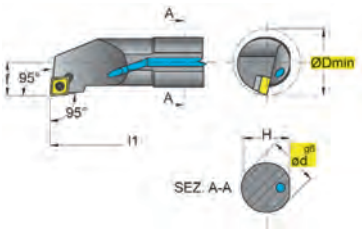
18484 - 18485 Boring bars SCLCR/L with internal cooling (steel + HSS)

ATORN®

Design
Angle of attack 95°.
Applications
For indexable insert CC.

18484 197–207 + 18485 197–207
Quality
Steel.

18484 297–306 + 18485 297–306
Quality
HSS.



18484

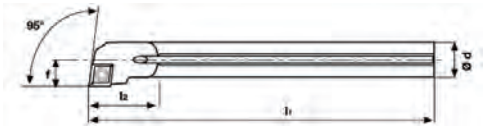
ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Steel/right 18484	...	HSS/right 18484	...	Steel/left 18485	...	HSS/left 18485	...
A/AH0608H-SCLCR/L-06	8.5	8	4.0	100	7.00	CC .. 0602..		197		297		197		297
A/AH0810J-SCLCR/L-06	10.5	10	6.0	110	9.00	CC .. 0602..		198		298		198		298
A/AH1012K-SCLCR/L-06	12.5	12	7.0	125	11.00	CC .. 0602..		199		299		199		299
A/AH1216M-SCLCR/L-06	15.5	16	9.0	150	15.00	CC .. 0602..		200		300		200		300
A08H-SCLCR/L-06	10.0	8	5.0	100	7.60	CC .. 0602..		201				201		
A10K-SCLCR/L-06	12.0	10	7.0	125	9.50	CC .. 0602..		202				202		
A12L-SCLCR/L-06	16.0	12	9.0	150	11.50	CC .. 0602..		203				203		
A16Q-SCLCR/L-09	20.0	16	11.0	180	15.25	CC .. 09T3..		204				204		
A20R-SCLCR/L-09	25.0	20	13.0	200	19.00	CC .. 09T3..		205				205		
A25R-SCLCR/L-12	32.0	25	17.0	200	24.00	CC .. 1204..		207				207		
AH08K-SCLCR/L-06	10.0	8	5.0	125	7.60	CC .. 0602..				301				301
AH10K-SCLCR/L-06	12.0	10	6.0	125	9.50	CC .. 0602..				302				302
AH12M-SCLCR/L-06	14.0	12	7.0	150	11.50	CC .. 0602..				303				303
AH16Q-SCLCR/L-09	18.0	16	11.0	180	15.25	CC .. 09T3..				304				304
AH20R SCLCR/L-09	23.0	20	13.0	200	19.00	CC .. 09T3..				305				305
AH25R-SCLCR/L-12	28.0	25	15.5	200	24.00	CC .. 1204..				306				306

Spare parts		Clamping screw 10		Wrench	
Plate size	TORX® size T	18470	...	52529	...
6 mm/rod 0608/0810	7		740		402
6 mm/rod 1012/1216	8		741		403
6 mm/rod 08	7		740		402
6 mm/rod 10/12	8		741		403
9 mm/rod 16/20	15		742		406
12 mm/rod 25	15		722		406

18486 - 18487 Solid-carbide boring bars SCLCR/L with internal cooling

ATORN®

Design
Angle of attack 95°.
Applications
For indexable insert CC.



18486

ISO designation	Ø d mm	l_1 mm	l_2 mm	f mm	Ø D min. mm	For indexable inserts	Right 18486	...	Left 18487	...
E08K-SCLCR/L-06	8	125	10	5	9.0	CC.. 0602..		101		101
E10K-SCLCR/L-06	10	125	10	6	11.0	CC.. 0602..		102		102
E12M-SCLCR/L-06	12	150	10	8	13.0	CC.. 0602..		103		103
E16R-SCLCR/L-09	16	200	16	10	18.0	CC.. 09T3..		104		104
E20S-SCLCR/L-09	20	250	16	12	23.0	CC.. 09T3..		105		105

Spare parts		Clamping screw 10		Wrench	
Plate size	TORX® size T	18470	...	52529	...
6 mm/rod 08	7		740		402
6 mm/rod 10/12	8		741		403
9 mm/rod 9/12/16	15		742		406

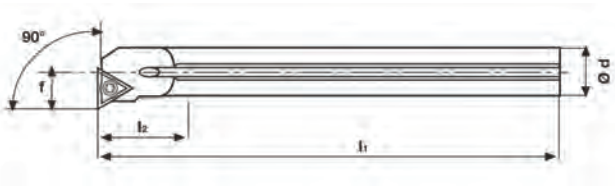
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18490 - 18491 Boring bars STFCR/L with internal cooling

ATORN®

Design
Angle of attack 90°.

Applications
For indexable insert TC..



18490

ISO designation	Ø D mm	d mm	l_1 mm	l_2 mm	f mm	For indexable inserts	Right 18490	...	Left 18491	...
A10K-STFCR/L-11	14	10	125	16	7	TC.. 1102..		201		201
A12L-STFCR/L-11	18	12	140	20	9	TC.. 1102..		202		202
A16Q-STFCR/L-11	22	16	180	25	11	TC.. 1102..		203		203
A20R-STFCR/L-16	26	20	200	32	13	TC.. 16T3..		204		204
A25R-STFCR/L-16	34	25	200	40	17	TC.. 16T3..		205		205
A32S-STFCR/L-16	40	32	250	21	22	TC.. 16T3..		206		206
A40T-STFCR/L-16	49	40	300	21	27	TC.. 16T3..		207		207

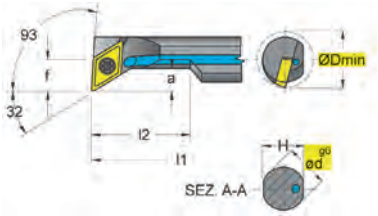
Spare parts		Clamping screw 10	18470	...	Wrench 52529	...
Plate size	TORX® size T					
11 mm	8			715		403
16 mm	15			742		406

18494 Boring bar sets SDUCR/L with internal cooling

ATORN®

Design
Angle of attack 93.5°, each with 1 boring bar, in case.

Applications
For indexable insert DCMT 0702...



18494

18494 101–201 Set contents	Ø D mm	Ø d mm	f mm	a mm	l_1 mm	l_2 mm	AR	H mm
A0810H-SDUCR/L-07	12.5	10	7	4	100	22	15°	9
A1012K-SDUCR/L-07	15.5	12	9	5	125	28	13°	11
A1216M-SDUCR/L-07	19.5	16	11	5	150	36	10°	15

18494 301–302 Set contents	Ø D mm	Ø d mm	f mm	a mm	l_1 mm	l_2 mm	AR	H mm
E0810H-SDUCR/L-07	12.5	10	7	4	100	22	15°	9
E1012K-SDUCR/L-07	15.5	12	9	5	125	28	13°	11

Set	Shank	Version	Contents	18494	...
A-SDUCR-07	Steel	Right	3 pcs.		101
A-SDUCL-07	Steel	Left	3 pcs.		102
AH-SDUCR-07	HSS	Right	3 pcs.		201
AH-SDUCL-07	HSS	Left	3 pcs.		202
E-SDUCR-07	Solid carbide	Right	2 pcs.		301
E-SDUCL-07	Solid carbide	Left	2 pcs.		302

18496 - 18497 Boring bars SDUCR/L with internal cooling (steel + HSS)

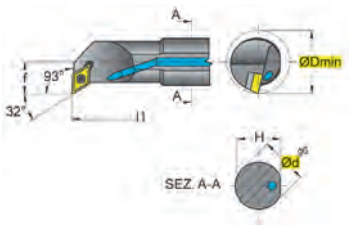
Design
Angle of attack 93°.

Applications
For indexable insert DC..

18496 197-207 + 18497 102-197
HW
Quality
Steel.

18496 297-304 + 18497 297-304
ATORN®
Quality
HSS.

18496



ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Steel/right 18496	...	HSS/right 18496	...	Steel/left 18497	...	HSS/left 18497	...
A/AH0810H-SDUCR/L-07	12.5	10	7.0	100	9.00	DC .. 0702..		197		297		197		297
A/AH1012K-SDUCR/L-07	15.5	12	9.0	125	11.00	DC .. 0702..		198		298		198		298
A/AH1216M-SDUCR/L-07	19.5	16	11.0	150	15.00	DC .. 0702..		199		299		199		299
A12L-SDUCR/L-07	16.0	12	9.0	125	11.50	DC .. 0702..		202				102		
A16Q-SDUCR/L-07	20.0	16	11.0	150	15.25	DC .. 0702..		203				103		
A20R-SDUCR/L-11	25.0	20	13.0	180	19.00	DC .. 11T3..		205				105		
A25R-SDUCR/L-11	32.0	25	17.0	200	24.00	DC .. 11T3..		206				106		
A32S-SDUCR/L-11	40.0	32	22.0	250	31.00	DC .. 11T3..		207				107		
AH10K-SDUCR/L-07	14.0	10	8.3	125	9.00	DC .. 0702..				301				301
AH12M-SDUCR/L-07	16.0	12	9.3	150	11.00	DC .. 0702..				302				302
AH16Q-SDUCR/L-07	20.0	16	11.3	180	15.00	DC .. 0702..				303				303
AH20R-SDUCR/L-11	26.0	20	16.1	200	19.00	DC .. 11T3..				304				304

Spare parts Plate size	TORX® size T	Clamping screw 10 18470	...	Wrench 52529	...
7 mm/rod 0810/1012/1216	7		740		402
7 mm/rod 12	8		715		403
7 mm/rod 16	8		720		403
11 mm/rod 20/25	15		724		406
11 mm/rod 32 mm	15		724		406

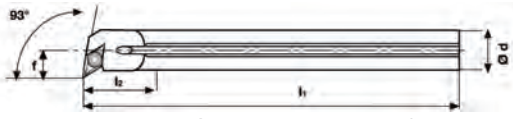
18518 - 18519 Solid-carbide boring bars SDUCR/L with internal cooling

ATORN®

Design
Angle of attack 93°.

Applications
For indexable insert DC..

18518



ISO designation	Ø d mm	l_1 mm	l_2 mm	f mm	Ø D min. mm	For indexable inserts	Right 18518	...	Left 18519	...
E10K SDUCR/L-07	10	125	10.0	7	12.0	DC.. 0702..		101		101
E12M-SDUCR/L-07	12	150	12.5	9	15.0	DC.. 0702..		102		102
E16R-SDUCR/L-07	16	200	16.5	11	19.0	DC.. 0702..		103		103
E20S-SDUCR/L-11	20	250	20.5	13	23.0	DC.. 11T3..		104		104

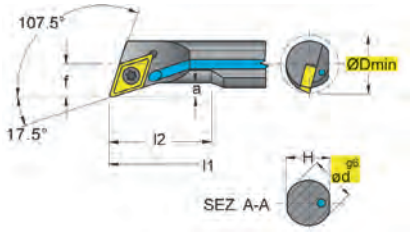
Spare parts Plate size	TORX® size T	Clamping screw 10 18470	...	Wrench 52529	...
7 mm	8		741		403
11 mm	15		742		406

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18498 Boring bar sets SDQCR/L with internal cooling

ATORN®

Set ADQ 0812 R/L 07
Design
Three pcs., angle of attack 107.5°,
each with one boring bar, in case.
Applications
For indexable insert
DCMT 0702…



18498

Version	18498	...
Right		201
Left		202

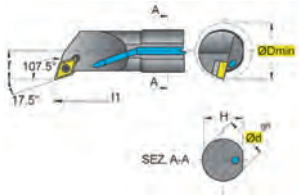
Set contents	Ø D mm	Ø d mm	f mm	a mm	l_1 mm	l_2 mm	AR	H mm
A0810H-SDQCR/L-07	12.5	10	7	3	100	22	15°	9
A1012K-SDQCR/L-07	15.5	12	9	4	125	28	13°	11
A1216M-SDQCR/L-07	19.5	16	11	5	150	36	10°	15

18500 - 18501 Boring bars SDQCR/L with internal cooling

ATORN®

Design
Angle of attack 107.5°.

Applications
For indexable insert DC..



18500

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Right 18500	...	Left 18501	...
A0810H-SDQCR/L-07	12.5	10	7	100	9.00	DC .. 0702..		098		098
A1012K-SDQCR/L-07	15.5	12	9	125	11.00	DC .. 0702..		099		099
A1216M-SDQCR/L-07	19.5	16	11	150	15.00	DC .. 0702..		100		100
A12L-SDQCR/L-07	18.0	12	9	140	11.50	DC .. 0702..		102		102
A16Q-SDQCR/L-07	22.0	16	11	180	15.25	DC .. 0702..		103		103
A20Q-SDQCR/L-07	25.0	20	13	180	19.00	DC .. 0702..		104		104
A20R-SDQCR/L-11	26.0	20	13	200	19.00	DC .. 11T3..		105		105
A25R-SDQCR/L-11	34.5	25	17	200	24.00	DC .. 11T3..		106		106

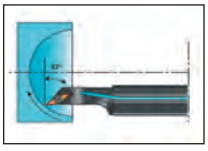
Spare parts		Clamping screw 10	...	Wrench	...
Plate size	TORX® size T	18470		52529	
7 mm/rod 0810/1012/1216	7		740		402
7 mm/rod 12/16/20	8		741		403
11 mm/rod 20	15		742		406
11 mm/rod 25	15		742		406

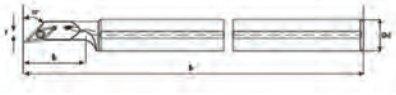
18509 Mini boring bar SVJCR/L with internal cooling

ATORN®

Design
Angle of attack 93°.

Applications
For indexable inserts VCMT/VCGT 0702..





18509

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Steel/right 18509	...	Steel/left 18509	...
A 10K SVJCR/L 07	13	10	1.5	125	18	VCMT/VCGT 0702..		101		111
A 12L SVJCR/L 07	13	12	2.0	140	18	VCMT/VCGT 0702..		102		112

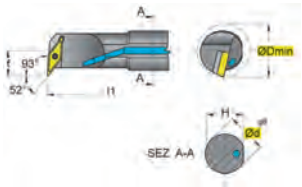
Spare parts		Clamping screw 10	...	Wrench	...
Plate size	TORX® size T	18470		52529	
7 mm	6		748		401

18512 - 18513 Boring bars SVUCR/L with internal cooling

ATORN®

Design
Angle of attack 93°.

Applications
For indexable insert VC..



18512

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Right 18512	...	Left 18513	...
A25R-SVUCR/L-16	32	25	17	200	24	VC .. 1604..		103		103
A32S-SVUCR/L-16	40	32	22	250	31	VC .. 1604..		104		104

Spare parts		Clamping screw 10		Wrench	
Plate size	TORX® size T	18470	...	52529	...
16 mm	8		741		403

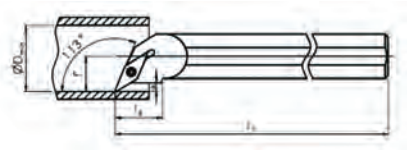
18510 Mini boring bars SVXCR/L with internal cooling

ATORN®

Design
Angle of attack 113°.

Applications
For indexable inserts VCMT/VCGT 0702..

18510



ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Steel/right 18510	...	Steel/left 18510	...
A 10H SVXCR/L 07	12.5	10	7	100	22	VCMT/VCGT 0702		101		111
A 12K SVXCR/L 07	15.5	12	9	125	28	VCMT/VCGT 0702		102		112
A 16M SVXCR/L 07	17.5	16	11	150	36	VCMT/VCGT 0702		103		113

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Solid carbide/right 18510	...	Solid carbide/left 18510	...
E 10H SVXCR/L 07	12.5	10	7	100	32	VCMT/VCGT 0702..		121		131
E 12K SVXCR/L 07	15.5	12	9	125	40	VCMT/VCGT 0702..		122		132
E 16M SVXCR/L 07	19.5	16	11	150	55	VCMT/VCGT 0702..		123		133

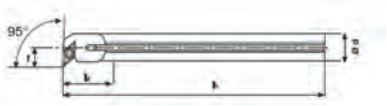
Spare parts		Clamping screw 10		Wrench	
Plate size	TORX® size T	18470	...	52529	...
7 mm	6		748		401

18511 Mini boring bars SVLCR/L with internal cooling

ATORN®

Design
Angle of attack 95°.

Applications
For indexable inserts VCMT/VCGT 0702..



18511

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Steel/right 18511	...	Steel/left 18511	...
A 10H SVLCR/L 07	12.5	10	7	100	22	VCMT/VCGT 0702..		101		111
A 12K SVLCR/L 07	15.5	12	9	125	28	VCMT/VCGT 0702..		102		112
A 16M SVLCR/L 07	19.5	16	11	150	36	VCMT/VCGT 0702..		103		113

Continued

18511 Mini boring bars SVLCR/L with internal cooling

Continued ▶

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Solid carbide/right 18511 ...	Solid carbide/left 18511 ...
E 10H SVLCR/L 07	12.5	10	7	100	32	VCMT/VCGT 0702..	121	131
E 12K SVLCR/L 07	15.5	12	9	125	40	VCMT/VCGT 0702..	122	132
E 16M SVLCR/L 07	19.5	16	11	150	55	VCMT/VCGT 0702..	123	133

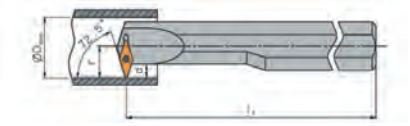
Spare parts

Plate size	TORX® size T	Clamping screw 18470 ...	Wrench 52529 ...
7 mm	6	748	401

18514 Mini boring bars SVVCR/L with internal cooling

ATORN®

Design
Angle of attack 72.5°.
Applications
For indexable inserts VCMT/VCGT 0702..



18514

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Steel/right 18514 ...	Steel/left 18514 ...
A 10H SVVCR/L 07	13.5	10	8	100	22	VCMT/VCGT 0702..	101	111
A 12K SVVCR/L 07	15.5	12	9	125	28	VCMT/VCGT 0702..	102	112
A 16M SVVCR/L 07	17.5	16	11	150	36	VCMT/VCGT 0702..	103	113

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Solid carbide/right 18514 ...	Solid carbide/left 18514 ...
E 10H SVVCR/L 07	13.5	10	8	100	32	VCMT/VCGT 0702..	121	131
E 12K SVVCR/L 07	15.5	12	9	125	40	VCMT/VCGT 0702..	122	132
E 16M SVVCR/L 07	17.5	16	11	150	55	VCMT/VCGT 0702..	123	133

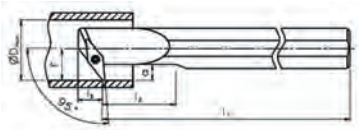
Spare parts

Plate size	TORX® size T	Clamping screw 18470 ...	Wrench 52529 ...
7 mm	6	748	401

18515 Mini boring bars SV95CR/L with internal cooling

ATORN®

Design
Angle of attack 95°.
Applications
For indexable inserts VCMT/VCGT 0702..



18515

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Steel/right 18515 ...	Steel/left 18515 ...
A 10H SV95CR/L 07	12.5	10	7	100	22	VCMT/VCGT 0702..	101	111
A 12K SV95CR/L 07	15.5	12	9	125	28	VCMT/VCGT 0702..	102	112
A 16M SV95CR/L 07	17.5	16	11	150	36	VCMT/VCGT 0702..	103	113

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	l_2 mm	For indexable inserts	Solid carbide/right 18515 ...	Solid carbide/left 18515 ...
E 10H SV95CR/L 07	12.5	10	7	100	32	VCMT/VCGT 0702..	121	131
E 12K SV95CR/L 07	15.5	12	9	125	40	VCMT/VCGT 0702..	122	132
E 16M SV95CR/L 07	17.5	16	11	150	55	VCMT/VCGT 0702..	123	133

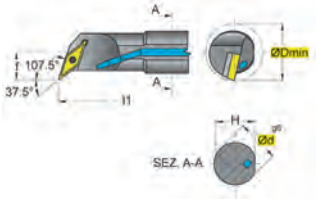
Spare parts

Plate size	TORX® size T	Clamping screw 18470 ...	Wrench 52529 ...
7 mm	6	748	401

18516 - 18517 Boring bars SVQCR/L with internal cooling

Design
Angle of attack 107.5°.

Applications
For indexable insert VC..



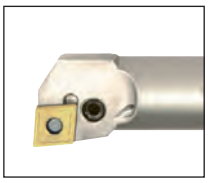
18516

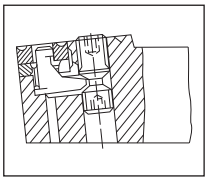
ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Right 18516	...	Left 18517	...
A25R-SVQCR/L-16	32	25	17	200	24	VC .. 1604..		103		103

Spare parts		Clamping screw		Wrench	
Plate size	TORX® size T	18470	...	52529	...
16 mm/rod 25	15		742		406

Info Boring bars system P

Indexable insert mounted with clamping lever.

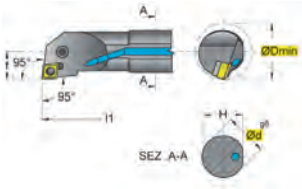




18522 - 18523 Boring bars PCLNR/L with internal cooling

Design
Angle of attack 95°.

Applications
For indexable insert CN..



18522

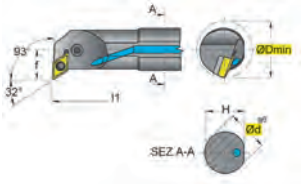
ISO designation	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Right 18522	...	Left 18523	...
A25S-PCLNR/L-12	25	17	250	23.0	CN .. 1204..		201		201
A32S-PCLNR/L-12	32	22	250	30.0	CN .. 1204..		202		202

Spare parts		Clamping screw		Wrench		Support plate		Sleeve		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
12 mm/rod 25	10		745		405		605		605		605

18526 - 18527 Boring bars PDUNR/L with internal cooling

Design
Angle of attack 93°.

Applications
For indexable insert DN..



18526

ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Right 18526	...	Left 18527	...
A32S-PDUNR/L-15	40	32	22	250	31.0	DN .. 1506..		204		204
A40T-PDUNR/L-15	50	40	27	300	38.5	DN .. 1506..		205		205

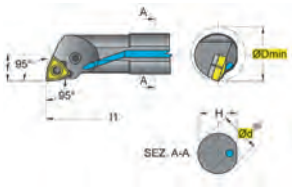
Spare parts		Clamping screw		Wrench		Support plate		Sleeve		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
15 mm	10		605		405		606		605		606

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18530 - 18531 Boring bars PWLNR/L with internal cooling

Design
Angle of attack 95°.

Applications
For indexable insert WN..



18530

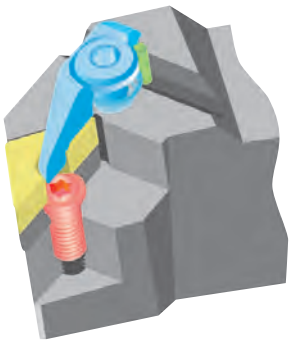
ISO designation	Ø D mm	Ø d mm	f mm	l_1 mm	H mm	For indexable inserts	Right 18530	...	Left 18531	...
A25S-PWLNR/L-08	32	25	17	250	23.0	WN .. 0804..		201		201
A32S-PWLNR/L-08	40	32	22	250	30.0	WN .. 0804..		202		202

Spare parts		Clamping screw		Wrench		Support plate		Sleeve		Clamping lever	
Plate size	TORX® size T	18470	...	52529	...	18471	...	18474	...	18475	...
8 mm	10		605		405		607		605		605

Info Boring bars system MaxiLock D

CUTTING SOLUTIONS BY CERATIZIT

The number-one choice for machining with negative centre hole plates.
Reliable and precise positioning of the indexable insert thanks to **double clamping action** of the clamping element.
Delivered with 1 spare shim.



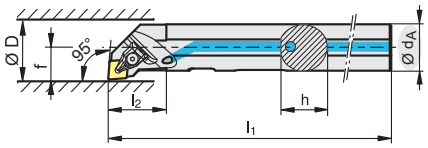
- Clamping element
- Indexable insert
- Shim
- Pin
- Screw

19550 Boring bars MaxiLock D DCLN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 95°

Applications
For indexable inserts CN..



19550

ISO designation	Ø d_A mm	h mm	l_1 mm	l_2 mm	f mm	Ø Dmin mm	For indexable inserts	Right 19550	...	Left 19550	...
A25R DCLNR/L 12	25	24	200	36	17	32	CN.. 1204..		101		201
A32S DCLNR/L 12	32	31	250	40	22	40	CN.. 1204..		102		202
A40T DCLNR/L 12	40	39	300	45	27	50	CN.. 1204..		103		203

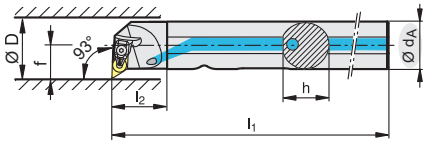
Spare parts					Screw		Shim		Bracket		Key	
For indexable inserts Size	Screw	Shim	Bracket	Key	19990	...	19991	...	19992	...	51932	...
CN.. 1204..	M 4.5 x 12.0	U-CN12T3	SET-02-D	IP 15		102		101		102		407

19551 Boring bars MaxiLock D DDUN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 93°

Applications
For indexable inserts DN..



ISO designation	Ø d_A mm	h mm	l_1 mm	l_2 mm	f mm	Ø Dmin mm	For indexable inserts	Right 19551	...	Left 19551	...
A25R DDUNR/L 11	25	24	200	30	17	32	DN.. 1104..		101		201
A32S DDUNR/L 11	32	31	250	40	22	40	DN.. 1104..		102		202
A40T DDUNR/L 15	40	39	300	45	27	50	DN.. 1506..		103		203

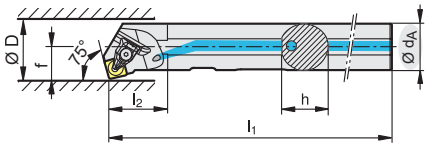
Spare parts					Screw	...	Shim	...	Bracket	...	Key	...
For indexable inserts Size	Screw	Shim	Bracket	Key	19990		19991		19992		51932	
DN.. 1104..	M 3.0 x 7.0	U-DN1103-D	SET-01L-D	IP 9		101		102		101		405
DN.. 1506..	M 4.5 x 12.0	U-DN15T3-D	SET-02-D	IP 15		102		103		102		407

19552 Boring bars MaxiLock D DSKN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 75°

Applications
For indexable inserts SN..



ISO designation	Ø d_A mm	h mm	l_1 mm	l_2 mm	f mm	Ø Dmin mm	For indexable inserts	Right 19552	...	Left 19552	...
A32S DSKNR/L 12	32	31	250	44	22	40	SN.. 1204..		101		201

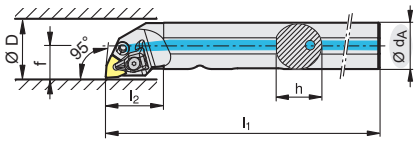
Spare parts					Screw	...	Shim	...	Bracket	...	Key	...
For indexable inserts Size	Screw	Shim	Bracket	Key	19990		19991		19992		51932	
SN.. 1204..	M 4.5 x 12.0	U-SN12T3-D	SET-02-D	IP 15		102		104		102		407

19553 Boring bars MaxiLock D DWLN

CUTTING SOLUTIONS BY CERATIZIT

Design
- Angle of attack 95°

Applications
For indexable inserts WN..



ISO designation	Ø d_A mm	h mm	l_1 mm	l_2 mm	f mm	Ø Dmin mm	For indexable inserts	Right 19553	...	Left 19553	...
A25R DWLNR/L 06	25	24	200	32	17	32	WN.. 0604..		101		201
A32S DWLNR/L 08	32	31	250	40	22	40	WN.. 0804..		102		202
A40T DWLNR/L 08	40	39	300	45	27	50	WN.. 0804..		103		203

Spare parts					Screw	...	Shim	...	Bracket	...	Key	...
For indexable inserts Size	Screw	Shim	Bracket	Key	19990		19991		19992		51932	
WN.. 0604..	M 3.0 x 7.0	U-WN0603-D	SET-01-D	IP 9		101		108		104		405
WN.. 0804..	M 4.5 x 12.0	U-WN08T3-D	SET-02-D	IP 15		102		109		102		407

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18550 Indexable inserts CCGT

ALU

ATORN®

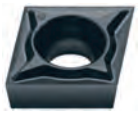
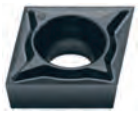
Design
- Positive 7°
- 80° tip angle
- Clamping depth approx. 0.2–4.0 mm for aluminium and non-ferrous metals

18550 301-308
Design
- Polished chip breaker for reducing build-up edge formation when machining aluminium

Applications
For turning aluminium and other non-ferrous metals.

18550 401-408
Applications
For turning aluminium and other non-ferrous metals.
For finishing stainless materials.

18550 101-108 | 18550 200-208 | 18550 301-308 | 18550 401-408

Applications						P K		P K		N		N M	
Cemented carbide grade						HC 7810		HC 7820		HW 6310		HC 6310	
Coating						coated		coated		uncoated		coated	
ISO Designation	Clamping depth approx. mm	Thickness mm	r mm			18550	...	18550	...	18550	...	18550	...
CCGT 060201-FU1	0.1–1.5	2.38	0.1	10 pcs.				200 NEW					
CCGT 060202-FU1	0.2–2.0	2.38	0.2	10 pcs.			101 NEW		201 NEW				
CCGT 060202-MN	0.2–1.5	2.38	0.2	10 pcs.							301		401
CCGT 060204-FU1	0.2–2.5	2.38	0.4	10 pcs.			102 NEW		202 NEW				
CCGT 060204-MN	0.3–1.8	2.38	0.4	10 pcs.							302		402
CCGT 09T301-FU1	0.1–1.5	3.97	0.1	10 pcs.					205 NEW				
CCGT 09T302-FU1	0.2–2.0	3.97	0.2	10 pcs.			106 NEW		206 NEW				
CCGT 09T302-MN	0.2–2.0	3.97	0.2	10 pcs.							303		403
CCGT 09T304-FU1	0.2–2.5	3.97	0.4	10 pcs.			107 NEW		207 NEW				
CCGT 09T304-MN	0.3–2.5	3.97	0.4	10 pcs.							304		404
CCGT 09T308-FU1	0.3–3.0	3.97	0.8	10 pcs.			108 NEW		208 NEW				
CCGT 09T308-MN	0.5–3.0	3.97	0.8	10 pcs.							305		405
CCGT 120402-MN	0.2–3.5	4.76	0.2	10 pcs.							306		406
CCGT 120404-MN	0.2–4.0	4.76	0.4	10 pcs.							307		407
CCGT 120408-MN	0.5–5.0	4.76	0.8	10 pcs.							308		408

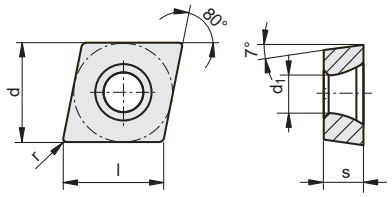
19600 Indexable inserts CCGT

CUTTING SOLUTIONS BY CERATIZIT

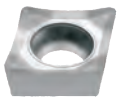
Design
- Positive 7°
- 80° tip angle
- Polished indexable insert for reducing built-up edge formation

19600 101-108
Applications
For machining aluminium and non-ferrous metals.

19600 201-307
Applications
Coated grade for machining aluminium and stainless and acid-resistant materials.



19600


- 27

- 25P

Applications								N		N M		N M	
Cemented carbide grade								H10T		AMZ		AMZ	
Coating								uncoated		PVD		PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm			19600	...	19600	...	19600	...
CCGT 060202FN-27	6.4	6.35	2.38	2.8	0.2	10 pcs.			101		201		
CCGT 060202FN-25P	6.4	6.35	2.38	2.8	0.2	10 pcs.							301
CCGT 060204FN-27	6.4	6.35	2.38	2.8	0.4	10 pcs.			102		202		
CCGT 060204FN-25P	6.4	6.35	2.38	2.8	0.4	10 pcs.							302
CCGT 09T302FN-27	9.7	9.52	3.97	4.4	0.2	10 pcs.			103		203		
CCGT 09T302FN-25P	9.7	9.52	3.97	4.4	0.2	10 pcs.							303
CCGT 09T304FN-27	9.7	9.52	3.97	4.4	0.4	10 pcs.			104		204		
CCGT 09T304FN-25P	9.7	9.52	3.97	4.4	0.4	10 pcs.							304
CCGT 09T308FN-25P	9.7	9.52	3.97	4.4	0.8	10 pcs.							305
CCGT 09T308FN-27	9.7	9.52	3.97	4.4	0.8	10 pcs.			105		205		
CCGT 120402FN-27	12.9	12.70	4.76	5.5	0.2	10 pcs.			106		206		
CCGT 120404FN-27	12.9	12.70	4.76	5.5	0.4	10 pcs.			107		207		
CCGT 120404FN-25P	12.9	12.70	4.76	5.5	0.4	10 pcs.							306
CCGT 120408FN-27	12.9	12.70	4.76	5.5	0.8	10 pcs.			108		208		
CCGT 120408FN-25P	12.9	12.70	4.76	5.5	0.8	10 pcs.							307

18551 Indexable inserts CCMT

ATORN®

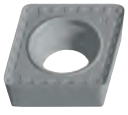
Positive 7°, 80° tip angle.

CCMT .....-WP
With WIPER cutting geometry (same surface quality with double feed, twice the surface quality with the same feed).

CCMT .....-FP
Applications
For finishing.

CCMT .....-MP
Applications
For mid-range machining.

18551 210-624


– WP

– FP

– MP

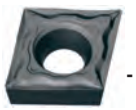
Applications					P K		P K		P		M		M	
Cemented carbide grade					HC 7610		HC 7620		HC 7630		HC 7520		HC 7530	
Coating					coated		coated		coated		coated		coated	
ISO Designation	Clamping depth Approx. mm	Thickness mm	r mm		18551	...	18551	...	18551	...	18551	...	18551	...
CCMT 09T304-WP	0.5–4.0	3.97	0.4	10 pcs.				305		405				
CCMT 09T308-WP	0.7–4.0	3.97	0.8	10 pcs.				306		406				
CCMT 120404-WP	0.5–4.0	4.76	0.4	10 pcs.				307		407				
CCMT 120408-WP	0.7–4.0	4.76	0.8	10 pcs.				308		408				
CCMT 060202-FP	0.1–1.0	2.38	0.2	10 pcs.		210		310				525 NEW		
CCMT 060204-FP	0.1–1.5	2.38	0.4	10 pcs.		211		311				526 NEW		
CCMT 09T302-FP	0.1–1.0	3.97	0.2	10 pcs.		212		312						
CCMT 09T304-FP	0.1–1.5	3.97	0.4	10 pcs.		213		313				527 NEW		
CCMT 09T308-FP	0.1–1.5	3.97	0.8	10 pcs.								528 NEW		
CCMT 120404-FP	0.1–1.5	4.76	0.4	10 pcs.		214		314						
CCMT 120408-FP	0.1–2.5	4.76	0.8	10 pcs.		215		315						
CCMT 060204-MP	0.5–2.5	2.38	0.4	10 pcs.				320		420		520		620
CCMT 09T304-MP	0.4–3.0	3.97	0.4	10 pcs.				321		421		521		621
CCMT 09T308-MP	0.6–4.0	3.97	0.8	10 pcs.				322		422		522		622
CCMT 120408-MP	0.6–5.0	4.76	0.8	10 pcs.				323		423		523		623
CCMT 120412-MP	0.8–5.0	4.76	1.2	10 pcs.								524		624

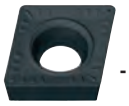
18553 Indexable insert CCMT

ATORN®

18553

NEW


- FM


- MM

Applications					P K
Cemented carbide grade					HC 7820
Coating					coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18553 ...
CCMT 060202-FM	0.1–1.0	2.38	0.2	10 pcs.	210
CCMT 060204-FM	0.1–1.5	2.38	0.4	10 pcs.	211
CCMT 060204-MM	0.4–2.5	2.38	0.4	10 pcs.	219
CCMT 09T302-FM	0.1–1.0	3.97	0.2	10 pcs.	212
CCMT 09T304-FM	0.1–1.5	3.97	0.4	10 pcs.	213
CCMT 09T304-MM	0.4–3.0	3.97	0.4	10 pcs.	214
CCMT 09T308-FM	0.1–1.5	3.97	0.8	10 pcs.	221
CCMT 09T308-MM	0.6–4.0	3.97	0.8	10 pcs.	222

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

19601 Indexable insert CCMT

CUTTING SOLUTIONS BY CERATIZIT

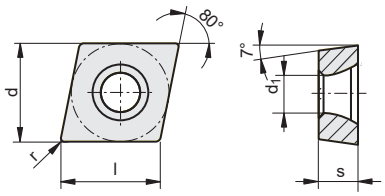
Design
- Positive 7°
- 80° tip angle

19601 101-108
Applications
For machining steels, as well as stainless and acid-resistant materials.

19601 101-108

- M25

- M55



Applications							PM	
Cemented carbide type							CTPM125	
Coating							PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19601	...
CCMT 060204EN-M25	6.4	6.35	2.38	2.8	0.4	10 pcs.		101
CCMT 060204EN-M55	6.4	6.35	2.38	2.8	0.4	10 pcs.		102
CCMT 09T304EN-M25	9.7	9.52	3.97	4.4	0.4	10 pcs.		103
CCMT 09T308EN-M25	9.7	9.52	3.97	4.4	0.8	10 pcs.		104
CCMT 09T308EN-M55	9.7	9.52	3.97	4.4	0.8	10 pcs.		105
CCMT 09T304EN-M55	9.7	9.52	3.97	4.4	0.4	10 pcs.		106
CCMT 120404EN-M55	12.9	12.70	4.76	5.5	0.4	10 pcs.		107
CCMT 120408EN-M55	12.9	12.70	4.76	5.5	0.8	10 pcs.		108

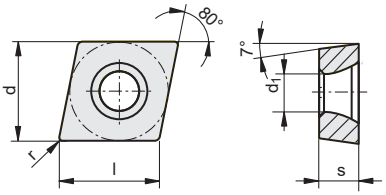
19601 201-214
Applications
For machining steels and cast iron.

19601 201-214

- SF

- SM

- SMF



Applications							PK	
Cemented carbide type							CTCP125	
Coating							CVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19601	...
CCMT 060204EN-SF	6.4	6.35	2.38	2.8	0.4	10 pcs.		201
CCMT 060204EN-SM	6.4	6.35	2.38	2.8	0.4	10 pcs.		202
CCMT 060204EN-SMF	6.4	6.35	2.38	2.8	0.4	10 pcs.		203
CCMT 09T304EN-SF	9.7	9.52	3.97	4.4	0.4	10 pcs.		204
CCMT 09T304EN-SM	9.7	9.52	3.97	4.4	0.4	10 pcs.		205
CCMT 09T304EN-SMF	9.7	9.52	3.97	4.4	0.4	10 pcs.		206
CCMT 09T308EN-SF	9.7	9.52	3.97	4.4	0.8	10 pcs.		207
CCMT 09T308EN-SM	9.7	9.52	3.97	4.4	0.8	10 pcs.		208
CCMT 09T308EN-SMF	9.7	9.52	3.97	4.4	0.8	10 pcs.		209
CCMT 120404EN-SF	12.9	12.70	4.76	5.5	0.4	10 pcs.		210
CCMT 120404EN-SM	12.9	12.70	4.76	5.5	0.4	10 pcs.		211
CCMT 120404EN-SMF	12.9	12.70	4.76	5.5	0.4	10 pcs.		212
CCMT 120408EN-SF	12.9	12.70	4.76	5.5	0.8	10 pcs.		213
CCMT 120408EN-SM	12.9	12.70	4.76	5.5	0.8	10 pcs.		214

18552 Indexable inserts CDGT

ATORN®

18552 101-103

Applications			N		PH	
Cemented carbide grade			HW 6315		HC 7625	
Coating			uncoated		coated	
ISO designation	r mm		18552	...	18552	...
CDGT 040101-MN	0.1	10 pcs.		101		
CDGT 040102-MN	0.2	10 pcs.		102		
CDGT 040104-MN	0.4	10 pcs.		103		
CDGT 040102FN	0.2	10 pcs.				114
CDGT 040104FN	0.4	10 pcs.				116

18554 Indexable inserts CNMG

ATORN®

Design
Negative 0°, 80° tip angle.

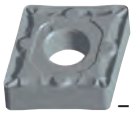
CNMG .....-FP + CNMG .....-FM
Applications
For finishing.

CNMG .....-MP + CNMG .....-MM
Applications
For mid-range machining.

CNMG .....-RP5 + CNMG .....-RM
Applications
For roughing.

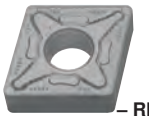
CNMG .....-WP
Design
With WIPER cutting geometry (same surface quality with double feed, twice the surface quality with the same feed).

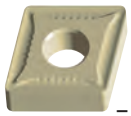
18554

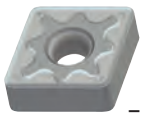

– FP

– FM

– MP
– MM


– RP5


– RM


– WP

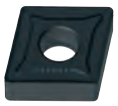
Applications					P K	P K	P	M	M	M
Cemented carbide grade					HC 7610	HC 7620	HC 7630	HC 7510	HC 7520	HC 7530
Coating					coated	coated	coated	coated	coated	coated
ISO designation	clamping depth approx. mm	Thickness mm	r mm		18554 ...	18554 ...	18554 ...	18554 ...	18554 ...	18554 ...
CNMG 120404-FP	0.1–1.5	4.76	0.4	10 pcs.	105	205				
CNMG 120408-FP	0.2–2.0	4.76	0.8	10 pcs.	106	206				
CNMG 120404-FM	0.2–1.0	4.76	0.4	10 pcs.				505	605	
CNMG 120408-FM	0.4–1.5	4.76	0.8	10 pcs.				506	606	
CNMG 120404-MP	0.5–2.0	4.76	0.4	10 pcs.		211	411			
CNMG 120408-MP	0.8–3.0	4.76	0.8	10 pcs.		212	412			
CNMG 120412-MP	0.8–3.5	4.76	1.2	10 pcs.			413			
CNMG 120404-MM	0.5–4.0	4.76	0.4	10 pcs.					610	710
CNMG 120408-MM	0.6–5.0	4.76	0.8	10 pcs.					611	711
CNMG 120412-MM	1.0–5.0	4.76	1.2	10 pcs.						712
CNMG 120408-RP5	1.0–6.0	4.76	0.8	10 pcs.	120 NEW	221	420			
CNMG 120412-RP5	1.0–6.0	4.76	1.2	10 pcs.	121 NEW	222	421			
CNMG 120408-RM	1.2–4.0	4.76	0.8	10 pcs.					615	715
CNMG 120412-RM	1.5–4.5	4.76	1.2	10 pcs.						716
CNMG 120408-WP	0.8–3.0	4.76	0.8	10 pcs.		227				

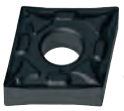
18555 Indexable insert CNMG

ATORN®

18555

- MM


- RM


- FM

Applications					P M S	P M S	P M S
Cemented carbide grade					HC 7810	HC 7820	HC 7830
Coating					coated	coated	coated
ISO designation	clamping depth approx. mm	Thickness mm	r mm		18555 ...	18555 ...	18555 ...
CNMG 120404-FM	0.2–1.0	4.76	0.4	10 pcs.		205	
CNMG 120404-MM	0.5–3.0	4.76	0.4	10 pcs.	110	210	310
CNMG 120408-FM	0.4–1.5	4.76	0.8	10 pcs.		206	
CNMG 120408-MM	0.8–3.0	4.76	0.8	10 pcs.	111	211	311
CNMG 120408-RM	1.2–5.0	4.76	0.8	10 pcs.		115	

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

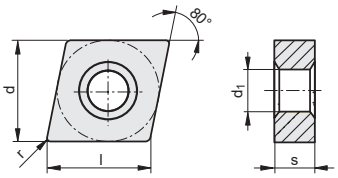
19603 Indexable insert CNMG

CUTTING SOLUTIONS BY CERATIZIT

Design
- Negative 0°
- 80° tip angle

19603 101-108
Applications
For machining steels, as well as stainless and acid-resistant materials.

19603 201-203
Applications
For machining difficult materials such as titanium and titanium alloys, creep-resistant and highly creep-resistant materials.

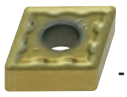


19603 101-203

- F30

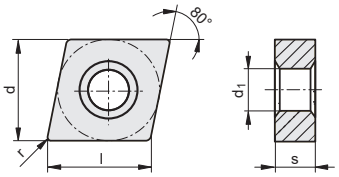
- M30

- M60


- M34

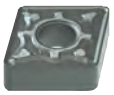
Applications							PM		S	
Cemented carbide grade							CTPM125		CTP5115	
Coating							PVD		PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19603	...	19603	...
CNMG 120404EN-F30	12.9	12.7	4.76	5.16	0.4	10 pcs.		101		
CNMG 120408EN-F30	12.9	12.7	4.76	5.16	0.8	10 pcs.		102		
CNMG 120408EN-M30	12.9	12.7	4.76	5.16	0.8	10 pcs.		103		
CNMG 120412EN-M30	12.9	12.7	4.76	5.16	1.2	10 pcs.		104		
CNMG 120416EN-M30	12.9	12.7	4.76	5.16	1.6	10 pcs.		105		
CNMG 120408EN-M60	12.9	12.7	4.76	5.16	0.8	10 pcs.		106		
CNMG 120412EN-M60	12.9	12.7	4.76	5.16	1.2	10 pcs.		107		
CNMG 120416EN-M60	12.9	12.7	4.76	5.16	1.6	10 pcs.		108		
CNMG 120404EN-M34	12.9	12.7	4.76	5.16	0.4	10 pcs.				201
CNMG 120408EN-M34	12.9	12.7	4.76	5.16	0.8	10 pcs.				202
CNMG 120412EN-M34	12.9	12.7	4.76	5.16	1.2	10 pcs.				203

19603 301-311
Applications
For machining steels and cast iron.



19603 301-311

- F50


- M50

- M70

Applications							PK	
Cemented carbide type							CTCP125	
Coating							CVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19603	...
CNMG 120404EN-F50	12.9	12.70	4.76	5.16	0.4	10 pcs.		301
CNMG 120404EN-M50	12.9	12.70	4.76	5.16	0.4	10 pcs.		302
CNMG 120408EN-M50	12.9	12.70	4.76	5.16	0.8	10 pcs.		304
CNMG 120412EN-M50	12.9	12.70	4.76	5.16	1.2	10 pcs.		305
CNMG 120408EN-M70	12.9	12.70	4.76	5.16	0.8	10 pcs.		306
CNMG 120412EN-M70	12.9	12.70	4.76	5.16	1.2	10 pcs.		307
CNMG 160612EN-M70	16.1	15.88	6.35	6.35	1.2	10 pcs.		308
CNMG 160616EN-M70	16.1	15.88	6.35	6.35	1.6	10 pcs.		309
CNMG 190612EN-M70	19.3	19.05	6.35	7.94	1.2	10 pcs.		310
CNMG 190616EN-M70	19.3	19.05	6.35	7.94	1.6	10 pcs.		311

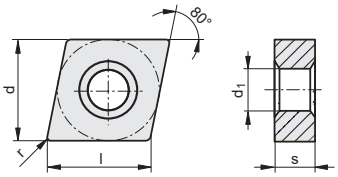
19604 Indexable inserts CNMM

CUTTING SOLUTIONS BY CERATIZIT

Design
- Negative 0°
- 80° tip angle
- Roughing insert on one side for extreme operati-

ons

Applications
For machining steels and cast iron.



19604

- R28

- R58

Applications							PK	
Cemented carbide type							CTCP125	
Coating							CVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19604	...
CNMM 120408EN-R28	12.9	12.7	4.76	5.16	0.8	10 pcs.		101
CNMM 120412EN-R28	12.9	12.7	4.76	5.16	1.2	10 pcs.		102
CNMM 120416EN-R28	12.9	12.7	4.76	5.16	1.6	10 pcs.		103
CNMM 120412EN-R58	12.9	12.7	4.76	5.16	1.2	10 pcs.		104
CNMM 120416EN-R58	12.9	12.7	4.76	5.16	1.6	10 pcs.		105

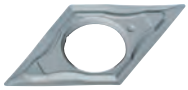
18560 Indexable inserts DCMT

ATORN®

Design
Positive 7°, 55° tip angle.

DCMT .....-FP
Applications
For finishing.

DCMT .....-MP
Applications
For mid-range machining.


– FP

– MP

18560

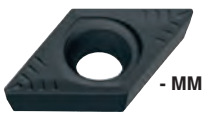
Applications					P M	P K	P K	P	M	M	
Cemented carbide grade					H 05	HC 7610	HC 7620	HC 7630	HC 7520	HC 7530	
Coating					uncoated	coated	coated	coated	coated	coated	
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18560 ...	18560 ...	18560 ...	18560 ...	18560 ...	18560 ...	
DCMT 11T304-MT	-	3.97	0.4	10 pcs.	324						
DCMT 070202-FP	0.1–1.0	2.38	0.2	10 pcs.		101	201		514 NEW		
DCMT 070204-FP	0.1–1.5	2.38	0.4	10 pcs.		102	202		515 NEW		
DCMT 11T302-FP	0.1–1.0	3.97	0.2	10 pcs.		103	203		516 NEW		
DCMT 11T304-FP	0.1–1.5	3.97	0.4	10 pcs.		104	204		517 NEW		
DCMT 11T308-FP	0.1–1.5	3.97	0.8	10 pcs.					518 NEW		
DCMT 070204-MP	0.4–2.0	2.38	0.4	10 pcs.			210	410	510	610	
DCMT 070208-MP	0.6–2.0	2.38	0.8	10 pcs.			211	411	511		
DCMT 11T304-MP	0.4–3.0	3.97	0.4	10 pcs.			212	412	512	612	
DCMT 11T308-MP	0.6–4.0	3.97	0.8	10 pcs.			213	413	513	613	

18561 Indexable insert DCMT

ATORN®

NEW

- FM


- MM

18561

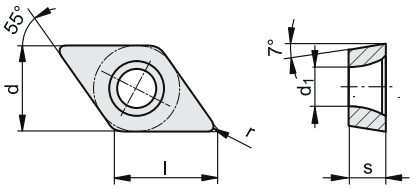
Applications					P K
Cemented carbide grade					HC 7820
Coating					coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18561 ...
DCMT 070202-FM	0.1–1.0	2.38	0.2	10 pcs.	201
DCMT 070204-FM	0.1–1.5	2.38	0.4	10 pcs.	202
DCMT 11T302-FM	0.1–1.0	3.97	0.2	10 pcs.	203
DCMT 11T304-FM	0.1–1.5	3.97	0.4	10 pcs.	204
DCMT 11T304-MM	0.4–3.0	3.97	0.4	10 pcs.	212
DCMT 11T308-FM	0.1–1.5	3.97	0.8	10 pcs.	205
DCMT 11T308-MM	0.6–4.0	3.97	0.8	10 pcs.	213

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

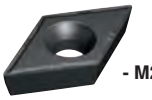
CUTTING SOLUTIONS BY CERATIZIT

Design
- Positive 7°
- 55° tip angle

19608 101-109
Applications
For machining steels, as well as stainless and acid-resistant materials.



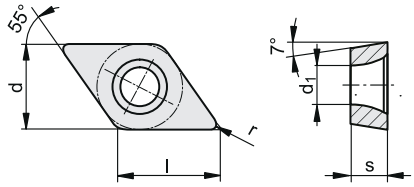
19608 101-109


- M25

- M55

Applications							PM
Cemented carbide type							CTPM125
Coating							PVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19608 ...
DCMT 070202EN-M25	7.75	6.35	2.38	2.8	0.2	10 pcs.	101
DCMT 070204EN-M25	7.75	6.35	2.38	2.8	0.4	10 pcs.	102
DCMT 070204EN-M55	7.75	6.35	2.38	2.8	0.4	10 pcs.	103
DCMT 070208EN-M55	7.75	6.35	2.38	2.8	0.8	10 pcs.	104
DCMT 11T302EN-M25	11.60	9.52	3.97	4.4	0.2	10 pcs.	105
DCMT 11T304EN-M25	11.60	9.52	3.97	4.4	0.4	10 pcs.	106
DCMT 11T304EN-M55	11.60	9.52	3.97	4.4	0.4	10 pcs.	107
DCMT 11T308EN-M25	11.60	9.52	3.97	4.4	0.8	10 pcs.	108
DCMT 11T308EN-M55	11.60	9.52	3.97	4.4	0.8	10 pcs.	109

19608 201-206
Applications
For machining steels and cast iron.



19608 201-206

- SF

- SM

- SMF

Applications							PK
Cemented carbide type							CTCP125
Coating							CVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19608 ...
DCMT 11T304EN-SF	11.6	9.52	3.97	4.4	0.4	10 pcs.	201
DCMT 11T304EN-SM	11.6	9.52	3.97	4.4	0.4	10 pcs.	202
DCMT 11T304EN-SMF	11.6	9.52	3.97	4.4	0.4	10 pcs.	203
DCMT 11T308EN-SF	11.6	9.52	3.97	4.4	0.8	10 pcs.	204
DCMT 11T308EN-SM	11.6	9.52	3.97	4.4	0.8	10 pcs.	205
DCMT 11T308EN-SMF	11.6	9.52	3.97	4.4	0.8	10 pcs.	206

18564 Indexable inserts DCGT

ALU

ATORN®

Design
- Positive 7°
- 55° tip angle
- Clamping depth approx. 0.2–4.0 mm for aluminium and non-ferrous metals

18564 101-108
Design
- Extremely positive, ground chip breaker for finishing stainless steels, special alloys and steel
- Extremely low cutting forces, excellent chip breaking with very high degrees of hardness and wear resistance

18564 200-208
Design
- Very positive chip breaker for finishing stainless steels, special alloys and steel
- Very low cutting forces, good chip breaking with medium hardness and wear resistance

18564 301-305
Design
- Polished chip breaker for reducing built-up edge formation when machining aluminium

Applications
For turning aluminium and other non-ferrous metals.

18564 401-405
Applications
For turning aluminium and other non-ferrous metals.
For finishing stainless materials.

18564 101-108 | 18564 200-208 | 18564 301-305 | 18564 401-405

Applications					P K S	P K S	N	N M
Cemented carbide grade					HC 7810	HC 7820	HW 6310	HC 6310
Coating					coated	coated	uncoated	coated
ISO Designation	Clamping depth approx. mm	Thickness mm	r mm		18564 ...	18564 ...	18564 ...	18564 ...
DCGT 070101-FU1	0.1–1.5	2.38	0.1	10 pcs.		200 NEW		
DCGT 070202-FU1	0.2–2.0	2.38	0.2	10 pcs.	101 NEW	201 NEW		
DCGT 070202-MN	0.2–1.5	2.38	0.2	10 pcs.			301	401
DCGT 070204-FU1	0.2–2.5	2.38	0.4	10 pcs.	102 NEW	202 NEW		
DCGT 070204-MN	0.3–1.8	2.38	0.4	10 pcs.			302	402
DCGT 11T301-FU1	0.1–1.5	3.97	0.1	10 pcs.		205 NEW		
DCGT 11T302-FU1	0.2–2.0	3.97	0.2	10 pcs.	106 NEW	206 NEW		
DCGT 11T302-MN	0.2–2.0	3.97	0.2	10 pcs.			303	403
DCGT 11T304-FU1	0.2–2.5	3.97	0.4	10 pcs.	107 NEW	207 NEW		
DCGT 11T304-MN	0.3–2.5	3.97	0.4	10 pcs.			304	404
DCGT 11T308-FU1	0.3–3.0	3.97	0.8	10 pcs.	108 NEW	208 NEW		
DCGT 11T308-MN	0.5–3.0	3.97	0.8	10 pcs.			305	405

19607 Indexable insert DCGT

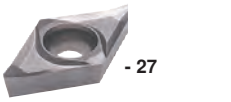
CUTTING SOLUTIONS BY CERATIZIT

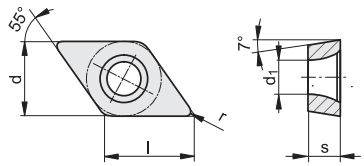
Design
- Positive 7°
- 55° tip angle
- Polished indexable insert for reducing built-up edge formation

19607 101-105
Applications
For machining aluminium and non-ferrous metals.

19607 201-304
Applications
Coated grade for machining aluminium and stainless and acid-resistant materials.

19607





Applications							N	N M	N M
Cemented carbide grade							H10T	AMZ	AMZ
Coating							uncoated	PVD	PVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19607 ...	19607 ...	19607 ...
DCGT 070202FN-27	7.75	6.35	2.38	2.8	0.2	10 pcs.	101	201	
DCGT 070202FN-25P	7.75	6.35	2.38	2.8	0.2	10 pcs.			301
DCGT 070204FN-27	7.75	6.35	2.38	2.8	0.4	10 pcs.	102	202	
DCGT 070204FN-25P	7.75	6.35	2.38	2.8	0.4	10 pcs.			302
DCGT 11T302FN-27	11.60	9.52	3.97	4.4	0.2	10 pcs.	103	203	
DCGT 11T304FN-25P	11.60	9.52	3.97	4.4	0.4	10 pcs.			303
DCGT 11T304FN-27	11.60	9.52	3.97	4.4	0.4	10 pcs.	104	204	
DCGT 11T308FN-27	11.60	9.52	3.97	4.4	0.8	10 pcs.	105	205	
DCGT 11T308FN-25P	11.60	9.52	3.97	4.4	0.8	10 pcs.			304

Lathe tools

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18566 Indexable inserts DNMG

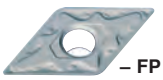
ATORN®

Design
Negative 0°, 55° tip angle.

DNMG .....-FP
DNMG .....-FM
Applications
For finishing.

DNMG .....-MP
DNMG .....-MM
Applications
For mid-range machining.

DNMG .....-RP5
DNMG .....-RM
Applications
For roughing.


– FP

– FM

18566

– MP
– MM

– RP5

– RM

Applications					P K	P K	P	M	M	M
Cemented carbide grade					HC 7610	HC 7620	HC 7630	HC 7510	HC 7520	HC 7530
Coating					coated	coated	coated	coated	coated	coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18566 ...	18566 ...	18566 ...	18566 ...	18566 ...	18566 ...
DNMG 110408-FP	0.2–2.0	4.76	0.8	10 pcs.		202				
DNMG 150604-FP	0.1–1.5	6.35	0.4	10 pcs.		203				
DNMG 110408-FM	0.4–1.5	4.76	0.8	10 pcs.				506		
DNMG 150604-FM	0.2–1.0	6.35	0.4	10 pcs.				507	607	
DNMG 110404-MP	0.5–4.0	4.76	0.4	10 pcs.		210	410			
DNMG 110408-MP	0.6–4.0	4.76	0.8	10 pcs.		211				
DNMG 150604-MP	0.5–4.0	6.35	0.4	10 pcs.		212	412			
DNMG 150608-MP	0.6–5.0	6.35	0.8	10 pcs.		213	413			
DNMG 150604-MM	0.5–4.0	6.35	0.4	10 pcs.					615	715
DNMG 150608-MM	0.6–5.0	6.35	0.8	10 pcs.					616	
DNMG 150608-RP5	1.0–5.0	6.35	0.8	10 pcs.	120 NEW	220	420			
DNMG 150612-RP5	1.0–6.0	6.35	1.2	10 pcs.		221				
DNMG 150608-RM	1.2–4.0	6.35	0.8	10 pcs.					620	

18567 Indexable inserts DNMG

ATORN®

NEW

- MM

18567

Applications					P M S
Cemented carbide grade					HC 7820
Coating					coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18567 ...
DNMG 110404-MM	0.5–2.0	4.76	0.4	10 pcs.	213
DNMG 110408-MM	0.8–3.0	4.76	0.8	10 pcs.	214
DNMG 150608-MM	0.8–3.0	6.35	0.8	10 pcs.	216

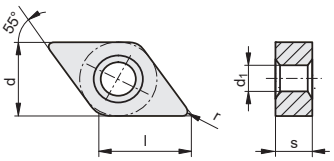
19610 Indexable insert DNMG

CUTTING SOLUTIONS BY CERATIZIT

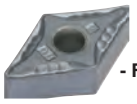
Design
- Negative 0°
- 55° tip angle

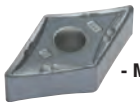
19610 101-110
Applications
For machining steels, as well as stainless and acid-resistant materials.

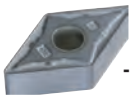
19610 201-202
Applications
For machining difficult materials such as titanium and titanium alloys, creep-resistant and highly creep-resistant materials.

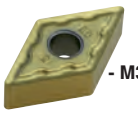


19610 101-202


- F30

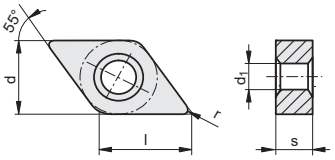

- M30


- M60


- M34

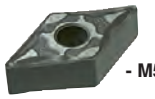
Applications							PM	S
Cemented carbide grade							CTPM125	CTP5115
Coating							PVD	PVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19610 ...	19610 ...
DNMG 110404EN-F30	11.6	9.52	4.76	3.81	0.4	10 pcs.	101	
DNMG 110408EN-F30	11.6	9.52	4.76	3.81	0.8	10 pcs.	102	
DNMG 150604EN-F30	15.5	12.70	6.35	5.16	0.4	10 pcs.	103	
DNMG 150608EN-F30	15.5	12.70	6.35	5.16	0.8	10 pcs.	104	
DNMG 110408EN-M30	11.6	9.52	4.76	3.81	0.8	10 pcs.	105	
DNMG 110412EN-M30	11.6	9.52	4.76	3.81	1.2	10 pcs.	106	
DNMG 150608EN-M30	15.5	12.70	6.35	5.16	0.8	10 pcs.	107	
DNMG 150612EN-M30	15.5	12.70	6.35	5.16	1.2	10 pcs.	108	
DNMG 150608EN-M60	15.5	12.70	6.35	5.16	0.8	10 pcs.	109	
DNMG 150612EN-M60	15.5	12.70	6.35	5.16	1.2	10 pcs.	110	
DNMG 150608EN-M34	15.5	12.70	6.35	5.16	0.8	10 pcs.		201
DNMG 150612EN-M34	15.5	12.70	6.35	5.16	1.2	10 pcs.		202

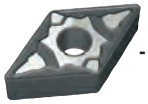
19610 301-310
Applications
For machining steels and cast iron.



19610 301-310

- F50


- M50


- M70

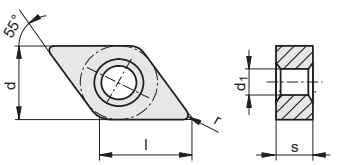
Applications							PK
Cemented carbide type							CTCP125
Coating							CVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19610 ...
DNMG 110404EN-F50	11.6	9.52	4.76	3.81	0.4	10 pcs.	301
DNMG 110404EN-M50	11.6	9.52	4.76	3.81	0.4	10 pcs.	302
DNMG 110408EN-M50	11.6	9.52	4.76	3.81	0.8	10 pcs.	303
DNMG 150604EN-F50	15.5	12.70	6.35	5.16	0.4	10 pcs.	304
DNMG 150604EN-M50	15.5	12.70	6.35	5.16	0.4	10 pcs.	305
DNMG 150608EN-M50	15.5	12.70	6.35	5.16	0.8	10 pcs.	307
DNMG 150612EN-M50	15.5	12.70	6.35	5.16	1.2	10 pcs.	308
DNMG 110412EN-M70	11.6	9.52	4.76	3.81	1.2	10 pcs.	309
DNMG 150608EN-M70	15.5	12.70	6.35	5.16	0.8	10 pcs.	310

19611 Indexable inserts DNMM

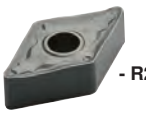
CUTTING SOLUTIONS BY CERATIZIT

Design
- Negative 0°
- 55° tip angle

Applications
For machining steels and cast iron.



19611


- R28

- R58

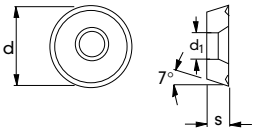
Applications							PK
Cemented carbide type							CTCP125
Coating							CVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19611 ...
DNMM 150612EN-R28	15.5	12.7	6.35	5.16	1.2	10 pcs.	101
DNMM 150616EN-R28	15.5	12.7	6.35	5.16	1.6	10 pcs.	102
DNMM 150612EN-R58	15.5	12.7	6.35	5.16	1.2	10 pcs.	103
DNMM 150616EN-R58	15.5	12.7	6.35	5.16	1.6	10 pcs.	104

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18570 Indexable insert RCGT

ALU

Design
Positive 7°, with sintered chip breaker. Designed specifically for aluminium alloys, extremely profiled chip breakers, optimally sharp-edged tip, precision-ground version, excellent surface.

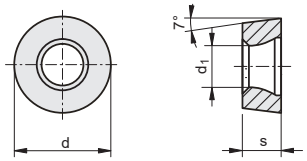


18570

Applications					N	
Cemented carbide grade					H 25	
Coating					uncoated	
ISO designation	**d mm**	**s mm**	**d_1 mm**		18570	...
RCGT 0803 MO-2	8.0	3.18	3.4	10 pcs.		101

18572 Indexable inserts RCMT

Design
Positive 7°, with sintered chip breaker.



18572

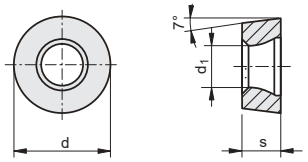
Applications					P M K	
Cemented carbide grade					H 42	
Coating					coated	
ISO designation	**d mm**	**s mm**	**d_1 mm**		18572	...
RCMT 0602 MO	6	2.38	2.8	10 pcs.		210
RCMT 0803 MO	8	3.18	3.4	10 pcs.		220
RCMT 10T3 MO	10	3.97	4.4	10 pcs.		230

19625 Indexable insert RCMT

CUTTING SOLUTIONS BY CERATIZIT

Design
- Positive 7°

Applications
For machining steels and cast iron.

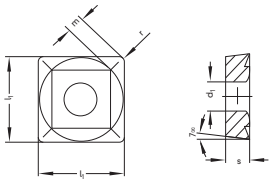


19625

Applications					P K	
Cemented carbide type					CTCP125	
Coating					CVD	
ISO designation	**d mm**	**s mm**	**d_1 mm**		19625	...
RCMT 1003MOSN-SM	10	3.18	4.0	10 pcs.		101
RCMT 1204MOSN-SM	12	4.76	4.9	10 pcs.		102
RCMT 1606MOSN-SM	16	6.35	5.3	10 pcs.		103
RCMT 2006MOSN-SM	20	6.35	6.5	10 pcs.		104

18578 Indexable insert SCMT

Design
- Positive 7°
- 90° tip angle
- With sintered chip breaker



18578

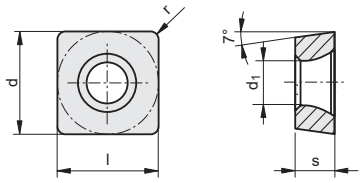
Applications
Cemented carbide grade
Coating

ISO designation	l_1 mm	s mm	r mm	d_1 mm		P M K H 42 coated 18578 ...	P K HC 7620 coated 18578 ...
SCMT 060204	6.30	2.38	0.4	2.8	10 pcs.	211	
SCMT 09T308-MP	9.52	3.97	0.8	4.4	10 pcs.		221
SCMT 120408-MT	12.70	4.76	0.8	5.5	10 pcs.	231	

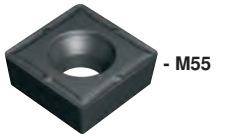
19612 Indexable insert SCMT

CUTTING SOLUTIONS BY CERATIZIT

Design
- Positive 7°
- 90° tip angle



19612 101-102

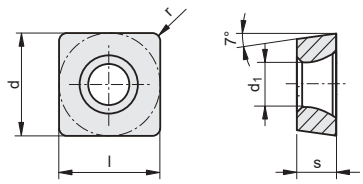


19612 101-102
Applications
For machining steels, as well as stainless and acid-resistant materials.

Applications
Cemented carbide type
Coating

ISO designation	l mm	d mm	s mm	d_1 mm	r mm		P M CTPM125 PVD 19612 ...
SCMT 09T308EN-M55	9.52	9.52	3.97	4.4	0.8	10 pcs.	101
SCMT 120408EN-M55	12.70	12.70	4.76	5.5	0.8	10 pcs.	102

19612 201-207
Applications
For machining steels and cast iron.



19612 201-207

Applications
Cemented carbide type
Coating

ISO designation	l mm	d mm	s mm	d_1 mm	r mm		P K CTCP125 CVD 19612 ...
SCMT 09T304EN-SF	9.52	9.52	3.97	4.4	0.4	10 pcs.	201
SCMT 09T304EN-SM	9.52	9.52	3.97	4.4	0.4	10 pcs.	202
SCMT 09T308EN-SF	9.52	9.52	3.97	4.4	0.8	10 pcs.	203
SCMT 09T308EN-SM	9.52	9.52	3.97	4.4	0.8	10 pcs.	204
SCMT 120408EN-SF	12.70	12.70	4.76	5.5	0.8	10 pcs.	205
SCMT 120408EN-SM	12.70	12.70	4.76	5.5	0.8	10 pcs.	206
SCMT 120412EN-SM	12.70	12.70	4.76	5.5	1.2	10 pcs.	207

18582 Indexable inserts SNMG

ATORN®

Design
- Negative 0°
- 90° tip angle

SNMG.....-MP
Applications
For mid-range machining.

SNMG.....-RP
Applications
For roughing.

18582

Applications
Cemented carbide grade
Coating

ISO designation	Clamping depth approx. mm	Thickness mm	r mm		P K HC 7620 coated 18582 ...	P HC 7630 coated 18582 ...
SNMG 120408-MP	0.6–5.0	4.76	0.8	10 pcs.	302	402
SNMG 120412-MP	1.0–5.0	4.76	1.2	10 pcs.		403
SNMG 120408-RP	1.0–6.0	4.76	0.8	10 pcs.	306	406

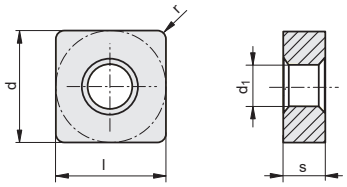
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

19613 Indexable inserts SNMG

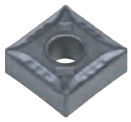
CUTTING SOLUTIONS BY CERATIZIT

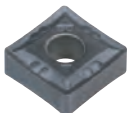
Design
- Negative 0°
- 90° tip angle

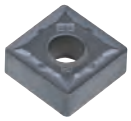
19613 101-107
Applications
For machining steels, as well as stainless and acid-resistant materials.



19613 101-107


- F30

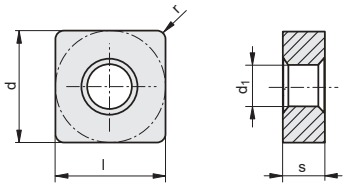

- M30

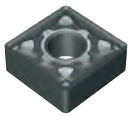

- M60

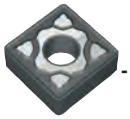
Applications							P M
Cemented carbide type							CTPM125
Coating							PVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19613 ...
SNMG 120404EN-F30	12.7	12.7	4.76	5.16	0.4	10 pcs.	101
SNMG 120408EN-F30	12.7	12.7	4.76	5.16	0.8	10 pcs.	102
SNMG 120408EN-M30	12.7	12.7	4.76	5.16	0.8	10 pcs.	103
SNMG 120408EN-M60	12.7	12.7	4.76	5.16	0.8	10 pcs.	104
SNMG 120412EN-M30	12.7	12.7	4.76	5.16	1.2	10 pcs.	105
SNMG 120412EN-M60	12.7	12.7	4.76	5.16	1.2	10 pcs.	106
SNMG 120416EN-M60	12.7	12.7	4.76	5.16	1.6	10 pcs.	107

19613 201-203
Applications
For machining steels and cast iron.

19613 201-203




- M50


- M70

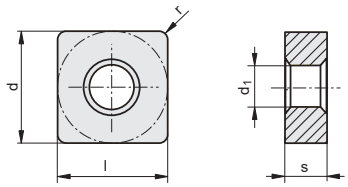
Applications							P K
Cemented carbide type							CTCP125
Coating							CVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19613 ...
SNMG 120408EN-M50	12.7	12.7	4.76	5.16	0.8	10 pcs.	201
SNMG 120412EN-M50	12.7	12.7	4.76	5.16	1.2	10 pcs.	202
SNMG 120408EN-M70	12.7	12.7	4.76	5.16	0.8	10 pcs.	203

19614 Indexable inserts SNMM

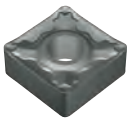
CUTTING SOLUTIONS BY CERATIZIT

Design
- Negative 0°
- 90° tip angle
- Roughing insert on one side for extreme operations

Applications
For machining steels and cast iron.



19614

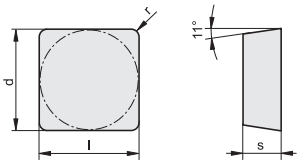

- R28

- R58

Applications							P K
Cemented carbide type							CTCP125
Coating							CVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19614 ...
SNMM 150612EN-R28	15.88	15.88	6.35	6.35	1.2	10 pcs.	101
SNMM 150616EN-R28	15.88	15.88	6.35	6.35	1.6	10 pcs.	102
SNMM 150612EN-R58	15.88	15.88	6.35	6.35	1.2	10 pcs.	103
SNMM 150616EN-R58	15.88	15.88	6.35	6.35	1.6	10 pcs.	104

18590 Indexable inserts SPUN

Design
- Positive 11°
- 90° tip angle
- Without chip breaker



18590

Applications Cemented carbide grade Coating					P M H 12 uncoated		P M K H 42 uncoated	
ISO designation	d+l mm	s mm	r mm		18590	...	18590	...
SPUN 120308	12.7	3.18	0.8	10 pcs.		316		320

18593 Indexable inserts TCGT

ALU

Design
Positive 7°, 60° tip angle. Clamping depth approx. 0.2–6.0 mm for aluminium and non-ferrous metals.

Applications
For turning aluminium and other non-ferrous metals.
For finishing stainless materials.

18593

Applications Cemented carbide grade Coating					N M HC 6310 coated	
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18593	...
TCGT 110204-MN	0.3–1.8	2.38	0.4	10 pcs.		202

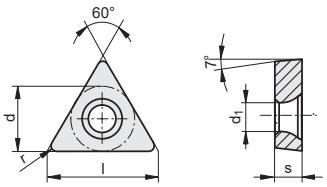
19615 Indexable insert TCGT

CUTTING SOLUTIONS BY CERATIZIT

Design
- Positive 7°
- 60° tip angle
- Polished indexable insert for reducing built-up edge formation

19615 101-103
Applications
For machining aluminium and non-ferrous metals.

19615 202-203
Applications
Coated grade for machining aluminium and stainless and acid-resistant materials.



19615

Applications Cemented carbide grade Coating							N H10T uncoated		N M AMZ PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19615	...	19615	...
TCGT 110202FN-27	11.0	6.35	2.38	2.8	0.2	10 pcs.		101		
TCGT 110204FN-27	11.0	6.35	2.38	2.8	0.4	10 pcs.		102		202
TCGT 16T308FN-27	16.5	9.52	3.97	4.4	0.8	10 pcs.		103		203

18594 Indexable inserts TCMT

Design
- Positive 7°
- 60° tip angle

Applications
For mid-range machining.

18594

Applications Cemented carbide grade Coating					P K HC 7620 coated		P HC 7630 coated		M HC 7520 coated		M HC 7530 coated	
ISO Designation	Clamping depth approx. mm	Thickness mm	r mm		18594	...	18594	...	18594	...	18594	...
TCMT 110204-MP	0.4–3.0	2.38	0.4	10 pcs.				302		402		502
TCMT 16T304-MP	0.4–3.0	3.97	0.4	10 pcs.		104		304		404		
TCMT 16T308-MP	0.6–4.0	3.97	0.8	10 pcs.		105		305				505

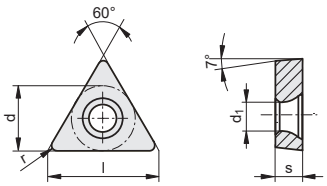
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

19616 Indexable insert TCMT

CUTTING SOLUTIONS BY CERATIZIT

Design
- Positive 7°
- 60° tip angle

19616 101-106
Applications
For machining steels, as well as stainless and acid-resistant materials.



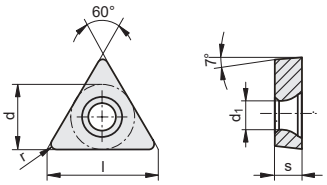
19616 101-106

- M55

- M25

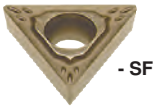
Applications							PM
Cemented carbide type							CTPM125
Coating							PVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19616 ...
TCMT 090204EN-M55	9.6	5.56	2.38	2.5	0.4	10 pcs.	101
TCMT 110204EN-M25	11.0	6.35	2.38	2.8	0.4	10 pcs.	102
TCMT 110204EN-M55	11.0	6.35	2.38	2.8	0.4	10 pcs.	103
TCMT 16T304EN-M25	16.5	9.52	3.97	4.4	0.4	10 pcs.	104
TCMT 16T308EN-M25	16.5	9.52	3.97	4.4	0.8	10 pcs.	105
TCMT 16T308EN-M55	16.5	9.52	3.97	4.4	0.8	10 pcs.	106

19616 201-208
Applications
For machining steels and cast iron.



19616 201-208

- SM


- SF

Applications							PK
Cemented carbide type							CTCP125
Coating							CVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19616 ...
TCMT 090204EN-SM	9.6	5.56	2.38	2.5	0.4	10 pcs.	201
TCMT 110204EN-SF	11.0	6.35	2.38	2.8	0.4	10 pcs.	202
TCMT 110204EN-SM	11.0	6.35	2.38	2.8	0.4	10 pcs.	203
TCMT 110208EN-SF	11.0	6.35	2.38	2.8	0.8	10 pcs.	204
TCMT 16T304EN-SF	16.5	9.52	3.97	4.4	0.4	10 pcs.	205
TCMT 16T304EN-SM	16.5	9.52	3.97	4.4	0.4	10 pcs.	206
TCMT 16T308EN-SF	16.5	9.52	3.97	4.4	0.8	10 pcs.	207
TCMT 16T308EN-SM	16.5	9.52	3.97	4.4	0.8	10 pcs.	208

18598 Indexable inserts TNMG

ATORN®

Design
Negative 0°, 60° tip angle.

TNMG .....-FP
Applications
For finishing.

TNMG .....-MP
TNMG .....-MM
Applications
For mid-range machining.

TNMG .....-RP
Applications
For roughing.

18598

– FP

– MP
– MM

– RP

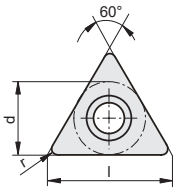
Applications					PK	M	M
Cemented carbide grade					HC 7620	HC 7520	HC 7530
Coating					coated	coated	coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18598 ...	18598 ...	18598 ...
TNMG 160404-FP	0.1–1.5	4.76	0.4	10 pcs.	402		
TNMG 160404-MP	0.5–4.0	4.76	0.4	10 pcs.	410		
TNMG 160408-MP	0.6–4.0	4.76	0.8	10 pcs.	411		
TNMG 160408-MM	0.6–4.0	4.76	0.8	10 pcs.		714	814
TNMG 160408-RP	1.0–5.0	4.76	0.8	10 pcs.	415		
TNMG 160412-RP	1.0–5.0	4.76	1.2	10 pcs.	416		

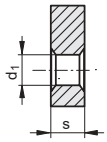
19618 Indexable insert TNMG

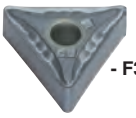
CUTTING SOLUTIONS BY CERATIZIT

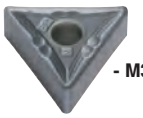
Design
- Negative 0°
- 60° tip angle

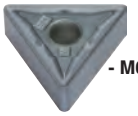
19618 101-106
Applications
For machining steels, as well as stainless and acid-resistant materials.






- F30

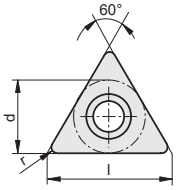

- M30

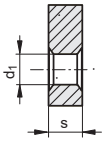

- M60

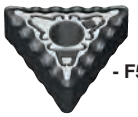
19618 101-106

Applications							PM	
Cemented carbide type							CTPM125	
Coating							PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19618	...
TNMG 160404EN-F30	16.5	9.52	4.76	3.81	0.4	10 pcs.		101
TNMG 160408EN-F30	16.5	9.52	4.76	3.81	0.8	10 pcs.		102
TNMG 160408EN-M30	16.5	9.52	4.76	3.81	0.8	10 pcs.		103
TNMG 160412EN-M30	16.5	9.52	4.76	3.81	1.2	10 pcs.		104
TNMG 160408EN-M60	16.5	9.52	4.76	3.81	0.8	10 pcs.		105
TNMG 160412EN-M60	16.5	9.52	4.76	3.81	1.2	10 pcs.		106

19618 202-209
Applications
For machining steels and cast iron.






- F50

- M50

- M70

19618 202-209

Applications							PK		
Cemented carbide type							CTCP125		
Coating							CVD		
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19618	...	
TNMG 160404EN-F50	16.5	9.52	4.76	3.81	0.4	10 pcs.		208	NEW
TNMG 160404EN-M50	16.5	9.52	4.76	3.81	0.4	10 pcs.		202	
TNMG 160408EN-F50	16.5	9.52	4.76	3.81	0.8	10 pcs.		209	NEW
TNMG 160408EN-M50	16.5	9.52	4.76	3.81	0.8	10 pcs.		204	
TNMG 160412EN-M50	16.5	9.52	4.76	3.81	1.2	10 pcs.		205	
TNMG 220408EN-M70	22.0	12.70	4.76	5.16	0.8	10 pcs.		206	
TNMG 220412EN-M70	22.0	12.70	4.76	5.16	1.2	10 pcs.		207	

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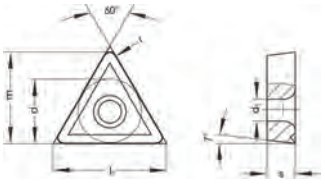
18603 Indexable inserts TPMR

Design
Positive 11°, 60° tip angle, with sintered chip breaker.



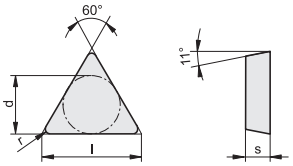
18603

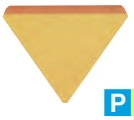
Applications
Cemented carbide grade
Coating

ISO designation	l_1 mm	s mm	r mm	d mm		P M K H 42 coated 18603 ...
TPMR 160304	16.5	3.18	0.4	9.52	10 pcs.	210
TPMR 160308	16.5	3.18	0.8	9.52	10 pcs.	220

18607 Indexable inserts TPUN

Design
Positive 11°, 60° tip angle, without chip breaker.





18607

Applications
Cemented carbide grade
Coating

ISO designation	l mm	s mm	r mm	d mm		P M K H 42 coated 18607 ...
TPUN 160304	16.5	3.18	0.4	9.52	10 pcs.	230

18611 Indexable inserts VCGT

ALU

ATORN®

Design
- Positive 7°
- 35° tip angle
- Clamping depth approx. 0.2–6.0 mm for aluminium and non-ferrous metals

18611 095-105
Design
Polished chip breaker for reducing built-up edge formation when machining aluminium.
Applications
For turning aluminium and other non-ferrous metals.

18611 301-305
Applications
For turning aluminium and other non-ferrous metals.
For finishing stainless materials.

18611 201-204 | 18611 400-404 | 18611 095-105 | 18611 301-305

Applications
Cemented carbide grade
Coating

ISO Designation	Clamping depth approx. mm	Thickness mm	r mm		P K HC 7810 coated 18611 ...	P K HC 7820 coated 18611 ...	N HW 6310 uncoated 18611 ...	N M HC 6310 coated 18611 ...
VCGT 070201-MN	0.1–1.5	2.38	0.1	10 pcs.			095	
VCGT 070202-MN	0.1–1.5	2.38	0.2	10 pcs.			096	
VCGT 070204-MN	0.1–1.5	2.38	0.4	10 pcs.			097	
VCGT 110301-FU1	0.1–1.5	3.18	0.1	10 pcs.		400 NEW		
VCGT 110302-FU1	0.2–2.0	3.18	0.2	10 pcs.	201 NEW	401 NEW		
VCGT 110302-MN	0.2–1.5	3.18	0.2	10 pcs.			101	301
VCGT 110304-FU1	0.2–2.5	3.18	0.4	10 pcs.	202 NEW	402 NEW		
VCGT 110304-MN	0.3–1.8	3.18	0.4	10 pcs.			102	302
VCGT 160402-FU1	0.2–2.0	4.76	0.2	10 pcs.	203 NEW	403 NEW		
VCGT 160404-FU1	0.2–2.5	4.76	0.4	10 pcs.	204 NEW	404 NEW		
VCGT 160404-MN	0.3–2.5	4.76	0.4	10 pcs.			104	304
VCGT 160408-MN	0.5–3.0	4.76	0.8	10 pcs.			105	305

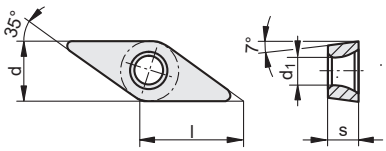
19620 Indexable insert VCGT

CUTTING SOLUTIONS BY CERATIZIT

Design
- Positive 7°
- 35° tip angle
- Polished indexable insert for reducing built-up edge formation

19620 101-105
Applications
For machining aluminium and non-ferrous metals.

19620 201-204
Applications
Coated grade for machining aluminium and stainless and acid-resistant materials.



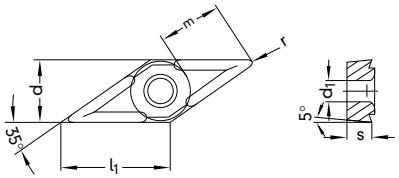
19620

Applications							N		NM	
Cemented carbide grade							H10T		AMZ	
Coating							uncoated		PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19620	...	19620	...
VCGT 110302FN-27	11.1	6.35	3.18	2.9	0.2	10 pcs.		101		201
VCGT 110304FN-27	11.1	6.35	3.18	2.9	0.4	10 pcs.		102		202
VCGT 160404FN-27	16.6	9.52	4.76	4.4	0.4	10 pcs.		103		203
VCGT 160408FN-27	16.6	9.52	4.76	4.4	0.8	10 pcs.		104		204
VCGT 160412FN-27	16.6	9.52	4.76	4.4	1.2	10 pcs.		105		

18612 Indexable inserts VBGT

ALU

Design
- Positive 5°
- 35° tip angle
- With sintered chip breaker
- Designed specifically for aluminium alloys
- Extremely profiled chip breaker
- Optimally sharp-edged tip
- Precision-ground version
- Excellent surface



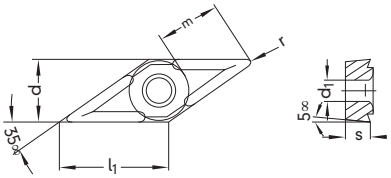
18612

Applications							N	
Cemented carbide grade							H 25	
Coating							uncoated	
ISO designation	l_1 mm	s mm	r mm	d mm	d_1 mm		18612	...
VBGT 160404-2	16.6	4.76	0.4	9.52	4.4	10 pcs.		101

18614 Indexable inserts VBMT

ATORN®

Design
- Positive 5°
- 35° tip angle
- With sintered chip breaker



18614

– SP
– SM

Applications							PM		PK		M	
Cemented carbide grade							H 05		HC 7620		HC 7520	
Coating							uncoated		coated		coated	
ISO designation	l_1 mm	s mm	r mm	d mm	d_1 mm		18614	...	18614	...	18614	...
VBMT 160404	16.6	4.76	0.4	9.52	4.4	10 pcs.		304				
VBMT 160404-SP	16.6	4.76	0.4	9.52	4.4	10 pcs.				310		
VBMT 160408-SP	16.6	4.76	0.8	9.52	4.4	10 pcs.				320		
VBMT 160404-SM	16.6	4.76	0.4	9.52	4.4	10 pcs.						311
VBMT 160408-SM	16.6	4.76	0.8	9.52	4.4	10 pcs.						321

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18615 Indexable inserts VCMT

ATORN®

Design
- Positive 7°
- 35° tip angle

VCMT .....-FP + -FP1
Applications
For finishing.

VCMT .....-MP
Applications
For mid-range machining.

18615

– FP

FP1

– MP

Applications					PK		PK		PH		P		M		M	
Cemented carbide grade					HC 7610		HC 7620		HC 7625		HC 7630		HC 7520		HC 7530	
Coating					coated		coated		coated		coated		coated		coated	
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18615	...	18615	...	18615	...	18615	...	18615	...	18615	...
VCMT 070202-FP1	0.1–1.5	2.38	0.2	10 pcs.						095						
VCMT 070204-FP1	0.1–1.5	2.38	0.4	10 pcs.						096						
VCMT 110302-FP	0.1–1.0	3.18	0.2	10 pcs.		101		301						514 NEW		
VCMT 110304-FP	0.1–1.5	3.18	0.4	10 pcs.		102		302						515 NEW		
VCMT 160402-FP	0.1–1.0	4.76	0.2	10 pcs.		103		303						516 NEW		
VCMT 160404-FP	0.1–1.5	4.76	0.4	10 pcs.		104		304						517 NEW		
VCMT 160408-FP	0.1–1.5	4.76	0.8	10 pcs.										518 NEW		
VCMT 110304-MP	0.4–2.5	3.18	0.4	10 pcs.				310				410		510		610
VCMT 110308-MP	0.6–3.0	3.18	0.8	10 pcs.				311						511		
VCMT 160404-MP	0.4–2.5	4.76	0.4	10 pcs.				312				412		512		612
VCMT 160408-MP	0.6–3.0	4.76	0.8	10 pcs.				313				413				613

18616 Indexable insert VCMT

ATORN®

18616

NEW

- FM

Applications					PK
Cemented carbide grade					HC 7820
Coating					coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18616 ...
VCMT 110302-FM	0.1–1.0	3.18	0.2	10 pcs.	201
VCMT 110304-FM	0.1–1.5	3.18	0.4	10 pcs.	202
VCMT 160404-FM	0.1–1.5	4.76	0.4	10 pcs.	204
VCMT 160408-FM	0.1–1.5	4.76	0.8	10 pcs.	205

19621 Indexable inserts VCMT/VCGT

CUTTING SOLUTIONS BY CERATIZIT

Design
- Positive 7°
- 35° tip angle

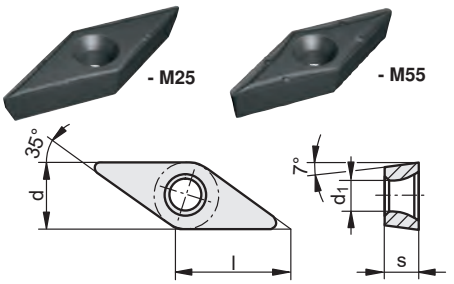
19621 101-103
Applications
For machining steels, as well as stainless and acid-resistant materials.

19621 201-208
Applications
For machining steels and cast iron.

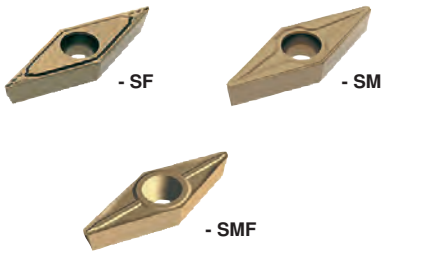
Applications							P M	
Cemented carbide type							CTPM125	
Coating							PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19621	...
VCMT 160404EN-M25	16.6	9.52	4.76	4.4	0.4	10 pcs.		101
VCMT 160404EN-M55	16.6	9.52	4.76	4.4	0.4	10 pcs.		102
VCMT 160408EN-M55	16.6	9.52	4.76	4.4	0.8	10 pcs.		103

Applications							P K	
Cemented carbide type							CTCP125	
Coating							CVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19621	...
VCGT 110304EN-SF	11.1	6.35	3.18	2.9	0.4	10 pcs.		201
VCGT 110308EN-SF	11.1	6.35	3.18	2.9	0.8	10 pcs.		202
VCMT 160404EN-SF	16.6	9.52	4.76	4.4	0.4	10 pcs.		203
VCMT 160404EN-SM	16.6	9.52	4.76	4.4	0.4	10 pcs.		204
VCMT 160404EN-SMF	16.6	9.52	4.76	4.4	0.4	10 pcs.		205
VCMT 160408EN-SF	16.6	9.52	4.76	4.4	0.8	10 pcs.		206
VCMT 160408EN-SM	16.6	9.52	4.76	4.4	0.8	10 pcs.		207
VCMT 160408EN-SMF	16.6	9.52	4.76	4.4	0.8	10 pcs.		208

19621 101-103



19621 201-208



19622 Indexable inserts VNMG

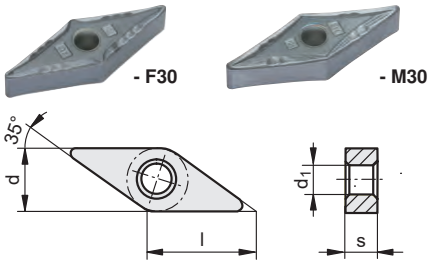
CUTTING SOLUTIONS BY CERATIZIT

Design
- Negative 0°
- 35° tip angle

19622 101-103
Applications
For machining steels, as well as stainless and acid-resistant materials.

Applications							P M	
Cemented carbide type							CTPM125	
Coating							PVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19622	...
VNMG 160404EN-F30	16.6	9.52	4.76	3.81	0.4	10 pcs.		101
VNMG 160408EN-F30	16.6	9.52	4.76	3.81	0.8	10 pcs.		102
VNMG 160408EN-M30	16.6	9.52	4.76	3.81	0.8	10 pcs.		103

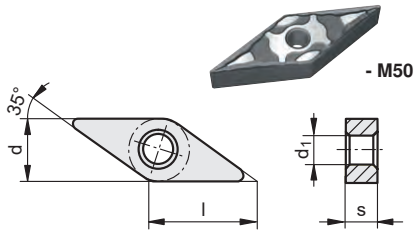
19622 101-103



19622 201-203
Applications
For machining steels and cast iron.

Applications							P K	
Cemented carbide type							CTCP125	
Coating							CVD	
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19622	...
VNMG 160404EN-M50	16.6	9.52	4.76	3.81	0.4	10 pcs.		201
VNMG 160408EN-M50	16.6	9.52	4.76	3.81	0.8	10 pcs.		202
VNMG 160412EN-M50	16.6	9.52	4.76	3.81	1.2	10 pcs.		203

19622 201-203

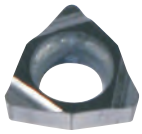


18619 Indexable inserts WCGT

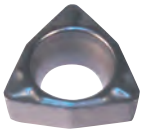
ATORN®

Applications			N		N	
Cemented carbide grade			HW 6315		HC 7625	
Coating			uncoated		uncoated	
ISO designation	r mm		18619	...	18619	...
WCGT 020101-MN	0.1	10 pcs.		101		
WCGT 020102-MN	0.2	10 pcs.		102		
WCGT 020104-MN	0.4	10 pcs.		103		
WCMT 020102	0.2	10 pcs.				201
WCMT 020104	0.4	10 pcs.				202

18619 101-103



18619 201-202



= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18620 Indexable inserts WNMG

ATORN®

Design
- Negative 0°
- 80° tip angle

WNMG .....-WP
Design
With WIPER cutting geometry (same surface quality with double feed, twice the surface quality with the same feed).

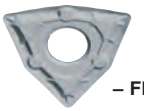
WNMG .....-FP
WNMG .....-FM
Applications
For finishing.

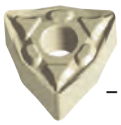
WNMG .....-MP
WNMG .....-MM
Applications
For mid-range machining.

WNMG .....-RP5
WNMG .....-RM
Applications
For roughing.

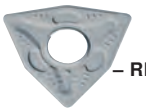
18620

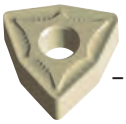
– WP


– FP


– FM

– MP
– MM


– RP5


– RM

Applications					P K	P K	P	M	M	M
Cemented carbide grade					HC 7610	HC 7620	HC 7630	HC 7510	HC 7520	HC 7530
Coating					coated	coated	coated	coated	coated	coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18620 ...	18620 ...	18620 ...	18620 ...	18620 ...	18620 ...
WNMG 080408-WP	0.8–3.0	4.76	0.8	10 pcs.		201				
WNMG 080412-WP	1.5–4.0	4.76	1.2	10 pcs.	102					
WNMG 080404-FP	0.1–1.5	4.76	0.4	10 pcs.		207				
WNMG 080408-FP	0.2–2.0	4.76	0.8	10 pcs.		208				
WNMG 060404-FM	0.2–1.0	4.76	0.4	10 pcs.				510		
WNMG 080404-FM	0.2–1.0	4.76	0.4	10 pcs.				512	612	
WNMG 060404-MP	0.5–4.0	4.76	0.4	10 pcs.		211				
WNMG 060408-MP	0.6–4.0	4.76	0.8	10 pcs.		212				
WNMG 080404-MP	0.5–4.0	4.76	0.4	10 pcs.		213	413			
WNMG 080408-MP	0.6–4.0	4.76	0.8	10 pcs.		214	414			
WNMG 080412-MP	1.0–6.0	4.76	1.2	10 pcs.		215				
WNMG 060404-MM	0.5–4.0	4.76	0.4	10 pcs.						720
WNMG 060408 MM	0.6–4.0	4.76	0.8	10 pcs.					621	721
WNMG 080408 MM	0.6–5.0	4.76	0.8	10 pcs.					622	722
WNMG 080408-RP5	1.0–6.0	4.76	0.8	10 pcs.	120 NEW	220	420			
WNMG 080412-RP5	1.0–6.0	4.76	1.2	10 pcs.		221				
WNMG 080408-RM	1.2–4.0	4.76	0.8	10 pcs.		625	725			

18621 Indexable inserts WNMG

ATORN®

18621

NEW

- MM

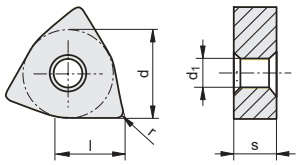
Applications					P M S	P M S
Cemented carbide grade					HC 7820	HC 7830
Coating					coated	coated
ISO designation	Clamping depth approx. mm	Thickness mm	r mm		18621 ...	18621 ...
WNMG 080404-MM	0.5–3.0	4.76	0.4	10 pcs.	221	321
WNMG 080408-MM	0.8–3.0	4.76	0.8	10 pcs.	222	322

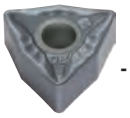
CUTTING SOLUTIONS BY CERATIZIT

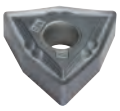
19623 101-112

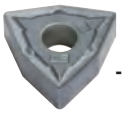
Design
- Negative 0°
- 80° tip angle

19623 101-112
Applications
For machining steels, as well as stainless and acid-resistant materials.




- F30

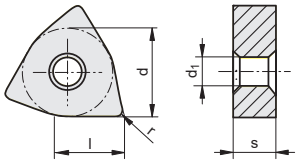

- M30

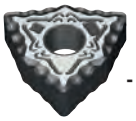

- M60

Applications							P M
Cemented carbide type							CTPM125
Coating							PVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19623 ...
WNMG 060404EN-F30	6.50	9.52	4.76	3.81	0.4	10 pcs.	101
WNMG 060408EN-F30	6.50	9.52	4.76	3.81	0.8	10 pcs.	102
WNMG 060408EN-M30	6.50	9.52	4.76	3.81	0.8	10 pcs.	103
WNMG 060408EN-M60	6.50	9.52	4.76	3.81	0.8	10 pcs.	104
WNMG 060412EN-M30	6.50	9.52	4.76	3.81	1.2	10 pcs.	105
WNMG 060412EN-M60	6.50	9.52	4.76	3.81	1.2	10 pcs.	106
WNMG 080404EN-F30	8.69	12.70	4.76	5.16	0.4	10 pcs.	107
WNMG 080408EN-F30	8.69	12.70	4.76	5.16	0.8	10 pcs.	108
WNMG 080408EN-M30	8.69	12.70	4.76	5.16	0.8	10 pcs.	109
WNMG 080412EN-M30	8.69	12.70	4.76	5.16	1.2	10 pcs.	110
WNMG 080408EN-M60	8.69	12.70	4.76	5.16	0.8	10 pcs.	111
WNMG 080412EN-M60	8.69	12.70	4.76	5.16	1.2	10 pcs.	112

19623 201-210
Applications
For machining steels and cast iron.

19623 201-210




- F50

- M50

- M70

Applications							P K
Cemented carbide type							CTCP125
Coating							CVD
ISO designation	l mm	d mm	s mm	d_1 mm	r mm		19623 ...
WNMG 060404EN-F50	6.50	9.52	4.76	3.81	0.4	10 pcs.	201
WNMG 060408EN-M50	6.50	9.52	4.76	3.81	0.8	10 pcs.	203
WNMG 060412EN-M50	6.50	9.52	4.76	3.81	1.2	10 pcs.	204
WNMG 080404EN-F50	8.69	12.70	4.76	5.16	0.4	10 pcs.	205
WNMG 080408EN-M50	8.69	12.70	4.76	5.16	0.8	10 pcs.	207
WNMG 080412EN-M50	8.69	12.70	4.76	5.16	1.2	10 pcs.	208
WNMG 080408EN-M70	8.69	12.70	4.76	5.16	0.8	10 pcs.	209
WNMG 080412EN-M70	8.69	12.70	4.76	5.16	1.2	10 pcs.	210

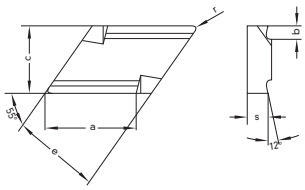
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18623 Indexable inserts KNUX

ATORN®

Design
- **Negative 0°**
- **55°** tip angle
- With sintered chip breaker

18623



Applications							P M K	
Cemented carbide grade							HC 6640	
Coating							coated	
ISO designation	**a mm**	**s mm**	**r mm**	**b mm**	**e mm**		**18623**	**...**
KNUX 160405R-11	16	4.76	0.5	2.2	9.52	10 pcs.		**210**
KNUX 160405L-11	16	4.76	0.5	2.2	9.52	10 pcs.		**220**
KNUX 160410R-12	16	4.76	1.0	3.2	9.52	10 pcs.		**230**
KNUX 160410L-12	16	4.76	1.0	3.2	9.52	10 pcs.		**240**

18626 - 18629 Indexable inserts (negative)

ALU

HW

Design
- Excellent chip control, surfaces, toughness and wear characteristics
- Twice the number of cutting edges per indexable insert

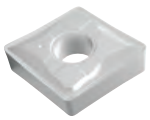
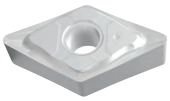
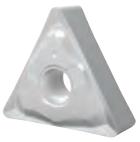
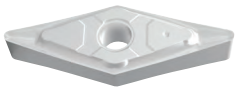
Applications
Up to approx. 5 mm clamping depth. In standard clamp holders.

18626
- **Negative**
- **80°** tip angle

18627
- **Negative**
- **55°** tip angle

18628
- Triangular
- **Negative**

18629
- **Negative**
- **35°** tip angle

	18626		18627		18628		18629	
								
Applications	N		N		N		N	
Cemented carbide grade	LT 05		LT 05		LT 05		LT 05	
Coating	coated		coated		coated		coated	
ISO designation	**18626**	**...**	**18627**	**...**	**18628**	**...**	**18629**	**...**
CNGG 120404-AL		**101**						
CNGG 120408-ALU		**102**						
DNGG 110404-AL				**101**				
DNGG 110408-AL				**102**				
TNGG 160404-AL						**101**		
VNGG 160404-AL								**101**
VNGG 160408-AL								**102**

Info — 18638 - 18646 Ceramic inserts for turning (H 77) cast iron and hardened steels

- For hard fine turning of steels up to 58 HRC
- For finishing of GG + GGG
- Main application of GG + GGG

Advantage:
- Complex grinding is not necessary

Areas of application of H 77

- For industrial applications in hard fine turning of hardened steel workpieces such as gears, bevel drive gears, drive shafts, pinions and selector sleeves. In these applications, hardened steels with a hardness of up to 58 HRC are usually machined, where hard fine turning replaces grinding of the workpieces.
- For finishing and fine finishing when turning and milling workpieces made of GG and GGG, where close dimensional and form tolerances and high surface qualities are required.

Cutting data recommendations for simple and fine turning with H 77

Grey cast iron with scaled graphite GG

Operation	Hardness HB	Cutting speed v_c (m/min)		Cutting depth a_p (mm)	Feed rate f (mm/U)
		Reference value	Total area		
Finishing	140-210	800	400-1200	0.31-1.0	0.20-0.60
	220-240	600	300-800		
	250-280	400	150-500		
Fine finishing	140-240	550	300-650	0.2-0.5	0.08-0.25
	240-280	400	150-500		

Cast iron with nodular graphite GGG

Operation	Tensile strength R_m (N/mm²)	Cutting speed v_c (m/min)		Cutting depth a_p (mm)	Feed rate f (mm/U)
		Reference value	Total area		
Finishing	400-600	400	250-600	0.30-1.0	0.20-0.40
	700	350	150-400		
Fine finishing	400-600	400	250-600	0.25-0.5	0.08-0.20
	700	350	150-400		

Cutting data recommendations for simple and fine milling with H 77

Grey cast iron and black malleable cast iron with multi-tooth milling cutters

Operation	Hardness HB	Cutting speed v_c (m/min)		Cutting depth a_p (mm)	Feed rate f (mm/U)			
		Reference value	Total area		Reference value	Total area for setting angle K		
						45°	75°	80/90°
Finishing	190-210	700	200-900	0.5-1.0	0.12	0.10-0.20	0.10-0.15	0.08-0.15
	220-240	500	200-700					
	250-280	400	200-500					
Fine finishing	190-210	700	200-900	0.1-0.5	0.10	0.08-0.15	0.08-0.15	0.05-0.12
	220-240	500	200-700					
	250-280	400	200-500					

Cutting data recommendations for hard turning with H 77

Hardened steel

Hardness HB	Cutting speed v_c (m/min)		Reference value for stress thickness (mm)
	Reference value	Total area	
48	250	60-300	≤ 0.18
52	200	50-220	≤ 0.16
56	180	40-200	≤ 0.14
60	150	30-180	≤ 0.12

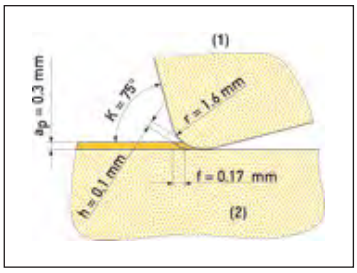
Determination of the feed rate when turning hardened steel

Cutting depth a_p (mm)	Indexable insert corner radius r_e (mm)		
	0.4	0.8	1.2
0.1	1.5	2.1	2.5
0.2	1.15	1.6	1.8
0.3	1.0	1.3	1.5
0.4	1.0	1.2	1.3
0.5	–	1.1	1.2

$f = h \cdot M$

Conversion factor M for inserts with corner radius r_{ea}

Factor M



Typical operating conditions for hard turning
(1) = Indexable insert
(2) = Workpiece

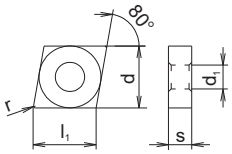
Lathe tools

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

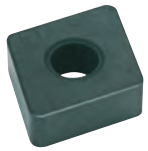
18638 Ceramic indexable inserts CNGA

GG(G) 58 HRC

Design
Rhombic, negative 0°, 80° tip angle.
Quality
Mixed ceramic Al_2O_3 - TiCN (H 77).



18638

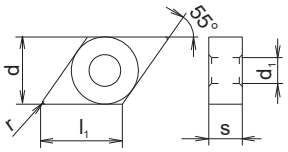


ISO designation	l_1 mm	s mm	r mm	d mm	d_1 mm	KH 18638 ...
CNGA 120408 T02020	12.9	4.76	0.8	12.7	5.16	301
CNGA 120412 T02020	12.9	4.76	1.2	12.7	5.16	302

18640 Ceramic indexable inserts DNGA

GG(G) 58 HRC

Design
Rhombic, negative 0°, 55° tip angle.
Quality
Mixed ceramic Al_2O_3 - TiCN (H 77).



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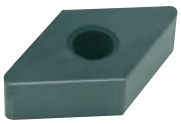
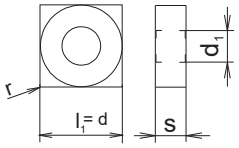


ISO designation	l_1 mm	s mm	r mm	d mm	d_1 mm	KH 18640 ...
DNGA 150608 T02020	15.5	7.94	0.8	12.7	5.16	101
DNGA 150612 T02020	15.5	7.94	1.2	12.7	5.16	102

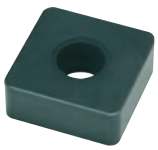
18642 Ceramic indexable inserts SNGA

GG(G) 58 HRC

Design
Square, negative 0°, 90° tip angle.
Quality
Mixed ceramic Al_2O_3 - TiCN (H 77).



18642

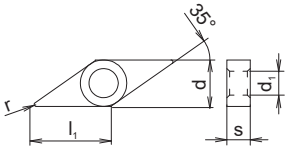


ISO designation	l_1 mm	s mm	r mm	d mm	d_1 mm	KH 18642 ...
SNGA 120408 T02020	12.7	4.76	0.8	12.7	5.16	201
SNGA 120412 T02020	12.7	4.76	1.2	12.7	5.16	202

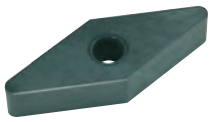
18646 Ceramic indexable inserts VNGA

GG(G) 58 HRC

Design
Rhombic, negative 0°, 35° tip angle.
Quality
Mixed ceramic Al_2O_3 - TiCN (H 77).



18646



ISO designation	l_1 mm	s mm	r mm	d mm	d_1 mm	KH 18646 ...
VNGA 160404 T02020	16.5	4.76	0.4	9.52	3.81	101
VNGA 160408 T02020	16.5	4.76	0.8	9.52	3.81	102

18649 Mini CBN indexable inserts

ATORN®

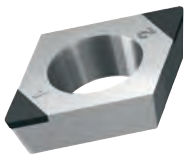
18649
Design
- **Sharp-edged**
- Corners with cubic crystalline boron nitride
- Also for severely interrupted cut
- Cutting edge lasered

NEW

18649 001-003 + 18649 101-103

Design
- Positive 15°
- Tip angle 80°
- Cutting edge length 1.6 mm

18649 001-003
18649 101-103



Applications:	hardened steel 42–68 HRC ABC30B/A		cast iron/special alloys ABC15B/A	
ISO designation	18649	...	18649	...
CDGW 040101		001		101
CDGW 040102		002		102
CDGW 040104		003		103

18649 004-006 + 18649 104-106

Design
- Positive 11°
- Tip angle 80°
- Cutting edge length 2.0 mm

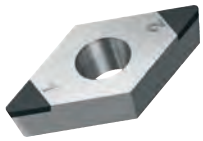
18649 004-006
18649 104-106

Applications:	hardened steel 42–68 HRC ABC30B/A		cast iron/special alloys ABC15B/A	
ISO designation	18649	...	18649	...
CPGW 05T101		004		104
CPGW 05T102		005		105
CPGW 05T104		006		106

18649 007-009 + 18649 107-109

Design
- Positive 7°
- Tip angle 55°
- Cutting edge length 2.0 mm

18649 007-009
18649 107-109



Applications:	hardened steel 42–68 HRC ABC30B/A		cast iron/special alloys ABC15B/A	
ISO designation	18649	...	18649	...
DCGW 04T001		007		107
DCGW 04T002		008		108
DCGW 04T004		009		109

18649 010-012 + 18649 110-112

Design
- Positive 7°
- Tip angle 35°
- Cutting edge length 2.0 mm

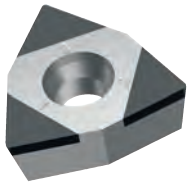
18649 010-012
18649 110-112

Applications:	hardened steel 42–68 HRC ABC30B/A		cast iron/special alloys ABC15B/A	
ISO designation	18649	...	18649	...
VCGW 050101		010		110
VCGW 050102		011		111
VCGW 050104		012		112

18649 013-015 + 18649 113-115

Design
- Positive 7°
- Tip angle 80°
- Cutting edge length 1.6 mm

18649 013-015
18649 113-115



Applications:	hardened steel 42–68 HRC ABC30B/A		cast iron/special alloys ABC15B/A	
ISO designation	18649	...	18649	...
WCGW 020101		013		113
WCGW 020102		014		114
WCGW 020104		015		115

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info 18650 - 18659 ISO indexable inserts CBN

ATORN®

Design
- Carbide plate with soldered CBN insert
- Cost savings due to the elimination of grinding
- **F = sharp-edged:** For fine finishing with continuous cut
- **T = chamfered:** for interrupted cut

Quality
- **ABC 10** (ISO K01-K25, S01-S15)
  For grey cast iron (GG 25), super alloys, sintered steels
- **ABC 15** (ISO K10-K30, S01-S15)
  For grey cast iron e.g. GG 25 or super alloys such as Inconel or titanium
- **ABC 25** (ISO K05-K20, S05-S25, H01-H25)
  For hard turning of 54-62 HRC (dry machining)
- **ABC 30** (ISO K10-K30, H10-H30)
  For hard turning of 54-62 HRC

18650 CBN indexable inserts CCGW

ATORN®

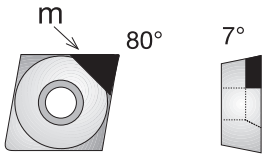
Design
- Positive 7°
- 80° tip angle
- Cutting edge length m = 2.5–3.0 mm depending on cutting edge radius

18650 301-305 + 501-505
Design
F = sharp-edged.

18650 401-405 + 601-605
Design
T = chamfered 20° x 0.15 mm.

18650

	ABC10/F	ABC10/T	ABC25/F	ABC25/T
ISO designation	18650 ...	18650 ...	18650 ...	18650 ...
CCGW 060202	301	401	501	601
CCGW 060204	302	402	502	602
CCGW 09T304	303	403	503	603
CCGW 09T308	304	404	504	604
CCGW 120404	305	405	505	605



18651 CBN indexable inserts CNGA

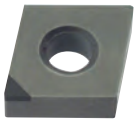
ATORN®

Design
- Negative 0°
- 80° tip angle
- Cutting edge length m = 2.5–3.0 mm depending on cutting edge radius

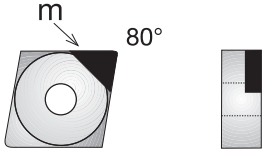
18651 301-302 + 501-502
Design
F = sharp-edged.

18651 401-402 + 601-602
Design
T = chamfered 20° x 0.15 mm.

18651



	ABC10/F	ABC10/T	ABC25/F	ABC25/T
ISO designation	18651 ...	18651 ...	18651 ...	18651 ...
CNGA 120404	301	401	501	601
CNGA 120408	302	402	502	602



18652 CBN indexable inserts DCGW

65 HRC | GG(G)

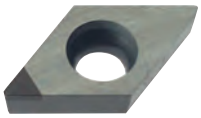
ATORN®

Design
- Positive 7°
- 55° tip angle
- With sintered chip breaker
- Cutting edge length m = 2.5–3.0 mm depending on cutting edge radius

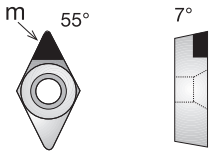
18652 301-305 + 501-505
Design
F = sharp-edged.

18652 401-405 + 601-605
Design
T = chamfered 20° x 0.15 mm.

18652



	ABC10/F	ABC10/T	ABC25/F	ABC25/T
ISO designation	18652 ...	18652 ...	18652 ...	18652 ...
DCGW 070202	301	401	501	601
DCGW 070204	302	402	502	602
DCGW 11T302	303	403	503	603
DCGW 11T304	304	404	504	604
DCGW 11T308	305	405	505	605



18653 CBN indexable inserts DNGA

65 HRC | GG(G)

ATORN®

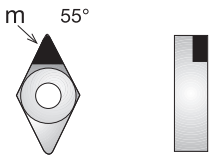
Design
- Negative 0°
- 55° tip angle
- Cutting edge length m = 3.0–3.5 mm depending on cutting edge radius

18653 301-302 + 501-502
Design
F = sharp-edged.

18653 401-402 + 601-602
Design
T = chamfered 20° x 0.15 mm.

18653

	ABC10/F	ABC10/T	ABC25/F	ABC25/T
ISO designation	18653 ...	18653 ...	18653 ...	18653 ...
DNGA 150604	301	401	501	601
DNGA 150608	302	402	502	602



18657 CBN indexable inserts TNGA

65 HRC | GG(G)

ATORN®

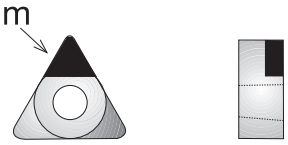
Design
- Negative 0°
- 60° tip angle
- Cutting edge length m = 3.0–3.5 mm depending on cutting edge radius

18657 301-302 + 501-502
Design
F = sharp-edged.

18657 401-402 + 601-602
Design
T = chamfered 20° x 0.15 mm.

18657

	ABC10/F	ABC10/T	ABC25/F	ABC25/T
ISO designation	18657 ...	18657 ...	18657 ...	18657 ...
TNGA 160404	301	401	501	601
TNGA 160408	302	402	502	602



18659 CBN indexable inserts VNGA

65 HRC | GG(G)

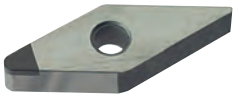
ATORN®

Design
- Negative 0°
- 35° tip angle
- Cutting edge length m = 4.4–5.0 mm depending on cutting edge radius.

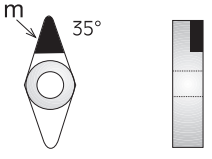
18659 301-302 + 501-502
Design
F = sharp-edged.

18659 401-402 + 601-602
Design
T = chamfered 20° x 0.15 mm.

18659



	ABC10/F	ABC10/T	ABC25/F	ABC25/T
ISO designation	18659 ...	18659 ...	18659 ...	18659 ...
VNGA 160404	301	401	501	601
VNGA 160408	302	402	502	602



= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info

18664 - CVD thick film diamond indexable inserts

ATORN®

NEW

CVD thick film diamond - the hardest tool material in the world!

The ultra-hard tool material „CVD thick film diamond" has the **highest degrees of hardness and wear resistance** of all the tool materials tested.

Significantly sharper cutting edges thanks to innovative laser technology. PCD, as a tool material, has clear disadvantages compared to „CVD thick film diamond" due to its soft metallic binding phase. Numerous tests have revealed that the soft binding phase of the PCD in particular is damaged by the abrasive particles. This means that diamond crystals break away due to compromised anchoring in the tool material matrix. If used correctly, CVD thick film diamond can deliver three to ten times the service life possible with PCD.

Applications:
- Aluminium
- Copper
- Brass
- Ceramic
- Zirconium
- Cemented carbide
- GFRP/CFRP
- Graphite

18664 Mini CVD thick film diamond indexable inserts

ATORN®

Design
- **Sharp-edged**
- Corners with CVD thick film diamond
- Cutting edge lasered

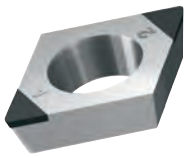
NEW

18664 001-003

Design
- Positive 15°
- Tip angle 80°
- Cutting edge length 1.6 mm

ISO designation	AVC 18664 ...
CDGW 040101	001
CDGW 040102	002
CDGW 040104	003

18664 001-003

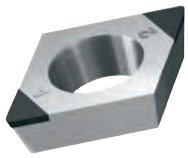


18664 101-103

Design
- Positive 11°
- Tip angle 80°
- Cutting edge length 2.0 mm

ISO designation	AVC 18664 ...
CPGW 05T101	101
CPGW 05T102	102
CPGW 05T104	103

18664 101-103

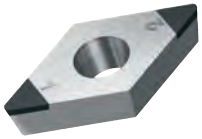


18664 201-203

Design
- Positive 7°
- Tip angle 55°
- Cutting edge length 2.0 mm

ISO designation	AVC 18664 ...
DCGW 04T001	201
DCGW 04T002	202
DCGW 04T004	203

18664 201-203



18664 301-303

Design
- Positive 7°
- Tip angle 35°
- Cutting edge length 2.0 mm

ISO designation	AVC 18664 ...
VCGW 050101 FN	301
VCGW 050102 FN	302
VCGW 050104 FN	303

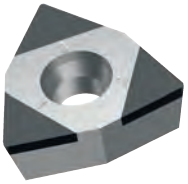
18664 301-303

18664 401-403

Design
- Positive 7°
- Tip angle 80°
- Cutting edge length 1.6 mm

ISO designation	AVC 18664 ...
WCGW 020101 FN	401
WCGW 020102 FN	402
WCGW 020104 FN	403

18664 401-403



Info — 18660 - 18663 PKD (polycrystalline diamond) ISO indexable inserts

ATORN®

- Carbide plate with soldered PKD insert
- **Quality ADC** (ISO N05-N40)

Use: Fine finishing and finishing of all non-ferrous metals and non-ferrous materials with small amounts of abrasive fillers.

ALU

Cutting data recommendations:

ISO	Material	Vc m/min.	Feed rate f mm/U
N	Aluminium alloys below 3% Si	200 - 2,500	0.05 - 0.40
	Aluminium alloys up to 12% Si	150 - 2,000	0.05 - 0.40
	Aluminium alloys up to approx. 21% Si	100 - 1,800	0.05 - 0.40
	Brass-magnesium-zinc alloys	200 - 2,000	0.05 - 0.40
	Copper-bronze-lead alloys	200 - 1,500	0.05 - 0.40
	Duroplastics and thermoplastics with or without fillers, e.g.: CFK, GFK and epoxy resins	100 - 1,000	0.05 - 0.20

18660 PCD indexable inserts CCGW

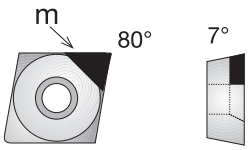
ALU

ATORN®

18660

ISO designation	ADC/F 18660 ...
CCGW 060202	201
CCGW 060204	202
CCGW 09T304	204
CCGW 09T308	205
CCGW 120404	206

Design
- **Sharp-edged**
- Positive 7°
- 80° tip angle
- Cutting edge length m = 3.2–4.3 mm



18661 PCD indexable inserts CNGA

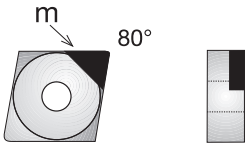
ALU

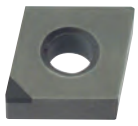
ATORN®

18661

ISO designation	ADC/F 18661 ...
CNGA 120404	201
CNGA 120408	202

Design
- **Sharp-edged**
- Negative 0°
- 80° tip angle
- Cutting edge length m = 6.0 mm





18662 PCD indexable inserts DCGW

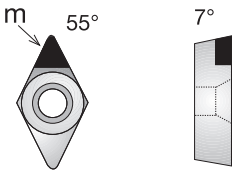
ALU

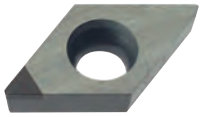
ATORN®

18662

ISO designation	ADC/F 18662 ...
DCGW 070202	201
DCGW 070204	202
DCGW 11T302	203
DCGW 11T304	204
DCGW 11T308	205

Design
- **Sharp-edged**
- Positive 7°
- 55° tip angle
- Cutting edge length m = 3.4–4.7 mm.





18663 PCD indexable inserts DNGA

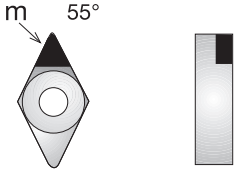
ALU

ATORN®

18663

ISO designation	ADC/F 18663 ...
DNGA 150604	201
DNGA 150608	202

Design
- **Sharp-edged**
- Negative 0°
- 55° tip angle
- Cutting edge length m = 6.0 mm



= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info — 18665 - ISO Ultra Power indexable inserts

ATORN®

NEW

Properties of **Ultra PCD**:

- Much sharper cutting edges thanks to innovative laser technology
- **Service life three to five times longer compared to standard PCD and CVD-D**
- **Significantly better surfaces compared to standard PCD and CVD-D**
- Can be used for most non-ferrous materials that cannot be machined with PCD

Applications:
- Cemented carbide with Co binder
- Cemented carbide with Ni binder
- Ceramic
- Graphite
- Non-ferrous materials that cannot be machined with PCD

18665 — Mini ISO Ultra Power indexable inserts

ATORN®

18665
Design
- **Sharp-edged**
- Corners with polycrystalline diamond
- Cutting edge lasered

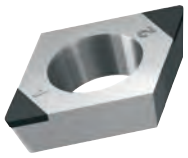
NEW

18665 001-003

Design
- Positive 15°
- Tip angle 80°
- Cutting edge length 1.6 mm

ISO designation	APC 18665 ...
CDGW 040101	001
CDGW 040102	002
CDGW 040104	003

18665 001-003

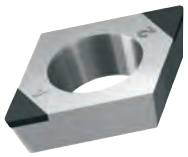


18665 101-103

Design
- Positive 11°
- Tip angle 80°
- Cutting edge length 2.0 mm

ISO designation	APC 18665 ...
CPGW 05T101	101
CPGW 05T102	102
CPGW 05T104	103

18665 101-103

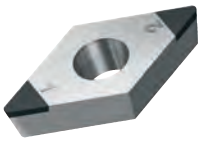


18665 201-203

Design
- Positive 7°
- Tip angle 55°
- Cutting edge length 2.0 mm

ISO designation	APC 18665 ...
DCGW 04T001	201
DCGW 04T002	202
DCGW 04T004	203

18665 201-203



18665 301-303

Design
- Positive 7°
- Tip angle 35°
- Cutting edge length 2.0 mm

ISO designation	APC 18665 ...
VCGW 050101	301
VCGW 050102	302
VCGW 050104	303

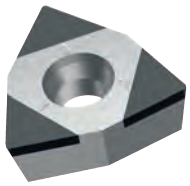
18665 301-303

18665 401-403

Design
- Positive 7°
- Tip angle 80°
- Cutting edge length 1.6 mm

ISO designation	APC 18665 ...
WCGW 020101	401
WCGW 020102	402
WCGW 020104	403

18665 401-403

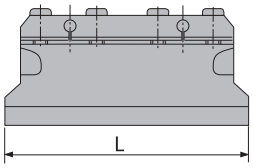


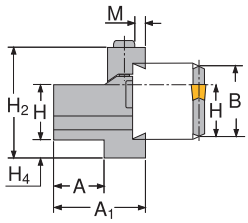
18670 Basic holder for blades

ATORN®

Design
Delivered without blade.
Applications
For clockwise and anti-clockwise rotation.

Note:
Dimension B corresponds to the construction height of the blade.





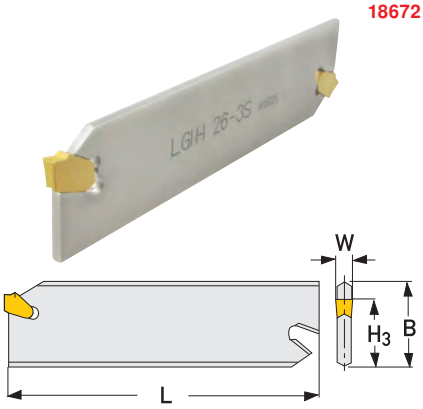
18670

Designation	B mm	H mm	A mm	M mm	L mm	A_1 mm	H_4 mm	H_2 mm	Screw	18670	...
ATBN 16-2	19	16	16	2.0	76	26	4	30	SR-M5 x 25		101
ATBN 16-5	26	16	16	4.0	76	30	12	38	SR-M6 x 30		102
ATBN 19-5	26	19	19	5.0	87	33	9	38	SR-M6 x 30		103
ATBN 20-5	26	20	19	4.0	87	33	8	38	SR-M6 x 30		104
ATBN 20-6	32	20	19	5.5	100	35	13	48	SR-M6 x 40		105
ATBN 25-6	32	25	20	5.5	110	36	8	48	SR-M6 x 40		106
ATBN 32-6	32	32	28	5.5	120	44	3	48	SR-M6 x 40		107

18672 Blades

Design
Without depth stop.
Applications
For clockwise and anti-clockwise rotation. For holding cutting inserts art. no. 18674–18675.
For basic holder art. no. 18670.

18672

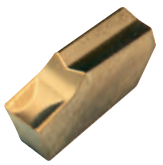


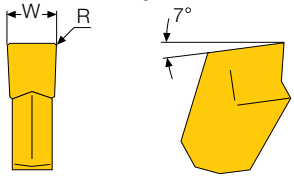
Designation	D_{max} mm	W mm	B mm	L mm	H_3 mm	18672	...
SGIH 26-2	50	2.2	26	110	21.4		102
SGIH 26-3	75	3.1	26	110	21.4		103
SGIH 26-4	80	4.1	26	110	21.4		104
SGIH 32-2	40	2.2	32	150	25.0		107
SGIH 32-3	100	3.1	32	150	25.0		108
SGIH 32-4	100	4.1	32	150	25.0		109
SGIH 32-5	120	5.1	32	150	25.0		110

18674 Cutting inserts for grooving and cutting off

Design
Neutral.
Applications
Suitable for blades art. no. 18672.

18674



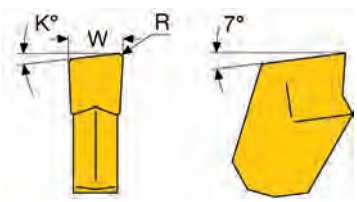


Applications				P M K	
Cemented carbide grade				H 42	
Coating				coated	
Designation	**$W^{\pm 0.1}$ mm**	**$R^{\pm 0.05}$ mm**		**18674**	**...**
GTN-2	2.2	0.16	10 pcs.		113
GTN-3	3.1	0.20	10 pcs.		114
GTN-4	4.1	0.24	10 pcs.		115
GTN-5	5.1	0.28	10 pcs.		116

18675 Cutting inserts for cutting off

Design
Right.
Applications
Suitable for blades art. no. 18672.

18675



Applications					P M K	
Cemented carbide grade					H 42	
Coating					coated	
Designation	**$W^{\pm 0.1}$ mm**	**K°**	**$R^{\pm 0.05}$ mm**		**18675**	**...**
GTR-3-4D	3.1	4°	0.20	10 pcs.		225
GTR-4-4D	4.1	4°	0.24	10 pcs.		230

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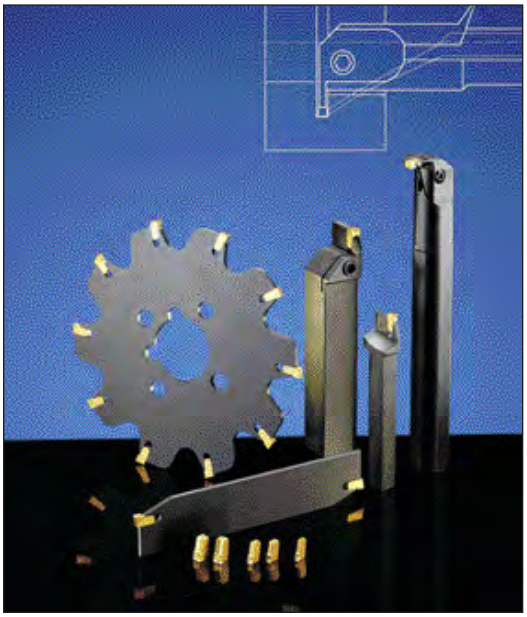
Recess turning with A-CUT (art. no. 18680 - 18701)

ATORN®

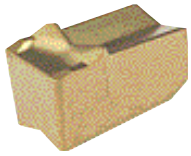
The A-CUT system covers a wide range of machining operations. It is unique because of its flexibility and economy. There are five different types of cutting inserts and a wide range of holders.

Possible operations of the A-CUT system:
- Tapping and grooving
- Deep precision engravings
- Turning and copying
- Undercutting and fine turning
- Groove milling
- Axial grooving

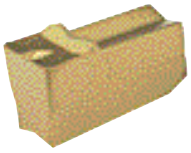
A-CUT cutting inserts are offered with chip breakers in four different geometries. Each is designed for optimal performance in a specific application. Choose the geometry that best suits your application.



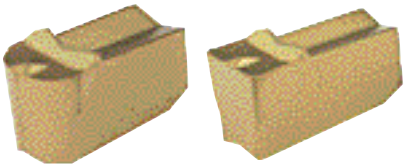
Geometry C
AIMC cutting inserts are ideal for tapping and grooving most steel materials, alloyed steel and stainless steel. They have a strong cutting edge which makes them the first choice for hard materials and rough conditions conditions at medium to high feed rates.



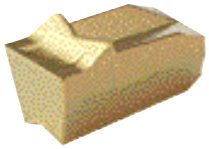
Geometry J
AIMJ cutting inserts are ideal for tapping and grooving in general operations involving low feed rates on carbon steel, alloy steel and austenitic stainless steel. The cutting edge has a positive clamping angle, making this design a first choice for soft materials, small diameters and thin-walled parts.



Geometry V
AIPV cutting inserts are designed for machining precision recesses, for free turning and for profile work (width tolerance +/- 0.02 mm). These cutting inserts are available with different corner radii. The V-version has a multi-directional chip breaker.



Geometry F
AIMF cutting inserts have been specially developed for axial and frontal grooving. The cutting edge height for small diameters has been designed to be centred to allow the grooves to be widened by a series of overlapping grooves.



Selection of cemented carbide grade

	A-CUT quality	ISO	Physical properties HRa, BBF= bending strength... N/mm²	Material	Recommended application area
Uncoated	HW 3410	K10-K20	HRa 92.5 BBF 2.250 N/mm²	Cast iron with lamellar graphite over HB 220, malleable cast iron, aluminium and aluminium-silicon, copper alloys, phenolic resin laminate and highly heat-resistant alloys	For medium machining and finishing at medium cutting speeds and feed rates
Coated	HC 3630	P20-P40	CVD coated Multilayer TiC+TiCN+TiN	Carbon steel, alloy steel, cast steel, malleable cast iron, austenitic steel, martensitic stainless steel, free-cutting steel	Suitable for medium-heavy finishing and roughing, machining with interrupted cut
	HC 3635	P25-P45 M20-M30 K20-K40	PVD coated TiCN	Steel, alloy steel, stainless steel	For general applications at medium cutting speeds and in unstable machine conditions

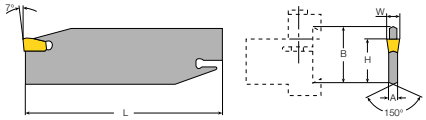
18680 Blades A-CUT

ATORN®

18680

Applications
For **cutting off** and **deep grooving.**
For cutting inserts AIMC, AIMJ and AIPV (art. no. 18687–18696).

Note:
Blades should not be used for turning or copy turning operations.
Delivered without cutting inserts.



Designation	B mm	W mm	A mm	L mm	H mm	Max. workpiece Ø mm	Matching basic holder	18680	...
AH 101 19 2	19	2.2	1.6	86	15.7	38	ATBN 16-2		202
AH 101 26 2	26	2.2	1.6	110	21.4	50	ATBN 16-5/ATBN 19-5/ATBN 20-5		204
AH 101 26 3	26	3.1	2.4	110	21.4	75	ATBN 16-5/ATBN 19-5/ATBN 20-5		205
AH 101 26 4	26	4.1	3.2	110	21.4	80	ATBN 16-5/ATBN 19-5/ATBN 20-5		206
AH 101 32 2	32	2.2	1.6	150	24.8	50	ATBN 20-6/ATBN 25-6/ATBN 32-6		209
AH 101 32 3	32	3.1	2.4	150	24.8	100	ATBN 20-6/ATBN 25-6/ATBN 32-6		210
AH 101 32 4	32	4.1	3.2	150	24.8	100	ATBN 20-6/ATBN 25-6/ATBN 32-6		211
AH 101 32 5	32	5.1	4.0	150	24.8	125	ATBN 20-6/ATBN 25-6/ATBN 32-6		212
AH 101 32 6	32	6.4	5.2	150	24.8	125	ATBN 20-6/ATBN25-6/ATBN 32-6		213

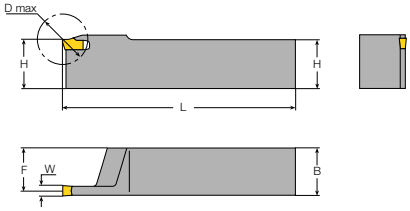
18681 Clamp holder A-CUT

ATORN®

18681

Applications
For **cutting off** and **grooving**. For cutting inserts AIMC, AIMJ and AIPV (art. no. 18687–18696).

Note:
Clamp holders should not be used for turning (use clamp holder art. no. 18682 for this operation).
Delivered with ejector, without cutting inserts.



Designation	H mm	W mm	B mm	L mm	F mm	Max. workpiece Ø mm	Right 18681	...	Left 18681	...
AHR/L 201 1212 2	12	2.2	12	110	11.2	32		201		301
AHR/L 201 1212 3	12	3.1	12	110	10.8	32		202		302
AHR/L 201 1616 2	16	2.2	16	110	15.2	32		203		303
AHR/L 201 1616 3	16	3.1	16	110	14.8	35		204		304
AHR/L 201 2020 2	20	2.2	20	110	19.2	35		206		306
AHR/L 201 2020 3	20	3.1	20	120	18.8	52		207		307
AHR/L 201 2020 4	20	4.1	20	120	18.4	57		208		308
AHR/L 201 2525 3	25	3.1	25	150	23.8	56		209		309
AHR/L 201 2525 4	25	4.1	25	150	23.4	65		210		310

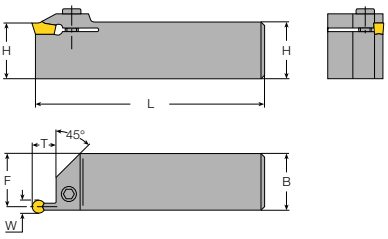
18682 Clamp holder A-CUT

ATORN®

18682

Applications
For **cutting off, grooving** and **turning**.
For cutting inserts AIMC, AIMJ and AIPV (art. no. 18687–18696).

Note:
Cutting inserts AIMC and AIMJ (art. no. 18687–18692) should be used only for grooving.
Delivered without cutting inserts.
For clamping screw, see art. no. 18685.



Designation	H mm	W mm	B mm	L mm	F mm	T mm	Clamping screw	Right 18682	...	Left 18682	...
AHR/L 211 1616 3	16	3.1	16	100	14.7	9.9	M5 x 16		201		301
AHR/L 211 1616 4	16	4.1	16	100	14.2	13.0	M5 x 16		202		302
AHR/L 211 2020 3	20	3.1	20	125	18.7	9.9	M5 x 20		203		303
AHR/L 211 2020 4	20	4.1	20	125	18.2	13.0	M5 x 20		204		304
AHR/L 211 2525 3	25	3.1	25	150	23.7	9.9	M5 x 20		205		305
AHR/L 211 2525 4	25	4.1	25	150	23.2	13.0	M5 x 25		206		306
AHR/L 211 2525 5	25	5.1	25	150	22.7	13.0	M5 x 25		207		307
AHR/L 211 2525 6	25	6.4	25	150	22.2	16.0	M5 x 25		208		308

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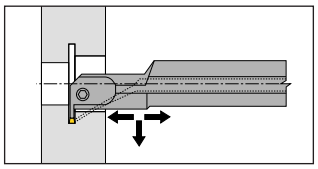
18684 Boring bars A-CUT with internal cooling

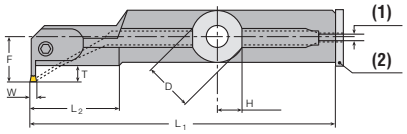
ATORN®

Design
With internal coolant supply. Seal thread R 1/8. When using the seal, the boring bar can be shortened by up to 100 mm.
Applications
For **internal turning** and **grooving.** For cutting inserts AIMC, AIMJ and AIPV (art. no. 18687–18696).



Note:
Cutting inserts AIMC and AIMJ (art. no. 18687–18692) should be used only for grooving. For best results, the cutting edge height should be above the centre by dimension C. Supplied complete with clamping screw (art. no. 18685), TORX® key T20 and seal, ***without*** *cutting inserts.*

18684



(1) Sealing thread
(2) Seal

Designation	D mm	Smallest bore Ø in mm	Tmax mm	C mm	W mm	F mm	L_1 mm	L_2 mm	H mm	Clamping screw	Right 18684	...	Left 18684	...
AHR/L 619 25C 2	25	35	6.5	0.3	2.2	20.0	200	51.0	11.5	SR 76-1021		201		301
AHR/L 619 25C 3	25	47	8.0	0.5	3.1	20.8	200	51.0	11.5	SR 76-1022		202		302
AHR/L 619 25C 4	25	47	8.0	0.5	4.1	20.8	200	51.0	11.5	SR 76-1022		203		303
AHR/L 619 32C 2	32	43	7.5	0.3	2.2	25.0	250	63.5	14.5	SR 76-1022		204		304
AHR/L 619 32C 3	32	52	10.0	0.5	3.1	26.6	250	57.0	14.5	SR 76-1022		205		305
AHR/L 619 32C 4	32	52	10.0	0.5	4.1	26.6	250	51.0	14.0	SR 76-1022		206		306
AHR/L 619 40C 4	40	47	12.0	0.5	4.1	33.0	300	51.0	18.0	SR 76-1022		210		310

18685 Replacement clamping screws for A CUT holder

ATORN®

Applications
For A CUT clamp holder, art. no. 18682 and A-CUT boring bars, art. no. 18684.

18685

Designation		18685	...
M5 x 16 hexagon socket	10 pcs.		101
M5 x 20 hexagon socket	10 pcs.		102
M5 x 25 hexagon socket	10 pcs.		103
M6 x 25 hexagon socket	10 pcs.		104
SR 76-1021 TORX®	10 pcs.		105
SR 76-1022 TORX®	10 pcs.		106

18687 - 18689 Cutting inserts A-CUT AIMC

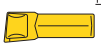
ATORN®

Design
With chip breaker geometry C (strong cutting edge).

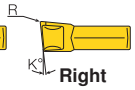
Applications
For **cutting off and grooving** in most steels, alloyed steel and stainless steel. For hard materials and rough conditions with mid-range to high feed rates.

18687 - 18689

Neutral



Left



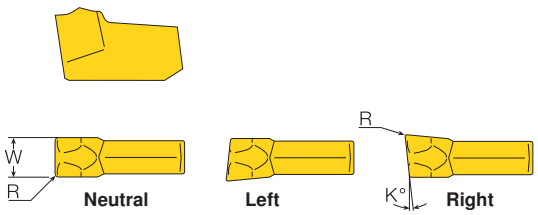
Right

Applications						NK HW 3410 uncoated		PMK HC 3635 coated		P HC 3630 coated	
Cemented carbide grade											
Coating											
Designation	W +/-0.1 mm	K degrees	R mm			18687	...	18688	...	18689	...
AIMC 1.6	1.6	0	0.16	5 pcs.			301				501
AIMC 2	2.2	0	0.20	5 pcs.			302		402		502
AIMC 2 6L	2.2	6	0.20	5 pcs.			303				503
AIMC 2 6R	2,2	6	0.20	5 pcs.			304				504
AIMC 3	3.1	0	0.20	5 pcs.			305		405		505
AIMC 3 6L	3.1	6	0.20	5 pcs.			306		406		506
AIMC 3 6R	3.1	6	0.20	5 pcs.			307		407		507
AIMC 4	4.1	0	0.25	5 pcs.			308		408		508
AIMC 4 6L	4.1	6	0.25	5 pcs.			309				509
AIMC 4 6R	4.1	6	0.25	5 pcs.			310				510
AIMC 5	5.1	0	0.30	5 pcs.			311		411		511
AIMC 5 6L	5.1	6	0.30	5 pcs.			312				512
AIMC 5 6R	5.1	6	0.30	5 pcs.			313				513
AIMC 6	6.4	0	0.35	5 pcs.			314		414		514
AIMC 6 6L	6.4	6	0.35	5 pcs.			315				515
AIMC 6 6R	6.4	6	0.35	5 pcs.			316				516

18690 - 18692 Cutting inserts A-CUT AIMJ

ATORN®

Design
With chip breaker geometry J (cutting edge with positive chip angle).
Applications
For **cutting off and grooving** in general operations at low feed rates with carbon steel, alloy steel and austenitic, stainless steel. For soft materials, small diameters and thin-walled parts.



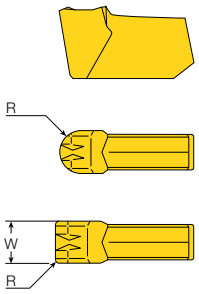
18690 - 18692

Applications					N K	P M K	P
Cemented carbide grade					HW 3410	HC 3635	HC 3630
Coating					uncoated	coated	coated
Designation	W+/-0.1 mm	K degrees	R mm		18690 ...	18691 ...	18692 ...
AIMJ 2	2.2	0	0.20	5 pcs.	301	401	501
AIMJ 2 6L	2.2	6	0.20	5 pcs.	302	402	502
AIMJ 2 6R	2.2	6	0.20	5 pcs.	303	403	503
AIMJ 3	3.1	0	0.20	5 pcs.	304	404	504
AIMJ 3 6L	3.1	6	0.20	5 pcs.	305	405	505
AIMJ 3 6R	3.1	6	0.20	5 pcs.	306	406	506
AIMJ 4	4.1	0	0.25	5 pcs.	307	407	507
AIMJ 4 6L	4.1	6	0.25	5 pcs.	308		508
AIMJ 4 6R	4.1	6	0.25	5 pcs.	309	409	509
AIMJ 5	5.1	0	0.30	5 pcs.	310		510

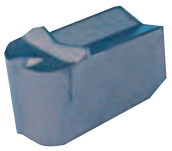
18695 Cutting inserts A-CUT AIPV

ATORN®

Design
With chip breaker geometry V (multi-directional chip breaker).
Applications
For machining **precision grooves,** for **free-turning** and for **profiling.**



18695

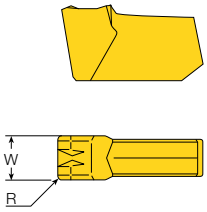


Applications					P M K	Applications					P M K
Cemented carbide grade					HC 3635	Cemented carbide grade					HC 3635
Coating					coated	Coating					coated
Designation	W+/-0.02 mm	R mm		18695 ...		Designation	W+/-0.02 mm	R mm		18695 ...	
AIPV 3.00E 0.40	3	0.4	5 pcs.	201		AIPV 3.00E 1.50	3	1.5	5 pcs.	205	
AIPV 4.00E 0.40	4	0.4	5 pcs.	202		AIPV 4.00E 2.00	4	2.0	5 pcs.	206	
AIPV 6.00E 0.40	6	0.4	5 pcs.	204		AIPV 6.00E 3.00	6	3.0	5 pcs.	208	

18696 Cutting inserts A-CUT AIPV

ATORN®

Design
With chip breaker geometry V (multi-directional chip breaker).
Applications
For machining **circlip grooves.**



18696

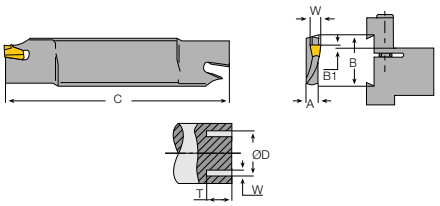
Applications					P M K	Applications					P M K
Cemented carbide grade					HC 3635	Cemented carbide grade					HC 3635
Coating					coated	Coating					coated
Designation	W+/-0.02 mm	R mm		18696 ...		Designation	W+/-0.02 mm	R mm		18696 ...	
AIPV 1.85 0.10	1.85	0.10	5 pcs.	201		AIPV 3.00 0.20	3.00	0.20	5 pcs.	205	
AIPV 2.00 0.20	2.00	0.20	5 pcs.	202		AIPV 4.00 0.20	4.00	0.20	5 pcs.	207	
AIPV 2.15 0.15	2.15	0.15	5 pcs.	203		AIPV 4.15 0.15	4.15	0.15	5 pcs.	208	
AIPV 2.65 0.15	2.65	0.15	5 pcs.	204							

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18700 Blades for axial grooving A-CUT

ATORN®

Design
Right.
Applications
For machining **diameters 35–700 mm.**
For cutting inserts AIMF (art. no. 18701).
Delivered **without** cutting inserts.



18700

Designation	For cutting insert	W mm	B mm	Min./max. Ø mm	Tmax mm	A mm	B1 mm	C mm	Right 18700	...
AH 106 35R-2	AIMF 2N	2.1	32	35–46	20	5.2	0.8	150		201
AH 106 45R-2	AIMF 2N	2.1	32	45–61	20	5.2	0.8	150		202
AH 106 60R-2	AIMF 2N	2.1	32	60–80	20	5.2	0.8	150		203
AH 106 80R-2	AIMF 2N	2.1	32	79–102	20	4.0	0.8	150		204
AH 106 100R-2	AIMF 2N	2.1	32	101–132	20	4.0	0	150		205
AH 106 75R-3	AIMF 3N	3.0	32	65–92	20	5.2	1.0	150		206
AH 106 90R-3	AIMF 3N	3.0	32	90–122	20	5.2	0.2	150		207
AH 106 120R-3	AIMF 3N	3.0	32	120–160	25	5.2	0	150		208
AH 106 80R-4	AIMF 4N	4.0	32	80–155	30	5.2	2.5	150		209
AH 106 150R-4	AIMF 4N	4.0	32	150–500	30	5.2	2.5	150		210
AH 106 80R-5	AIMF 5N	5.0	32	80–162	32	5.2	2.5	150		211
AH 106 150R-5	AIMF 5N	5.0	32	150–600	35	5.2	2.5	150		212
AH 106 90R-6	AIMF 6N	6.0	32	90–150	32	8.0	2.5	150		213
AH 106 150R-6	AIMF 6N	6.0	32	148–700	35	5.2	2.5	150		214

18701 Cutting inserts for axial grooving A-CUT AIMF

ATORN®

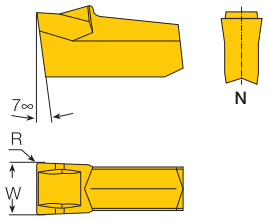
Design
With chip breaker geometry F.
Applications
Designed specifically for **axial and face grooving.**
The cutting edge height for small diameters is centred to allow the grooves to be expanded through a series of overlapping recesses. After the first recess, the groove width can be increased in both directions.

Note:
AIMF cutting inserts are **not** *interchangeable with AIMC, AIMJ or AIPV cutting inserts (art. no. 18687–18696).*

18701

Applications P M K
Cemented carbide grade HC 3630
Coating coated

Designation	Version	W +/-0.1 mm	R mm	For ØD mm		18701	...
AIMF 2N	Neutral	2.1	0.20	from 35	5 pcs.		101
AIMF 3N	Neutral	3.0	0.30	from 54	5 pcs.		104
AIMF 4N	Neutral	4.0	0.25	from 35	5 pcs.		107
AIMF 5N	Neutral	5.0	0.25	from 40	5 pcs.		108
AIMF 6N	Neutral	6.0	0.25	from 44	5 pcs.		109

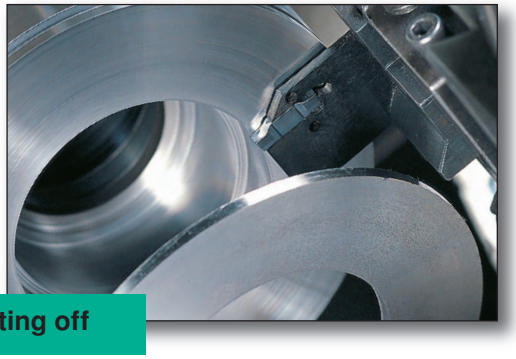


Info — Introduction of the T-clamp system (art. no. 18710–18762)

The user's guide provides the basic information that allows users to familiarise themselves with the extensive benefits of the T-Clamp system.

The T-clamp system permits multi-functional applications in just one system:

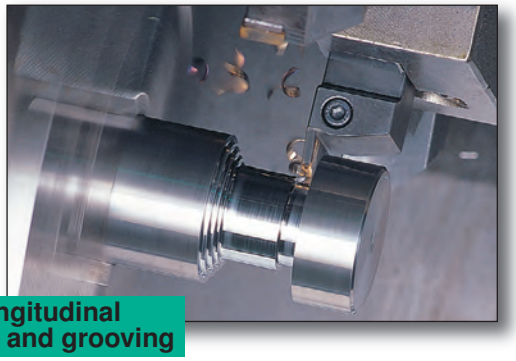
- Deep grooving
- Cutting off and grooving
- External turning
- Longitudinal turning and grooving
- Precision grooving and ramping
- Axial grooving and turning and facing
- External grooving



Cutting off

Cutting Inserts

- Repeat accuracy
- Sintered chip breakers
- An upper and lower half-radius position the cutting insert precisely and firmly
- TDJ/C universal, double-sided cutting inserts for turning and grooving
- TSJ/C-universal, single-sided cutting insert for deep grooving and cutting off
- TDT universal, double-sided cutting inserts for longitudinal turning and grooving



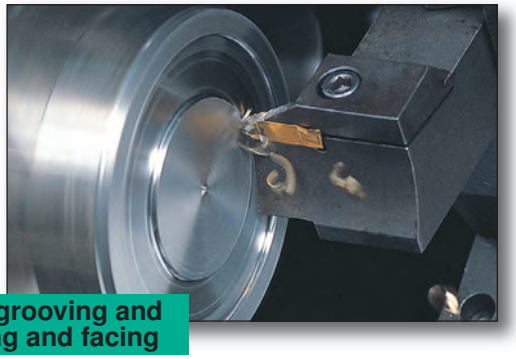
Longitudinal turning and grooving

One-piece tool

- Simple, accurate and reliable positioning
- Top and bottom guidance of the cutting insert in the holder
- No additional spare parts
- Use of standard mounts

Integrated tools with shank

- Simple, accurate and reliable positioning
- Top and bottom guidance of the cutting insert in the holder
- Firm hold against lateral forces
- No additional spare parts
- Standard shank dimensions



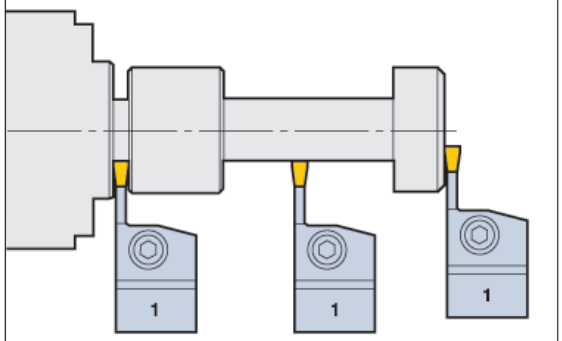
Axial grooving and turning and facing

Benefits of the T-Clamp system

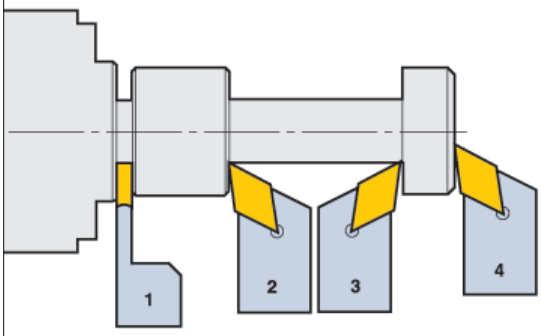
- T-clamp is deliverable as a double-sided or one-sided cutting insert for maximum profitability
- Multi-functional use
- Clockwise and anti-clockwise rotation, grooving and cutting off with a single tool
- T-clamp replaces one or more ISO tools
- Reduces the number of tools per machining operation
- Fewer types of inserts and tool holders in the magazine
- Shorter set-up times
- Shorter settings and faster lead time
- Reduces the need for presettings
- Less machine operating time
- The outstanding surface quality achieved by rough turning can replace the finishing step

T-clamp system compared to standard ISO system

T-clamp system



Standard ISO system



Recommended machine data

Face turning

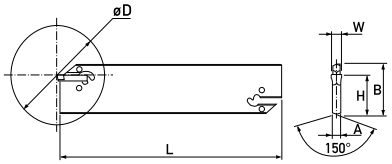
Material		Hardness Brinell HB	H 20	H 45
			Cutting speed (m/min)	
Unalloyed steel	0,2%C	150		110 - 140
	0,45%C	190		100 - 130
	0,83%C	250		90 - 110
Alloy steel		< 200		80 - 110
		200 - 250		75 - 120
		275 - 325		70 - 90
		325 - 375		60 - 75
		375 - 425		45 - 55
Stainless steel	Martensit	175 - 225		100 - 135
		275 - 325		70 - 95
	Austenit	135 - 175		50 - 65
Cast steel	Kohlenstoff	- 150		105 - 135
		150 - 200		85 - 100
	legiert	200 - 250		75 - 90
Malleable cast iron	kurzspanig	110 - 145	90 - 100	
	langspanig	200 - 250	70 - 90	
Cast iron	geringe Festigkeit	180	115 - 140	
	hohe Festigkeit	250	80 - 100	
Nodular graphite iron	ferritisch	160	85 - 105	
	pearlitisch	250	80 - 100	
Hard cast iron		400	20	
Bronze alloy	120 - 200	110 - 120		
Lead alloy	80 - 150	150 - 165		
Brass, red brass	60 - 110	115 - 125		
Phosphor bronze	85 - 110	80 - 90		
Aluminium alloy	150 - 200	200 - 240		
Non-heat-resistant	30 - 80	600 - 700		
Heat-resistant	80 - 120	250 - 300		
Aluminium alloy, cast iron		300 - 340		
Magnesium	40 - 60 HRB	225 - 265		
	60 - 90 HRB	230 - 250		
Electrolytic copper	50 - 85	90 - 100		

• When turning lengthwise, increase the cutting speed by 20-30%

18710 Blades

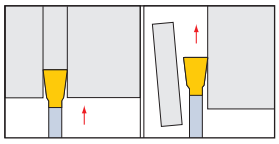
Applications
For clockwise and anti-clockwise rotation. For holding cutting inserts art. no. 18747–18750.

Note:
*Supplied**without** special key.*
Basic holder for blades,
see art. no. 18670 105-107.



18710

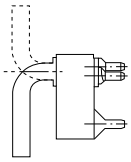
Type	B mm	L mm	H mm	A mm	W mm	For cutting inserts	Dmax mm	18710	...
TGB 32-2	32	150	24.8	1.6	1.9-2.5	TDC/TDJ	40		101
TGB 32-3	32	150	24.8	2.4	2.4-3.3	TDC/TDJ/TSJ	50		102
TGB 32-4	32	150	24.8	3.2	3.2-4.3	TDC/TDJ/TSJ	100		103
TGB 32-5	32	150	24.8	4.0	4.2-5.3	TDC/TDJ/TSJ	120		104



18711 Special key

Applications
For blades art. no. 18710.

18711

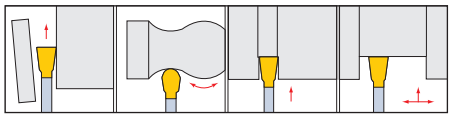


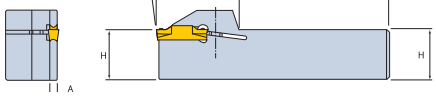
	18711	...
		101

18715 - 18716 Clamp holder for longitudinal turning and grooving

Applications
For holding cutting inserts art. no. 18747-18756 and 18760.

18715



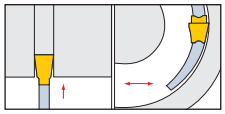


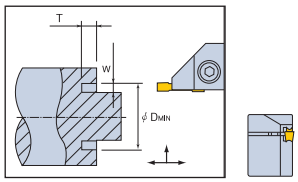
Type	H mm	B mm	L mm	F mm	E mm	A mm	W mm	Tmax mm	For cutting inserts	Screw size	Right 18715	...	Left 18716	...
TTER/L 1616-2	16	16	110	14.95	32	1.6	1.9-2.5	12	TDC/TDJ	M 5 x 0.8		101		101
TTER/L 2020-2	20	20	125	18.95	32	1.6	1.9-2.5	12	TDC/TDJ/TSJ/TDT	M 5 x 0.8		102		102
TTER/L 2525-2	25	25	150	23.95	32	1.6	1.9-2.5	12	TDC/TDJ/TSJ/TDT	M 5 x 0.8		103		103
TTER/L 1616-3	16	16	110	14.95	32	2.1	2.4-3.2	12	TDC/TDJ/TSJ/TDT	M 5 x 0.8		104		104
TTER/L 2020-3	20	20	125	18.95	32	2.1	2.4-3.2	12	TDC/TDJ/TSJ/TDT	M 5 x 0.8		105		105
TTER/L 2525-3	25	25	150	23.95	32	2.1	2.4-3.2	12	TDC/TDJ/TSJ/TDT	M 5 x 0.8		106		106
TTER/L 1616-4	16	16	110	14.55	32	2.9	3.2-4.2	15	TDC/TDJ/TSJ/TDT	M 5 x 0.8		107		107
TTER/L 2020-4	20	20	125	18.55	32	2.9	3.2-4.2	15	TDC/TDJ/TSJ/TDT	M 5 x 0.8		108		108
TTER/L 2525-4	25	25	150	23.55	32	2.9	3.2-4.2	15	TDC/TDJ/TSJ/TDT	M 5 x 0.8		109		109
TTER/L 2020-5	20	20	125	18.05	37	3.9	4.2-5.2	20	TDC/TDJ/TSJ/TDT	M 6 x 1.0		110		110
TTER/L 2525-5	25	25	150	23.05	37	3.9	4.2-5.2	20	TDC/TDJ/TSJ/TDT	M 6 x 1.0		111		111

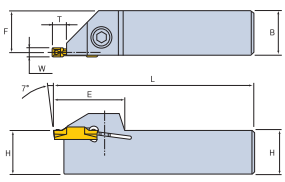
18719 - 18720 Clamp holder for external and axial grooving

Applications
For holding cutting inserts art. no. 18747–18760.

18719





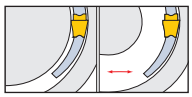


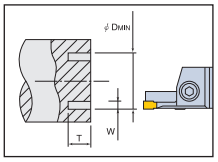
Type	H mm	B mm	L mm	F mm	E mm	Wmax mm	Tmax mm	Ø Dmin mm	For cutting inserts	Screw size	Right 18719	...	Left 18720	...
TGFR/L 1616-4	16	16	110	14.55	32	-4.3	6	30	TDC/TDJ/TSJ/TDT/TDFT-E	M 5 x 0.8		101		101
TGFR/L 2020-4	20	20	125	18.55	32	-4.3	6	30	TDC/TDJ/TSJ/TDT/TDFT-E	M 5 x 0.8		102		102
TGFR/L 2525-4	25	25	150	23.55	32	-4.3	6	30	TDC/TDJ/TSJ/TDT/TDFT-E	M 5 x 0.8		103		103

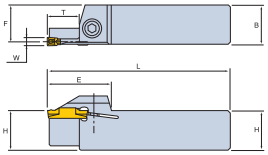
18731 - 18732 Clamp holder for axial deep grooving and turning and facing

Applications
For holding cutting inserts art. no. 18752–18758.
Diameter D mm = diameter range for axial grooving.
After the recess, the diameter for turning and facing is unlimited.

18731





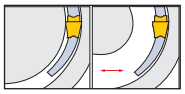


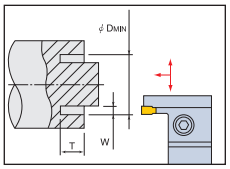
Type	H mm	B mm	L mm	F mm	E mm	W mm	Tmax mm	Ø D mm	For cutting inserts	Screw size	Right 18731	...	Left 18732	...
TTFR/L 25-30-4	25	25	150	23.55	32	4	12	22–40	TDT/TDFT-E	M 5 x 0.8		101		101
TTFR/L 25-40-4	25	25	150	23.55	32	4	15	32–50	TDT/TDFT-E	M 5 x 0.8		102		102
TTFR/L 25-50-4	25	25	150	23.55	32	4	15	42–60	TDT/TDFT-E	M 5 x 0.8		103		103
TTFR/L 25-60-4	25	25	150	23.55	32	4	15	52–85	TDT/TDFT-E	M 5 x 0.8		104		104

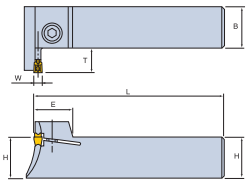
18735 - 18736 Clamp holder for axial deep grooving and turning and facing

Applications
For holding cutting inserts art. no. 18752–18758.
Diameter D mm = diameter range for axial grooving.
After the recess, the diameter for turning and facing is unlimited.

18735





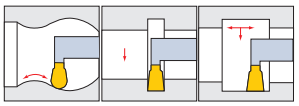


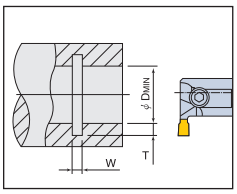
Type	H mm	B mm	L mm	E mm	W mm	Tmax mm	Ø D mm	For cutting inserts	Screw size	Right 18735	...	Left 18736	...
TTFPR/L 25-30-4	25	25	150	18	4	12	22–40	TDT TDFT-E/	M 5 x 0.8		301		301
TTFPR/L 25-40-4	25	25	150	18	4	15	32-50	TDT TDFT-E/	M 5 x 0.8		302		302
TTFPR/L 25-50-4	25	25	150	18	4	15	42-60	TDT TDFT-E/	M 5 x 0.8		303		303
TTFPR/L 25-60-4	25	25	150	18	4	15	52–85	TDT TDFT-E/	M 5 x 0.8		304		304

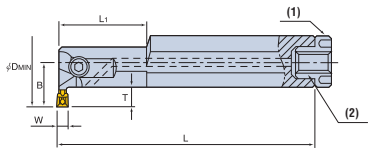
18739 - 18740 Boring bars for longitudinal turning and grooving

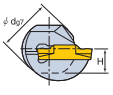
Applications
For holding cutting inserts
art. no. 18762.

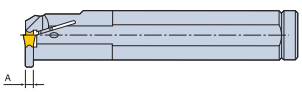
18739











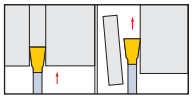
Type	Right 18739	...	Left 18740	...
TTIR/L 20-3C		101		101
TTIR 20-4C/L		102		102
TTIR 25-4C/L		103		103
TTIR 25-5C/L		104		104
TTIR 32-5C/L		105		105

Type	Ø d mm	L mm	L1 mm	B mm	H mm	W mm	A mm	Tmax mm	Ø Dmin mm	For cutting inserts	Seal (1)	Sealing threads (2)	Screw size
TTIR/L 20-3C	20	160	40	15.8	9.0	3	2.1	6.5	25	TDIT-E	PL20	M 6	M 5 x 0.8
TTIR/L 20-4C	20	160	40	15.8	9.0	4	2.9	6.5	25	TDIT-E	PL20	M 6	M 5 x 0.8
TTIR/L 25-4C	25	200	40	17.5	11.5	4	2.9	5.8	25	TDIT-E	PL25	R 1/8	M 5 x 0.8
TTIR/L 25-5C	25	200	40	17.3	11.5	5	3.9	6.5	31	TDIT-E	PL25	R 1/8	M 6 x 1.0
TTIR/L 32-5C	32	250	60	20.8	14.0	5	3.9	6.5	31	TDIT-E	PL32	R 1/8	M 6 x 1.0

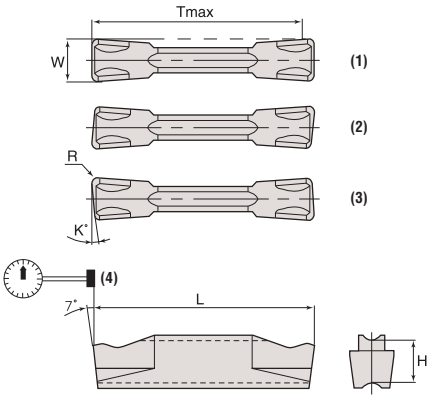
18747 Cutting inserts TDC

Design
Double-edged, with chip breaker type -C-.
Applications
For blades and clamp holder
art. no. 18710–18724.

Note:
(1) *= neutral,*
(2) *= left,*
(3) *= right,*
(4) *= tolerance +/- 0.1 mm.*



18747

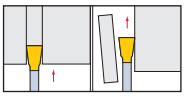


Applications								NK H 20		PK H 45	
Cemented carbide grade											
Type	W +/-0.05 mm	R	L mm	K	H mm	Tmax mm		18747	...	18747	...
TDC 2	2	0.2	20	–	4.7	19	10 pcs.		101		201
TDC 2-6R	2	0.2	20	6°	4.7	19	10 pcs.				202
TDC 2-6L	2	0.2	20	6°	4.7	19	10 pcs.		103		203
TDC 3	3	0.2	20	–	4.7	19	10 pcs.		104		204
TDC 3-6R	3	0.2	20	6°	4.7	19	10 pcs.		105		205
TDC 3-6L	3	0.2	20	6°	4.7	19	10 pcs.		106		206
TDC 4	4	0.3	20	–	4.7	19	10 pcs.		107		207
TDC 4-4R	4	0.3	20	4°	4.7	19	10 pcs.		108		208
TDC 4-4L	4	0.3	20	4°	4.7	19	10 pcs.		109		209
TDC 5	5	0.3	25	–	5.2	24	10 pcs.		110		210

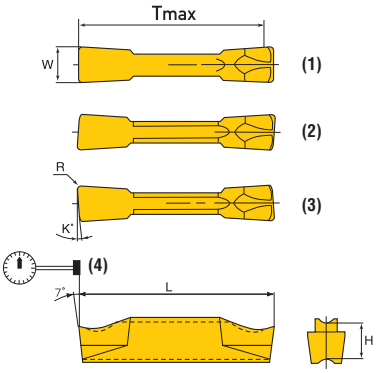
18748 Cutting inserts TDJ

Design
Double-edged, with chip breaker type -J-.
Applications
For blades and clamp holder art. no. 18710–18720 and 18727–18728.

Note:
(1) *= neutral,*
(2) *= left,*
(3) *= right,*
(4) *= tolerance +/- 0.1 mm.*



18748

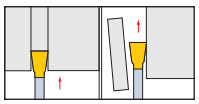


Applications								NK H 20		PK H 45	
Cemented carbide grade											
Type	W +/-0.05 mm	R	L mm	K	H mm	Tmax mm		18748	...	18748	...
TDJ 2	2	0.2	20	–	4.7	19	10 pcs.		101		201
TDJ 2-6R	2	0.2	20	6°	4.7	19	10 pcs.		102		202
TDJ 2-6L	2	0.2	20	6°	4.7	19	10 pcs.		103		203
TDJ 3	3	0.2	20	–	4.7	19	10 pcs.		104		204
TDJ 3-6R	3	0.2	20	6°	4.7	19	10 pcs.		105		205
TDJ 3-6L	3	0.2	20	6°	4.7	19	10 pcs.		106		206
TDJ 4	4	0.3	20	–	4.7	19	10 pcs.		107		207
TDJ 4-4R	4	0.3	20	4°	4.7	19	10 pcs.		108		208
TDJ 4-4L	4	0.3	20	4°	4.7	19	10 pcs.		109		209
TDJ 5	5	0.3	25	–	5.2	24	10 pcs.		110		210

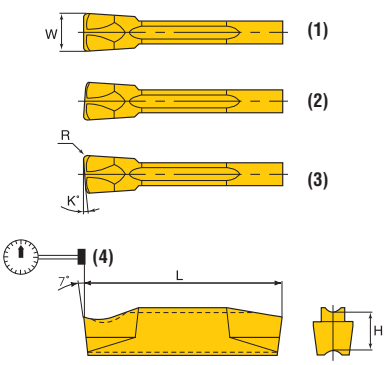
18750 Cutting inserts TSJ

Design
Single edged, with chip former type -J-.
Applications
For blades and clamp holder art. no. 18710–18720 and 18727–18728.

Note:
(1) *= neutral,*
(2) *= left,*
(3) *= right,*
(4) *= tolerance +/- 0.1 mm.*



18750



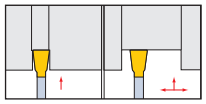
Applications								NK H 20		PK H 45	
Cemented carbide grade											
Type	W +/-0.05 mm	R	L mm	K	H mm			18750	...	18750	...
TSJ 3	3	0.2	20	–	4.7	10 pcs.			101		201
TSJ 3-6R	3	0.2	20	6°	4.7	10 pcs.			102		202
TSJ 3-6L	3	0.2	20	6°	4.7	10 pcs.					203
TSJ 4	4	0.3	20	–	4.7	10 pcs.			104		204
TSJ 4-4R	4	0.3	20	4°	4.7	10 pcs.					205
TSJ 5	5	0.3	25	–	5.2	10 pcs.			107		207

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

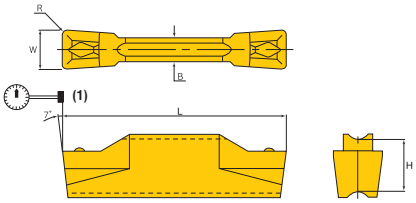
18752 Precision cutting inserts TDT-E

Design
Double-edged, with chip breaker type -T-.
Applications
For clamp holders and boring bars art. no. 18715–18720, 18727–18736 and 18743–18744.

Note:
(1) *= tolerance +/- 0.025 mm.*



18752

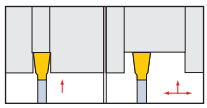


Applications / Cemented carbide grade							NK H 20		PMK H 42	
Type	W +/-0.02 mm	R +/-0.05	B mm	L mm	H mm		18752	...	18752	...
TDT 3.00E-0.40	3	0.4	2.2	20	4.7	10 pcs.	101		201	
TDT 4.00E-0.40	4	0.4	3.0	20	4.7	10 pcs.	102		202	
TDT 4.00E-0.80	4	0.8	3.0	20	4.7	10 pcs.	103			
TDT 5.00E-0.40	5	0.4	4.0	25	5.2	10 pcs.	104		204	
TDT 5.00E-0.80	5	0.8	4.0	25	5.2	10 pcs.	105		205	

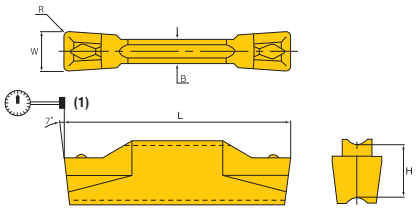
18754 Cutting inserts TDT-E

Design
Double-edged, with chip breaker type -T-.
Applications
For clamp holders and boring bars art. no. 18715–18720, 18727–18736 and 18743–18744.

Note:
(1) *= tolerance +/- 0.1 mm.*



18754

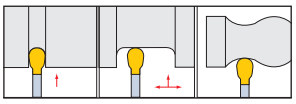


Applications / Cemented carbide grade							NK H 20		PMK H 42	
Type	W +/-0.05 mm	R	B mm	L mm	H mm		18754	...	18754	...
TDT 3E-0.4	3	0.4	2.2	20	4.7	10 pcs.	101		201	
TDT 4E-0.4	4	0.4	3.0	20	4.7	10 pcs.	102		202	

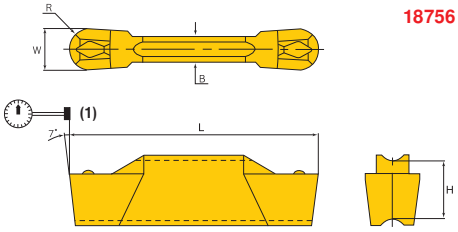
18756 Precision cutting inserts TDT-E

Design
Double-edged, with chip breaker type -T-.
Applications
For clamp holders and boring bars art. no. 18715–18720, 18727–18736 and 18743–18744.

Note:
(1) *= tolerance +/- 0.025 mm.*



18756

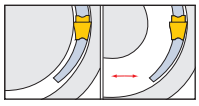


Applications / Cemented carbide grade							NK H 20		PMK H 42	
Type	W +/-0.02 mm	R +/-0.05	B mm	L mm	H mm		18756	...	18756	...
TDT 3.00E-1.50	3	1.5	2.2	20	4.7	10 pcs.	101		201	
TDT 4.00E-2.00	4	2.0	3.0	20	4.7	10 pcs.	102		202	
TDT 5.00E-2.50	5	2.5	4.0	25	5.2	10 pcs.	103		203	

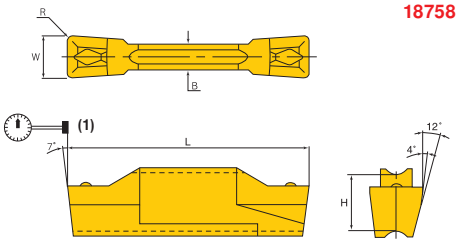
18758 Cutting inserts TDFT-E

Design
Double-edged, with chip breaker type -T-.
Applications
For clamp holders art. no. 18719–18724 and 18731–18736.

Note:
(1) *= tolerance +/- 0.1 mm.*



18758



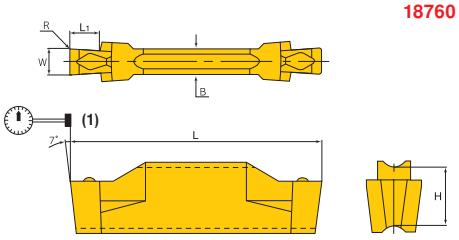
Applications / Cemented carbide grade							NK H 20		PMK H 42	
Type	W +/-0.02 mm	R	B mm	L mm	H mm		18758	...	18758	...
TDFT 3E-0.40R	3	0.4	2.2	20	4.7	10 pcs.	101		201	
TDFT 3E-0.40L	3	0.4	2.2	20	4.7	10 pcs.	102		202	
TDFT 4E-0.40R	4	0.4	3.0	20	4.7	10 pcs.	103		203	
TDFT 4E-0.40L	4	0.4	3.0	20	4.7	10 pcs.	104		204	

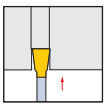
18760 Precision cutting inserts TDT

Design
Double-edged, with chip breaker type -T-.
Applications
For clamp holders and boring bars art. no. 18715–18720, 18727–18728 and 18739–18744.

Note:
(1) *= tolerance +/- 0.025 mm.*

18760





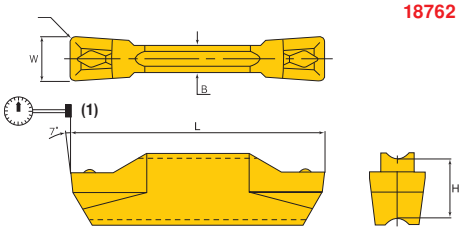
Applications								NK		PMK	
Cemented carbide grade								H 20		H 42	
Type	W +/-0.02 mm	R	B mm	L mm	L1 mm	H mm		18760	...	18760	...
TDT 1.00-0.00	1.00	0.00	2.2	20	2.5	4.7	10 pcs.		101		301
TDT 1.30-0.00	1.30	0.00	2.2	20	2.5	4.7	10 pcs.		102		302
TDT 1.60-0.10	1.60	0.10	2.2	20	2.5	4.7	10 pcs.		103		303
TDT 1.85-0.10	1.85	0.10	2.2	20	3.5	4.7	10 pcs.		104		304
TDT 2.15-0.15	2.15	0.15	2.2	20	3.5	4.7	10 pcs.		105		305
TDT 2.65-0.15	2.65	0.15	2.2	20	5.0	4.7	10 pcs.		106		306
TDT 3.15-0.15	3.15	0.15	2.2	20	5.0	4.7	10 pcs.		107		307
TDT 4.15-0.15	4.15	0.15	3.0	20	5.0	4.7	10 pcs.		108		308
TDT 5.15-0.15	5.15	0.15	4.0	25	5.0	5.2	10 pcs.				309

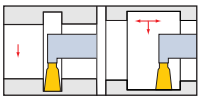
18762 Precision cutting inserts TDIT-E

Design
Double-edged.
Applications
For boring bars art. no. 18739–18744.

Note:
(1) *= tolerance +/- 0.025 mm.*

18762



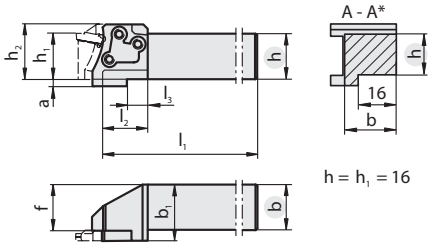


Applications							NK		PMK	
Cemented carbide grade							H 20		H 42	
Type	W +/-0.02 mm	R +/-0.05	B mm	L mm	H mm		18762	...	18762	...
TDIT 3.00E-0.40	3	0.4	2.2	20	4.7	10 pcs.		101		301
TDIT 4.00E-0.40	4	0.4	3.0	20	4.7	10 pcs.		102		302
TDIT 4.00E-0.80	4	0.8	3.0	20	4.7	10 pcs.		103		303
TDIT 5.00E-0.40	5	0.4	4.0	25	5.2	10 pcs.		104		304
TDIT 5.00E-0.80	5	0.8	4.0	25	5.2	10 pcs.		105		305

19650

CUTTING SOLUTIONS BY CERATIZIT

Modular basic holder MSS shank 0°



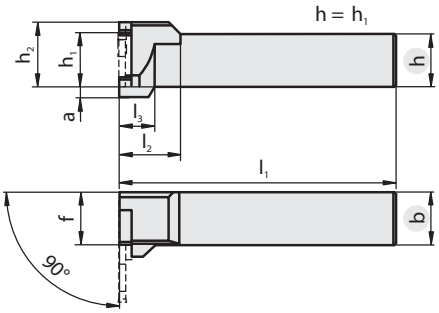
19650

Size	Designation	h mm	b mm	f mm	b_1 mm	h_2 mm	l_1 mm	l_2 mm	Right 19650 ...	Left 19650 ...
20	MSS-E20R/L00-2020J	20	20	20.1	24.3	24	110	20	101	201
25	MSS-E25R/L00-2525L	25	25	25.5	31.0	30	140	25	102	202
32	MSS-E32R/L00-3225N	32	25	25.5	31.0	38	160	32	103	203

19651

CUTTING SOLUTIONS BY CERATIZIT

Modular basic holder MSS shank 90°



19651

Size	Designation	h mm	b mm	f mm	h_2 mm	l_1 mm	l_2 mm	Right 19651 ...	Left 19651 ...
20	MSS-E20R/L90-2020J	20	20	20	24	110	20	101	201
25	MSS-E25R/L90-2525L	25	25	25	30	140	28	102	202
32	MSS-E32R/L90-3225N	32	25	32	38	160	34	103	203

Spare parts — **Clamping screw**

For size	Clamping screw	19699 ...
20	M 4 x 14	101
25	M 5 x 18	102
32	M 6 x 20	103

MSS – The modular grooving and threading system

Modern tools are modularly structured in order to cover the diversity of requirements in its totality.

System functions:
- Shank and insert holder are separated
- Uniform separating point for grooving and threading applications
- Stable, precise connection
- Can be extended with new “modules”
- Easy handling
- Application-optimised clamping function

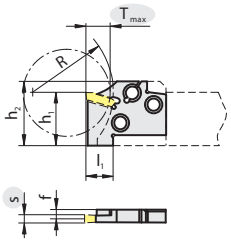
> Flexibility > Precision > Stability > Simplicity > Profitability > Completeness

19653 - 19658 Cutting Inserts GX/SX external for modular recessing system MSS

19653

CUTTING SOLUTIONS BY CERATIZIT

Inserts GX 16 (without parting inserts)



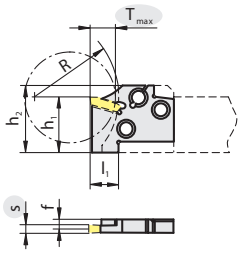
19653

Size	Designation	Tmax mm	f mm	l_1 mm	h_1 mm	h_2 mm	R mm	Indexable inserts	Right 19653	...	Left 19653	...
20	MSS-E20R/L12-GX16-1	12	3.74	13	20	24	30.0	GX16-1..		101		201
20	MSS-E20R/L12-GX16-2	12	3.40	13	20	24	30.0	GX16-2..		102		202
20	MSS-E20R/L12-GX16-3	12	2.93	13	20	24	30.0	GX16-3..		103		203
25	MSS-E25R/L12-GX16-1	12	5.25	13	25	30	37.5	GX16-1..		104		204
25	MSS-E25R/L12-GX16-2	12	4.90	13	25	30	37.5	GX16-2..		105		205
25	MSS-E25R/L12-GX16-3	12	4.43	13	25	30	37.5	GX16-3..		106		206
25	MSS-E25R/L12-GX16-4	12	3.80	13	25	30	37.5	GX16-4..		107		207

19654

CUTTING SOLUTIONS BY CERATIZIT

Inserts GX 24 (without parting inserts)



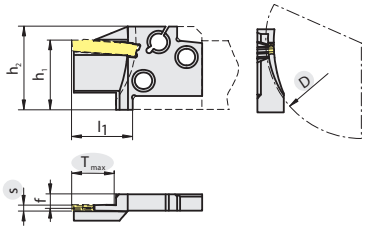
19654

Size	Designation	Tmax mm	f mm	l_1 mm	h_1 mm	h_2 mm	R mm	Indexable inserts	Right 19654	...	Left 19654	...
20	MSS-E20R/L21-GX24-2	21	3.40	22	20	24	30.0	GX24-2..		101		201
20	MSS-E20R/L21-GX24-3	21	3.00	22	20	24	30.0	GX24-3..		102		202
25	MSS-E25R/L21-GX24-2	21	4.90	22	25	30	37.5	GX24-2..		103		203
25	MSS-E25R/L21-GX24-3	21	4.43	22	25	30	37.5	GX24-3..		104		204
25	MSS-E25R/L21-GX24-4	21	3.80	22	25	30	37.5	GX24-4..		105		205
32	MSS-E32R/L21-GX24-2	21	4.95	22	32	38	48.0	GX24-2..		106		206
32	MSS-E32R/L21-GX24-3	21	4.43	22	32	38	48.0	GX24-3..		107		207
32	MSS-E32R/L21-GX24-4	21	3.80	22	32	38	48.0	GX24-4..		108		208

19655

CUTTING SOLUTIONS BY CERATIZIT

Inserts GX 24 axial (without cutting indexable inserts)



19655

Size	Designation	Tmax mm	f mm	l_1 mm	h_1 mm	h_2 mm	Dmin mm	Dmax mm	Indexable inserts	Right 19655	...	Left 19655	...
25	MSS-E25R/L15-GX24-2 A50-70	15	4.90	22	25	30	50	70	GX24-2..		101		201
25	MSS-E25R/L15-GX24-2 A70-100	16	4.90	22	25	30	70	100	GX24-2..		102		202
25	MSS-E25R/L15-GX24-2 A100-150	17	4.90	22	25	30	100	150	GX24-2..		103		203
25	MSS-E25R/L15-GX24-3 A50-70	15	4.43	22	25	30	50	70	GX24-3..		104		204
25	MSS-E25R/L15-GX24-3 A70-100	15	4.43	22	25	30	70	100	GX24-3..		105		205
25	MSS-E25R/L15-GX24-3 A100-150	15	4.43	22	25	30	100	150	GX24-3..		106		206
25	MSS-E25R/L15-GX24-3 A150-300	15	4.43	22	25	30	150	300	GX24-3..		107		207

Continued

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

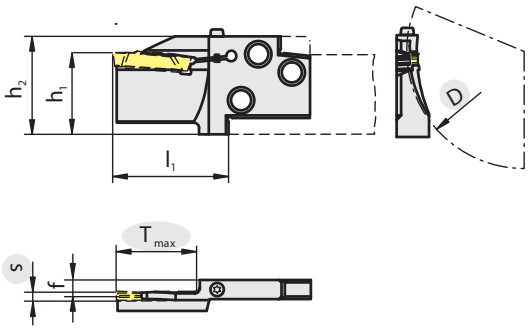
Continued

19656

CUTTING SOLUTIONS BY CERATIZIT

Inserts GX 24 axial long
(without cutting indexable inserts)

Note:
Axial modules in long version can be clamped on both sides.



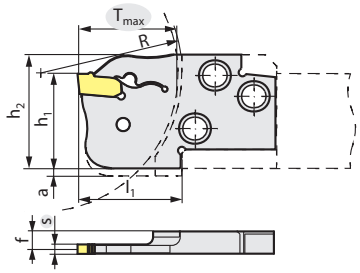
19656

Size	Designation	Tmax mm	f mm	l_1 mm	h_1 mm	h_2 mm	Dmin mm	Dmax mm	Indexable inserts	Right 19656	...	Left 19656	...
25	MSS-E25R/L21-GX24-3 AS50-70	21	4.43	35	25	30	50	70	GX24-3..		**101**		**201**
25	MSS-E25R/L21-GX24-3 AS70-100	21	4.43	35	25	30	70	100	GX24-3..		**102**		**202**
25	MSS-E25R/L21-GX24-3 AS100-150	21	4.43	35	25	30	100	150	GX24-3..		**103**		**203**
25	MSS-E25R/L21-GX24-3 AS150-300	21	4.43	35	25	30	150	300	GX24-3..		**104**		**204**
25	MSS-E25R/L25-GX24-4 AS50-70	25	3.80	35	25	30	50	70	GX24-4..		**105**		**205**
25	MSS-E25R/L25-GX24-4 AS70-100	25	3.80	35	25	30	70	100	GX24-4..		**106**		**206**
25	MSS-E25R/L25-GX24-4 AS100-150	25	3.80	35	25	30	100	150	GX24-4..		**107**		**207**
25	MSS-E25R/L25-GX24-4 AS150-300	25	3.80	35	25	30	150	300	GX24-4..		**108**		**208**

19658

CUTTING SOLUTIONS BY CERATIZIT

Inserts SX external
(without cutting indexable inserts)



19658

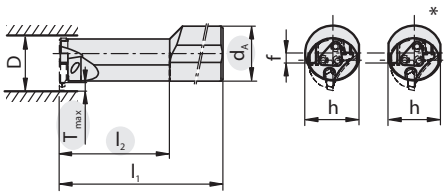
Size	Designation	S mm	Tmax mm	f mm	l_1 mm	h_1 mm	h_2 mm	R mm	a mm	Indexable inserts	Right 19658	...	Left 19658	...
20	MSS-E20R/L20-SX2	2	20	3.57	22	20	24	30.0	3	SX..2		**101**		**201**
20	MSS-E20R/L20-SX3	3	20	3.20	22	20	24	30.0	3	SX..3		**102**		**202**
25	MSS-E25R/L20-SX2	2	20	5.07	22	25	30	37.5	-	SX..2		**103**		**203**
25	MSS-E25R/L25-SX3	3	25	4.70	27	25	30	37.5	-	SX..3		**104**		**204**
25	MSS-E25R/L35-SX3	4	35	4.70	37	25	30	37.5	-	SX..3		**105**		**205**
25	MSS-E25R/L25-SX4	4	25	4.30	27	25	30	37.5	-	SX..4		**106**		**206**
25	MSS-E25R/L35-SX4	4	35	4.30	37	25	30	37.5	-	SX..4		**107**		**207**

19660 - 19661 Modular recessing system MSS boring bars

19660

CUTTING SOLUTIONS BY CERATIZIT

Modular recessing system
MSS boring bar 1.5 x D



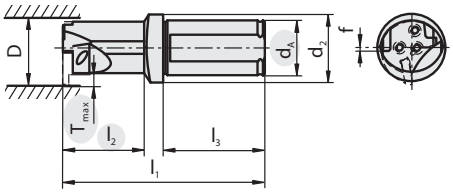
19660

Size	Designation	l_2 mm	d_1 mm	d_2 mm	f mm	l_1 mm	l_3 mm	T_{max} mm	$D_{min.}$ mm	Insert	Right 19660	...	Left 19660	...
16	MSS-I16R/L90-1.5D-N	24	20	25	1.0	82	50	4	20	MSS-I16R/L		101		201
20	MSS-I20R/L90-1.5D-N	30	20	25	1.0	87	50	5	25	MSS-I20R/L		102		202
25	MSS-I25R/L90-1.5D-N	38	25	32	1.5	102	56	6	32	MSS-I25R/L		103		203
32	MSS-I32R/L90-1.5D-N	48	32	40	2.0	119	60	9	40	MSS-I32R/L		104		204

19661

CUTTING SOLUTIONS BY CERATIZIT

Modular recessing system
MSS boring bar 2.5 x D



19661

Size	Designation	l_2 mm	d_1 mm	f mm	l_1 mm	T_{max} mm	$D_{min.}$ mm	Insert	Right 19661	...	Left 19661	...
16	MSS-I16R/L90-2.5D-N	40	20	4.5	180	4	20	MSS-I16R/L		101		201
20	MSS-I20R/L90-2.5D-N	50	25	6.0	200	5	25	MSS-I20R/L		102		202
25	MSS-I25R/L90-2.5D-N	63	32	7.0	250	6	32	MSS-I25R/L		103		203
32	MSS-I32R/L90-2.5D-N	80	40	9.5	300	9	40	MSS-I32R/L		104		204

Spare parts — **Clamping screw**

For size	Clamping screw	19699	...
16	M 2.5 x 10.0		104
20	M 3.0 x 11.0		105
25	M 3.5 x 12.5		106
32	M 4.5 x 17.0		107

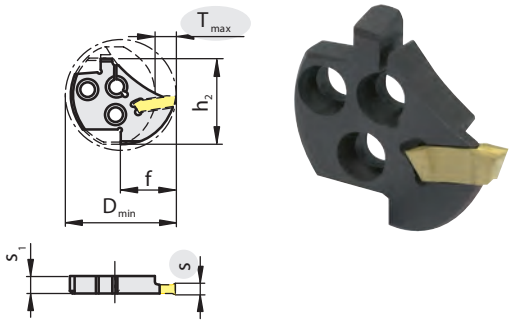
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

19663

CUTTING SOLUTIONS BY CERATIZIT

Inserts GX 09 (without parting inserts)

19663



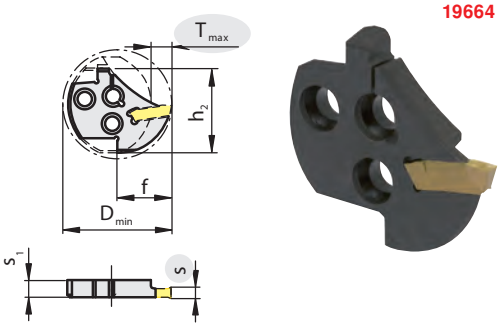
Size	Designation	Tmax mm	f mm	s_1 mm	h_2 mm	$D_{min.}$ mm	Indexable inserts	Right 19663	...	Left 19663	...
16	MSS-I16R/L04-GX09-1	4	10.0	3.8	16.4	20	GX09-1..		101		201
16	MSS-I16R/L04-GX09-2	4	10.0	3.8	16.4	20	GX09-2..		102		202
20	MSS-I20R/L05-GX09-1	5	12.0	3.8	20.4	25	GX09-1..		103		203
20	MSS-I20R/L05-GX09-2	5	12.0	3.8	20.4	25	GX09-2..		104		204
25	MSS-I25R/L06-GX09-1	6	15.5	3.8	24.9	32	GX09-1..		105		205
25	MSS-I25R/L06-GX09-2	6	15.5	3.8	24.9	32	GX09-2..		106		206

19664

CUTTING SOLUTIONS BY CERATIZIT

Inserts GX 16 (without parting inserts)

19664



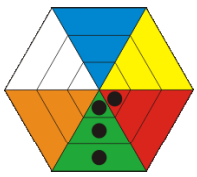
Size	Designation	Tmax mm	f mm	s_1 mm	h_2 mm	$D_{min.}$ mm	Indexable inserts	Right 19664	...	Left 19664	...
32	MSS-I32R/L09-GX16-1	9	20	5.9	32.2	40	GX16-1..		101		201
32	MSS-I32R/L09-GX16-2	9	20	5.9	32.2	40	GX16-2..		102		202
32	MSS-I32R/L09-GX16-3	9	20	5.9	32.2	40	GX16-3..		103		203
32	MSS-I32R/L09-GX16-4	9	20	5.9	32.2	40	GX16-4..		104		204

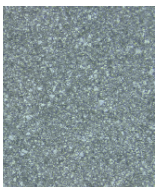
Info Modular burring system MSS

Grade description

CUTTING SOLUTIONS BY CERATIZIT

H216T
HW-K15



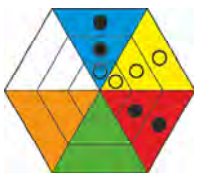


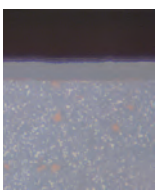
Ductility
0 2 4 6 8 10

Wear resistance
0 2 4 6 8 10

Properties/Application:
- Ideally suited to aluminium
- High wear resistance
- High heat resistance
- Low adhesion

CTCP335
HC-P35
HC-M30
HC-K35



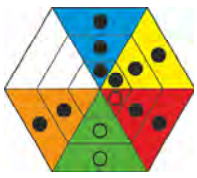


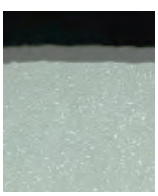
Ductility
0 2 4 6 8 10

Wear resistance
0 2 4 6 8 10

Properties/Application:
- Very good wear resistance
- Good oxidation resistance
- High toughness
- Good heat resistance

CTP1340
HC-P30
HC-M25
HC-K30





Ductility
0 2 4 6 8 10

Wear resistance
0 2 4 6 8 10

Properties/Application:
- Excellent "all-round grade"
- Ideal for stainless steels
- High cutting edge stability

19670 - 19672 Cutting inserts for modular recessing system MSS

19670

CUTTING SOLUTIONS BY CERATIZIT

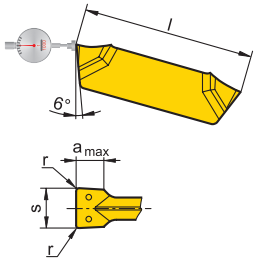
Cutting inserts for system GX-E

19670

- 27P

- M40

Applications						P M K S		N	
Cemented carbide grade						CTP1340		H216T	
Coating						PVD		uncoated	
Designation	s mm	l mm	r mm	a_{max} mm		19670	...	19670	...
GX09-1E2.00N0.20-M40	2	9	0.2	1.5	10 pcs.		101		
GX09-2E3.00N0.30-M40	3	9	0.3	2.0	10 pcs.		102		
GX16-1E2.00N0.20-27P	2	16	0.2	2.0	10 pcs.				201
GX16-1E2.00N0.20-M40	2	16	0.2	2.0	10 pcs.		103		
GX16-2E3.00N0.30-27P	3	16	0.3	3.0	10 pcs.				202
GX16-2E3.00N0.30-M40	3	16	0.3	3.0	10 pcs.		104		
GX16-3E4.00N0.40-27P	4	16	0.4	3.5	10 pcs.				203
GX16-3E4.00N0.40-M40	4	16	0.4	3.5	10 pcs.		105		
GX24-2E3.00N0.30-27P	3	24	0.3	3.5	10 pcs.				204
GX24-2E3.00N0.30-M40	3	24	0.3	3.5	10 pcs.		106		
GX24-3E4.00N0.40-27P	4	24	0.4	4.0	10 pcs.				205
GX24-3E4.00N0.40-M40	4	24	0.4	4.0	10 pcs.		107		



19671

CUTTING SOLUTIONS BY CERATIZIT

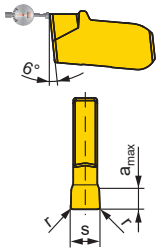
Cutting inserts for system SX

19671

- 27P

- M2

Applications						P M K S		N	
Cemented carbide grade						CTP1340		H216T	
Coating						PVD		uncoated	
Designation	s mm	l mm	r mm	a_{max} mm		19671	...	19671	...
SX E2.00N0.20-27P	2	11	0.2	1.5	10 pcs.				201
SX E2.00N0.20-M2	2	11	0.2	1.5	10 pcs.		101		
SX E3.00N0.30-27P	3	11	0.3	2.0	10 pcs.				202
SX E3.00N0.30-M2	3	11	0.3	2.0	10 pcs.		102		
SX E4.00N0.40-27P	4	13	0.4	2.5	10 pcs.				203

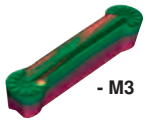


19672

CUTTING SOLUTIONS BY CERATIZIT

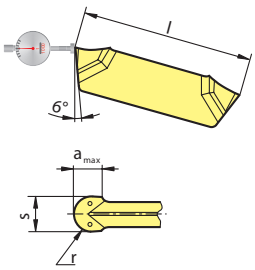
Cutting inserts for system GX-R

19672



- M3

Applications						P M K S		P K	
Cemented carbide grade						CTP1340		CTCP335	
Coating						PVD		Ti(C,N)+Al2O3	
Designation	s mm	l mm	r mm	a_{max} mm		19672	...	19672	...
GX16-2R1.50N	3	16.0	1.5	1.5	10 pcs.		101		
GX16-3R2.00N	4	16.0	2.0	2.0	10 pcs.		102		
GX16-3R2.50N	5	16.0	2.5	2.5	10 pcs.		103		
GX24-2R1.50N-M3	3	24.4	1.5	1.5	10 pcs.				201
GX24-3R2.00N-M3	4	24.4	2.0	2.5	10 pcs.				202
GX24-3R3.00N-M3	5	24.4	2.5	3.0	10 pcs.				203



= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

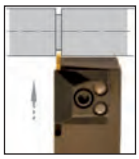
Clamp holder for recessing system DED

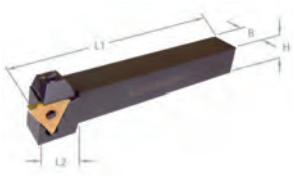
Dümmel WERKZEUGFABRIK

18765

Design
Solid clamp holder from 42 CrMo4V tempered toapprox. 1300 N/mm². Powerful clamping element guided by two cylinderpins.

Applications
For three-edged indexable inserts (art. no. 18768–18770).





Holder R/L..1-D grooving depth to 4 mm

Designation	H +/- 0.1 mm	B +/- 0.1 mm	L1 mm	L2 mm	T max. mm	For grooving inserts	right 18765	...	left 18765	...
R/L 207.1212.1-D	12	12	100	24	4	DED.00.. / DED.01..		101		201
R/L 207.1616.1-D	16	16	125	22	4	DED.00.. / DED.01..		102		202
R/L 207.2020.1-D	20	20	125	21	4	DED.00.. / DED.01..		103		203
R/L 207.2525.1-D	25	25	150	-	4	DED.00.. / DED.01..		104		204

Holder R/L..2-D grooving depth to 6 mm

Designation	H +/- 0.1 mm	B +/- 0.1 mm	L1 mm	L2 mm	T max. mm	For grooving inserts	right 18765	...	left 18765	...
R/L 207.1212.2-D	12	12	100	24	6	DED.02..		105		205
R/L 207.1616.2-D	16	16	125	22	6	DED.02..		106		206
R/L 207.2020.2-D	20	20	125	21	6	DED.02..		107		207
R/L 207.2525.2-D	25	25	150	-	6	DED.02..		108		208

Holder R/L..3-D grooving depth to 6 mm

Designation	H +/- 0.1 mm	B +/- 0.1 mm	L1 mm	L2 mm	T max. mm	For grooving inserts	right 18765	...	left 18765	...
R/L 207.1212.3-D	12	12	100	24	6	DED.03..		109		209
R/L 207.1616.3-D	16	16	125	22	6	DED.03..		110		210
R/L 207.2020.3-D	20	20	125	21	6	DED.03..		111		211
R/L 207.2525.3-D	25	25	150	-	6	DED.03..		112		212

Holder R/L..4-D grooving depth to 6 mm

Designation	H +/- 0.1 mm	B +/- 0.1 mm	L1 mm	L2 mm	T max. mm	For grooving inserts	right 18765	...	left 18765	...
R/L 207.1616.4-D	16	16	125	22	6	DED.04.. / DED.05..		113		213
R/L 207.2020.4-D	20	20	125	21	6	DED.04.. / DED.05..		114		214
R/L 207.2525.4-D	25	25	150	-	6	DED.04.. / DED.05..		115		215

Spare parts	Clamping screw		Guide pin		Adjustable clamp right		Adjustable clamp left	
For holders	18767	...	18767	...	18767	...	18767	...
R/L 207...1.2.3.4-D		101		102				
R/L 0.780...2.3.4-D		101		102				
R/L 207...1.2.3-D						103		105
R/L 0.780...2.3.-D						103		105
R/L 207...4-D						104		106
R/L 0.780...4.-D						104		106

For suitable indexable inserts, see next page

18768 - 18770 Indexable inserts for recessing system DED

Design
- 3 cutting edges
- Sintered version
- Positive, ground cutting edge geometries
- Extremely soft cut

18768

Dümmel WERKZEUGFABRIK

- For locking grooves in accordance with DIN 471/472

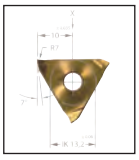
- Low cutting forces
- Cutting-off insert with chip breaker
- High thermal and chemical stability
- Low friction coefficients

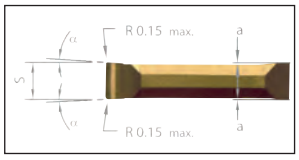
Applications

Universal use for practically every material. Limited use for dry machining.

Quality

Cemented carbide ultra-fine grain HC 8620/ TiAlN-coated.



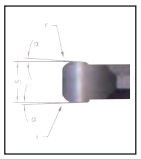


Designation	Groove dimension mm	S -0.05 mm	Clearance angle Alpha bottom	Clearance angle Alpha top	a +/-0.02 mm	for Clamp holder type	18768	...
DED.0050.00-D	0.50	0.57	0.5°	1°	0.07	R/L..1-D		101
DED.0060.00-D	0.60	0.67	0.5°	1°	0.07	R/L..1-D		102
DED.0070.00-D	0.70	0.77	0.5°	1°	0.08	R/L..1-D		103
DED.0080.00-D	0.80	0.87	0.5°	1°	0.08	R/L..1-D		104
DED.0090.00-D	0.90	0.97	0.5°	1°	0.08	R/L..1-D		105
DED.0100.00-D	1.00	1.07	0.5°	1°	0.09	R/L..1-D		106
DED.0110.00-D	1.10	1.24	3°	3°	0.15	R/L..1-D		107
DED.0130.00-D	1.30	1.44	3°	3°	0.15	R/L..1-D		108
DED.0160.00-D	1.60	1.74	3°	3°	0.20	R/L..1-D		110
DED.0185.00-D	1.85	1.99	3°	3°	0.20	R/L..1-D		111
DED.0215.00-D	2.15	2.29	3°	3°	0.20	R/L..2-D		113
DED.0265.00-D	2.65	2.79	3°	3°	0.20	R/L..2-D		115
DED.0315.00-D	3.15	3.29	3°	3°	0.20	R/L..3-D		117
DED.0415.00-D	4.15	4.29	3°	3°	0.20	R/L..4-D		119
DED.0515.00-D	5.15	5.29	3°	3°	0.20	R/L..4-D		120

18769

Dümmel WERKZEUGFABRIK

- For copy and precision turning

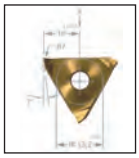


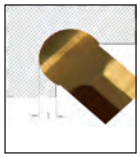
Designation	S +0.03 mm	r mm	Clearance angle Alpha bottom	Clearance angle Alpha top	For clamp holder type	18769	...
DED.0150.02-D	1.5	0.2	4°	3°	R/L..1-D		101
DED.0200.02-D	2.0	0.2	4°	3°	R/L..1-D		102
DED.0200.04-D	2.0	0.4	4°	3°	R/L..1-D		103
DED.0300.02-D	3.0	0.2	4°	3°	R/L..2-D		105
DED.0300.06-D	3.0	0.6	4°	3°	R/L..2-D		106
DED.0300.08-D	3.0	0.8	4°	3°	R/L..2-D		107
DED.0400.02-D	4.0	0.2	4°	3°	R/L..3-D		109
DED.0400.08-D	4.0	0.8	4°	3°	R/L..3-D		110
DED.0400.12-D	4.0	1.2	4°	3°	R/L..3-D		111

18770 101-104

Dümmel WERKZEUGFABRIK

- Full radius for grooving 0.5 to 1.6 mm groove width



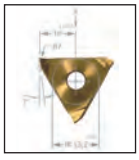


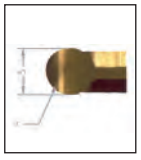
Designation	S +/-0.05 mm	r mm	T mm	For clamp holder type	18770	...
DED.0002.05-D	0.5	0.25	0.20	R/L..1-D		101
DED.0005.10-D	1.0	0.50	0.35	R/L..1-D		102
DED.0006.12-D	1.2	0.60	0.40	R/L..1-D		103
DED.0008.16-D	1.6	0.80	0.55	R/L..1-D		104

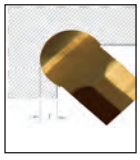
18770 106-110

Dümmel WERKZEUGFABRIK

- Full radius for grooving 2.0 to 5.0 mm groove width





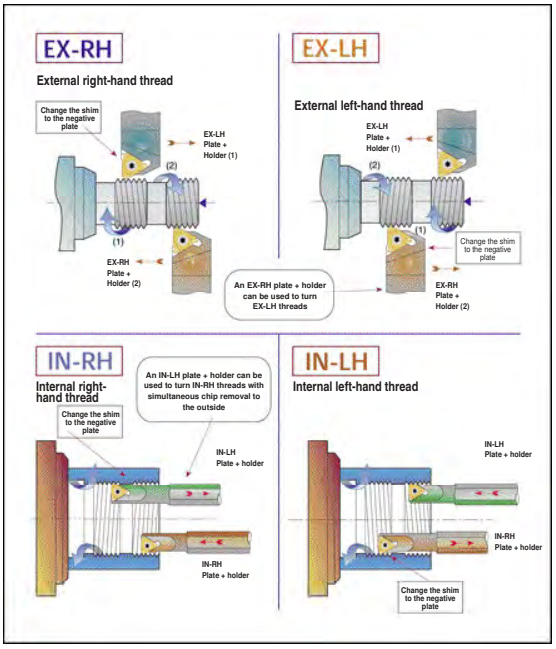


Designation	S +/-0.05 mm	r mm	T mm	For clamp holder type	18770	...
DED.0010.20-D	2.0	1.00	0.70	R/L..2-D		106
DED.0012.25-D	2.5	1.25	0.85	R/L..2-D		107
DED.0015.30-D	3.0	1.50	1.00	R/L..3-D		108
DED.0020.40-D	4.0	2.00	1.20	R/L..4-D		109
DED.0025.50-D	5.0	2.50	1.50	R/L..4-D		110

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info — Turning threads

HW 5615 (K10 - K30) Uncoated carbide grade for non-ferrous metals, aluminium and cast iron.
HC 5615 (P25 - P35) TiN-coated fine grain quality for heat-treated steels and high-alloy steel (25 HRC upwards) at medium to low cutting speeds.
HC 5630 (P20 - P50 / K25 - K40) TiAlN-coated ultra-fine grain grade for stainless steels and exotic materials and for general machining at medium to high cutting speeds.



Carbide grades and choice of cutting speeds

	Uncoated HW 5615	Coated HC 5615	Coated HC 5630
Non-ferrous metals and aluminium	120 - 200	-	140 - 290
General structural steels	-	100 - 200	90 - 240
High-alloy structural steels	-	80 - 160	80 - 170
Alloy steel	-	50 - 120	90 - 130
Cast steel	-	90 - 150	120 - 180
Stainless steels	-	-	70 - 130
Cast iron	60 - 100	-	70 - 160

Cutting speeds are specified with a tolerance range.
In most cases, selection of a medium cutting speed to start with is recommended. For high-strength steels, the cutting speed must be reduced.

18774 - 18775 Threaded plate set

ATORN®

Design
- In case

Applications
Universal for producing a broad range of thread pitches for a limited quantity of workpcs..

18774

Set contents
1 **clamp holder right**
1 **each of cemented-carbide threaded plate grade HC 5615, part profile 60°,** 16 .. A60 (pitch 0.5–1.5 mm) and 16 .. G60 (pitch 1.75–3.0 mm)
1 **cemented-carbide threaded plate grade HC 5615, full profile 60°,** Pitch 0.75/1.00/1.25/1.50/1.75/2.00/2.50/3.00 mm
1 **TORX® key**
1 **replacement clamping screw**

Male thread set	Holder Ø mm	18774	...
KEG 20	20		102

Female thread set	Holder Ø mm	18775	...
KIG 20	20		102

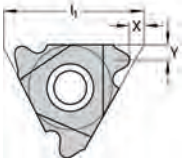
18776 Cemented-carbide threaded plates external

ATORN®

Design
Right, **part profile 60°,** external, ground.

Note:
Different pitches and left version are deliverable on request.

18776



Applications							P	
Cemented carbide grade							HC 5615	
Coating							coated	
Designation	Pitch mm	Pitch TPI	l_1 mm	x mm	y mm		18776	...
16 ER A60	0.50–1.5	48–16	16	0.8	0.9	10 pcs.		302
16 ER G60	1.75–3.0	14–8	16	1.2	1.7	10 pcs.		303

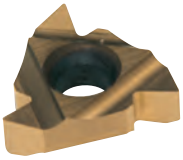
18777 Cemented-carbide threaded plates internal

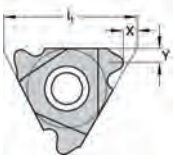
ATORN®

Design
Right, **part profile 60°,** internal, ground.

Note:
Different pitches and left version are deliverable on request.

18777





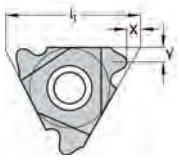
Applications							P	
Cemented carbide grade							HC 5615	
Coating							coated	
Designation	Pitch mm	Pitch TPI	l_1 mm	x mm	y mm		18777	...
16 IR A60	0.50–1.5	48–16	16	0.8	0.9	10 pcs.		302
16 IR G60	1.75–3.0	14–8	16	1.2	1.7	10 pcs.		303

18778 Cemented-carbide threaded plates DIN 405 external

ATORN®

Design
Right, **full profile Round thread,** external, ground.

Note:
Different pitches and left version are deliverable on request.



18778

Applications						P
Cemented carbide grade						HC 5615
Coating						coated
Designation	**Pitch TPI**	**l_1 mm**	**x mm**	**y mm**		**18778 ...**
16 ER 10 RD	10	16	1.1	1.2	10 pcs.	101
16 ER 8 RD	8	16	1.4	1.3	10 pcs.	102
16 ER 6 RD	6	16	1.5	1.7	10 pcs.	103

18780 Clamp holder (male thread)

ATORN®

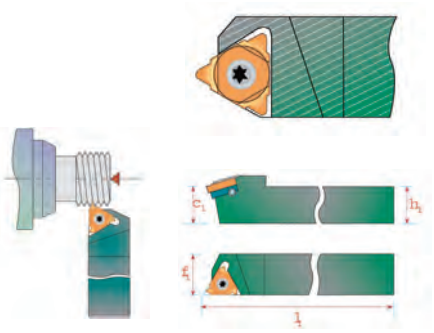
Note:
Different shank diameters are deliverable on request.

18780 103-118
Design
Right, pitch angle 1.5°.

18780 203-218
Design
Left, pitch angle 1.5°.

18780

18780 116



					Right		Left	
Designation	**$h_1 = c_1$ mm**	**l_1 mm**	**f_1 mm**	**Clamping screw**	**18780**	**...**	**18780**	**...**
SER/L 1616 H16	16	100	16	S 16		103		203
SER/L 2020 K16	20	125	20	S 16		106		206
SER/L 2525 M16	25	150	25	S 16		109		209
SER/L 2525 M22	25	150	25	S 22		112		212
SER/L 3232 P22	32	170	32	S 22		115		215
SER/L 3232 P22U	32	170	32	S 22		116		
SER/L 2525 M27	25	150	32	S 27		117		217
SER/L 3232 P27	32	170	32	S 27		118		218

18781 Cemented-carbide threaded plates external

ATORN®

Design
Full profile ISO, metric 60°, external, ground.

Note:
Different pitches are deliverable on request.

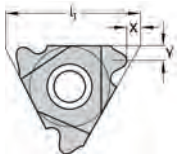
18781 210-226
Design
Right.

18781 310-335
Design
Right.

18781 410-435
Design
Right.

18781 510-535
Design
Left.

18781



Applications						N M K	P	N P M K	P
Cemented carbide grade						HW 5615	HC 5615	HC 5630	HC 5615
Coating						uncoated	coated	coated	coated
Designation	**Pitch mm**	**l_1 mm**	**x mm**	**y mm**		**18781 ...**	**18781 ...**	**18781 ...**	**18781 ...**
16 ER/L 0.5 ISO	0.50	16	0.6	0.6	10 pcs.	210	310	410	510
16 ER/L 0.75 ISO	0.75	16	0.6	0.6	10 pcs.	211	311	411	511
16 ER/L 0.8 ISO	0.80	16	0.6	0.6	10 pcs.	212	312	412	512
16 ER/L 1.0 ISO	1.00	16	0.7	0.7	10 pcs.	213	313	413	513
16 ER/L 1.25 ISO	1.25	16	0.8	0.9	10 pcs.	214	314	414	514
16 ER/L 1.5 ISO	1.50	16	0.8	1.0	10 pcs.	215	315	415	515
16 ER/L 1.75 ISO	1.75	16	0.9	1.2	10 pcs.	216	316	416	516
16 ER/L 2.0 ISO	2.00	16	1.0	1.3	10 pcs.	217	317	417	517
16 ER/L 2.5 ISO	2.50	16	1.1	1.5	10 pcs.	218	318	418	518
16 ER/L 3.0 ISO	3.00	16	1.2	1.6	10 pcs.	219	319	419	519
22 ER/L 3.5 ISO	3.50	22	1.6	2.3	10 pcs.	225	325	425	525
22 ER/L 4.0 ISO	4.00	22	1.6	2.3	10 pcs.	226	326	426	526
22 ER/L 4.5 ISO	4.50	22	1.7	2.4	10 pcs.		327	427	527
22 ER/L 5.0 ISO	5.00	22	1.7	2.5	10 pcs.		328	428	528
27 ER/L 6.0 ISO	6.00	27	2.0	2.9	10 pcs.		335	435	535

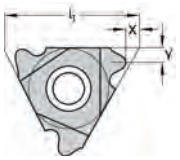
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18783 Cemented-carbide threaded plates external

ATORN®

Design
Right, **full profile BSW 55°,** external, ground.

Note:
Different pitches and left version are deliverable on request.



18783

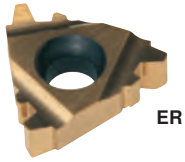
Applications Cemented carbide grade Coating						P HC 5615 coated		N P M K HC 5630 coated	
Designation	**Pitch TPI**	**l_1 mm**	**x mm**	**y mm**		**18783**	**...**	**18783**	**...**
16 ER 28 W	28	16	0.6	0.7	10 pcs.		319		419
16 ER 19 W	19	16	0.8	1.0	10 pcs.		320		420
16 ER 16 W	16	16	0.9	1.1	10 pcs.		322		422
16 ER 14 W	14	16	1.0	1.2	10 pcs.		323		423
16 ER 11 W	11	16	1.1	1.5	10 pcs.		325		425

18785 Cemented-carbide threaded plates DIN 103 external

ATORN®

Design
Right, **full profile trapezoidal 30°,** external, ground.

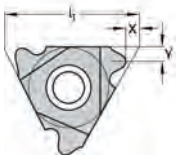
Note:
Different pitches and left version are deliverable on request.



ER

18785

U ER



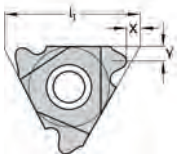
Applications Cemented carbide grade Coating						P HC 5615 coated		N P M K HC 5630 coated	
Designation	**Pitch mm**	**l_1 mm**	**x mm**	**y mm**		**18785**	**...**	**18785**	**...**
16 ER 2TR	2	16	1.0	1.3	10 pcs.		310		
16 ER 3TR	3	16	1.3	1.5	10 pcs.		311		411
22 ER 4TR	4	22	1.8	1.9	10 pcs.		315		415
22 ER 5TR	5	22	2.0	2.4	10 pcs.		316		416
22 U ER 6TR	6	22 U	2.0	11.0	10 pcs.		317		417
22 U ER 7TR	7	22 U	2.3	11.0	10 pcs.		318		418

18787 Cemented-carbide threaded plates external

ATORN®

Design
Right, **full profile UN,** external, ground.

Note:
Different pitches and left version are deliverable on request.



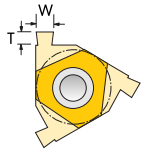
18787

Applications Cemented carbide grade Coating						P HC 5615 coated	
Designation	**Pitch TPI**	**l_1 mm**	**x mm**	**y mm**		**18787**	**...**
16 ER 20 UN	20	16	0.8	0.9	10 pcs.		110
16 ER 18 UN	18	16	0.8	1.0	10 pcs.		111
16 ER 16 UN	16	16	0.9	1.1	10 pcs.		112
16 ER 12 UN	12	16	1.1	1.4	10 pcs.		115

18788 Cemented-carbide indexable inserts for o-rings, external

ATORN®

Applications
For clamp holder, external right or internal left.



18788

Applications Cemented carbide grade Coating				N P M K HC 5640 coated	
Designation	**W mm**	**T mm**		**18788**	**...**
16 ER/IL 1.00	1.00	1.40	10 pcs.		401
16 ER/IL 1.20	1.20	1.60	10 pcs.		402
16 ER/IL 1.40	1.40	1.80	10 pcs.		403
16 ER/IL 1.70	1.70	2.00	10 pcs.		404
16 ER/IL 1.95	1.95	2.00	10 pcs.		405
16 ER/IL 2.25	2.25	2.25	10 pcs.		406

18786 Cemented-carbide indexable inserts for grooving

ATORN®

Applications
For clamp holder, external right or internal left.

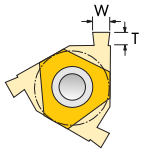
18786

Applications					P K	
Cemented carbide grade					HC 5640	
Coating					coated	
Designation	**R +/- 0.04 mm**	**T mm**		**Suitable for shim**	**18786**	**...**
16 ER/IL R 0.5	0.5	1.4	10 pcs.	AE 16-0		**401**
16 ER/IL R 0.6	0.6	1.6	10 pcs.	AE 16-0		**402**
16 ER/IL R 0.9	0.9	2.0	10 pcs.	AE 16-0		**403**
16 ER/IL R 1.0	1.0	2.0	10 pcs.	AE 16-0		**404**
16 ER/IL R 1.1	1.1	2.15	10 pcs.	AE 16-0		**405**
16 ER/IL R 1.2	1.2	2.25	10 pcs.	AE 16-0		**406**

18802 Cemented-carbide indexable inserts for o-rings, internal

ATORN®

Applications
For clamp holder internal right or external left.



18802

Applications				N P M K	
Cemented carbide grade				HC 5640	
Coating				coated	
Designation	**W mm**	**T mm**		**18802**	**...**
16 IR/EL 1.00	1.00	1.40	10 pcs.		**401**
16 IR/EL 1.20	1.20	1.60	10 pcs.		**402**
16 IR/EL 1.40	1.40	1.80	10 pcs.		**403**
16 IR/EL 1.70	1.70	2.00	10 pcs.		**404**
16 IR/EL 1.95	1.95	2.00	10 pcs.		**405**
16 IR/EL 2.25	2.25	2.25	10 pcs.		**406**

18790 Mini threaded plate sets

ATORN®

Design
For female thread, part profile, right.
Incl. 1 TX key and 2 replacement screws.

18790 101
Contents KU 60 M
1 boring bar, shank 12 mm (art. no. 18791 101),
10 threaded plates part profile metric 60° for pitches 0.5–1.25 (art. no. 18793 101).

18790 103
Contents KM 60 M
1 boring bar, shank 16 mm (art. no. 18791 102),
10 threaded plates part profile metric 60° for pitches 0.5–1.5 (art. no. 18793 102).

18790

	18790	**...**
KU 60 M		**101**
KM 60 M		**103**

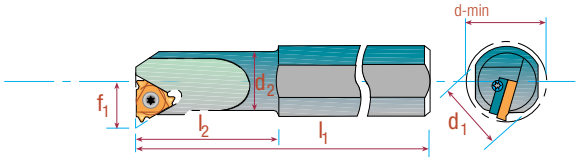
18791 Mini boring bars

ATORN®

Design
Female thread, steel.

18791 101-102
Design
Right.

18791 201-202
Design
Left.



18791

								Right		Left	
Designation	**d_1 mm**	**d_2 mm**	**l_1 mm**	**l_2 mm**	**d min. mm**	**f_1 mm**	**Clamping screw**	**18791**	**...**	**18791**	**...**
SIR/L 0005 H06	12	5.1	100	12	6.0	4.3	S 06		**101**		**201**
SIR/L 0007 K08	16	6.6	125	18	7.8	5.3	S 08		**102**		**202**

18792 Clamping screws

Applications
For mini clamp holder (art. no. 18791).

18792

	TORX®-Size		**18792**	**...**
S 06	T 6	10 pcs.		**101**
S 08	T 6	10 pcs.		**102**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

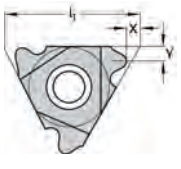
18793 Mini threaded plate, internal

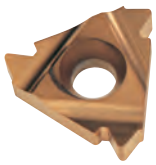
ATORN®

Design
Part profile, **metric 60°, BSW 55°,** internal, ground.
Quality
HC 5640.

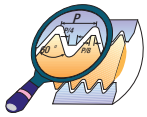
18793 101-105
Design
Right.

18793 201-205
Design
Left.





18793



Designation	Profile	l_1 mm	Pitch		Right 18793 ...	Left 18793 ...
06 IR/L A 60	60°	6	0.5–1.25	10 pcs.	101	201
08 IR/L A 60	60°	8	0.5–1.50	10 pcs.	102	202
06 IR/L A 55	55°	6	48 - 20	10 pcs.	104	204
08 IR/L A 55	55°	8	48–16	10 pcs.	105	205

18794 Solid-carbide boring bars with internal cooling

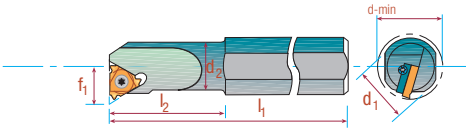
ATORN®

Design
For use without shims.
Applications
Particularly suitable for long overhang and small bore diameters to prevent vibrations and sagging.

18794 101-103
Design
Right.

18794 201-203
Design
Left.

18794



Designation	d_1 mm	d_2 mm	d min. mm	l_1 mm	l_2 mm	f_1 mm	Clamping screw	Right with internal cooling 18794 ...	Left with internal cooling 18794 ...
SIR/L 0010 M11CB	10	10	12	150	-	7.4	S 11	101	201
SIR/L 0012 P11CB	12	12	15	170	-	8.4	S 11	102	202
SIR/L 0016 R16CB	16	16	19	200	-	11.7	S 16S	103	203

18795 Boring bars (female thread)

ATORN®

Applications
For female thread cutting.

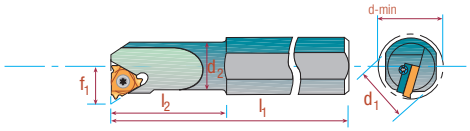
Note:
Different shank diameters on request.

18795 101-112
Design
Right, pitch angle 1.5°.

18795 201-212
Design
Left, pitch angle 1.5°.

18795 501-506
Design
Right, **with internal coolant supply,** pitch angle 1.5°.

18795



18795 111

Designation	d_1 mm	d_2 mm	d min. mm	l_1 mm	l_2 mm	f_1 mm	Clamping screw	Right 18795 ...	Left 18795 ...
SIR/L 0010 K11	16	10	12	125	25	7.4	S 11	101	201
SIR/L 0013 L11	16	13	15	140	32	8.9	S 11	102	202
SIR/L 0016 P16	20	16	19	170	40	11.7	S 16S	104	204
SIR/L 0020 P16	20	20	24	170	–	13.7	S 16	105	205
SIR/L 0025 R16	25	25	29	200	–	16.2	S 16	106	206
SIR/L 0025 R22	25	25	29	200	–	18.1	S 22	109	209
SIR/L 0032 S22	32	32	38	250	–	21.6	S 22	110	210
SIR/L 0032 S22U	32	32	38	250	–	24.4	S 22	111	
SIR/L 0032 S27	32	32	40	250	–	22.6	S 27	112	212

Designation	d_1 mm	d_2 mm	d min. mm	l_1 mm	l_2 mm	f_1 mm	Clamping screw	Right with internal cooling 18795 ...
SIR 0010 K11B	16	10	12	125	25	7.4	S 11	501
SIR 0013 M16B	16	13	16	150	32	10.2	S 16S	503
SIR 0016 P16B	20	16	19	170	40	11.7	S 16S	504
SIR 0020 P16B	20	20	24	170	-	13.7	S 16	505
SIR 0025 R16B	25	25	29	200	-	16.2	S 16	506

18796 Cemented-carbide threaded plates internal

ATORN®

Design
Full profile ISO, metric 60°, internal, ground.

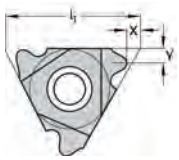
Note:
Different pitches are deliverable on request.

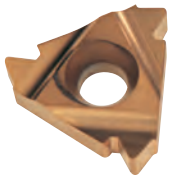
18796 205-224
Design
Right.

18796 305-328
Design
Right.

18796 405-428
Design
Right.

18796 505-528
Design
Left.





18796

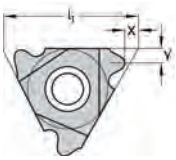
Applications						N M K	P	N P M K	N P M K
Cemented carbide grade						HW 5615	HC 5615	HC 5630	HC 5630
Coating						uncoated	coated	coated	coated
Designation	**Pitch mm**	**l_1 mm**	**x mm**	**y mm**		18796 ...	18796 ...	18796 ...	18796 ...
11 IR/L 0.5 ISO	0.50	11	0.6	0.6	10 pcs.	205	305	405	505
11 IR/L 0.75 ISO	0.75	11	0.6	0.6	10 pcs.	208	308	408	508
11 IR/L 0.8 ISO	0.80	11	0.6	0.6	10 pcs.	209	309	409	509
11 IR/L 1.0 ISO	1.00	11	0.6	0.7	10 pcs.	210	310	410	510
11 IR/L 1.25 ISO	1.25	11	0.8	0.8	10 pcs.	211	311	411	511
11 IR/L 1.5 ISO	1.50	11	0.8	1.0	10 pcs.	212	312	412	512
11 IR/L 1.75 ISO	1.75	11	0.8	1.1	10 pcs.	213	313	413	513
16 IR/L 1.0 ISO	1.00	16	0.6	0.7	10 pcs.	214	314	414	514
16 IR/L 1.25 ISO	1.25	16	0.8	0.9	10 pcs.	216	316	416	516
16 IR/L 1.5 ISO	1.50	16	0.8	1.0	10 pcs.	217	317	417	517
16 IR/L 1.75 ISO	1.75	16	0.9	1.2	10 pcs.	218	318	418	518
16 IR/L 2.0 ISO	2.00	16	1.0	1.3	10 pcs.	219	319	419	519
16 IR/L 2.5 ISO	2.50	16	1.1	1.5	10 pcs.	220	320	420	520
16 IR/L 3.0 ISO	3.00	16	1.1	1.5	10 pcs.	221	321	421	521
22 IR/L 3.5 ISO	3.50	22	1.6	2.3	10 pcs.	223	323	423	523
22 IR/L 4.0 ISO	4.00	22	1.6	2.3	10 pcs.	224	324	424	524
22 IR/L 4.5 ISO	4.50	22	1.6	2.4	10 pcs.		326	426	526
22 IR/L 5.0 ISO	5.00	22	1.6	2.3	10 pcs.		327	427	527
27 IR/L 6.0 ISO	6.00	27	1.8	2.5	10 pcs.		328	428	528

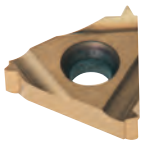
18798 Cemented-carbide threaded plates internal

ATORN®

Design
Right, **full profile BSW 55°,** internal, ground.

Note:
Different pitches and left version are deliverable on request.





18798

Applications						P	N P M K
Cemented carbide grade						HC 5615	HC 5630
Coating						coated	coated
Designation	**Pitch TPI**	**l_1 mm**	**x mm**	**y mm**		18798 ...	18798 ...
11 IR 28 W	28	11	0.6	0.7	10 pcs.	319	419
11 IR 19 W	19	11	0.8	1.0	10 pcs.	320	420
11 IR 16 W	16	11	0.9	1.1	10 pcs.	322	422
11 IR 14 W	14	11	0.9	1.1	10 pcs.	323	423
11 IR 12 W	12	11	1.0	1.1	10 pcs.	324	424
11 IR 11 W	11	11	0.9	1.2	10 pcs.	325	425
16 IR 28 W	28	16	0.6	0.7	10 pcs.	339	439
16 IR 19 W	19	16	0.8	1.0	10 pcs.	340	440
16 IR 16 W	16	16	0.9	1.1	10 pcs.	342	442
16 IR 14 W	14	16	1.0	1.2	10 pcs.	343	443
16 IR 12 W	12	16	1.1	1.4	10 pcs.	344	444
16 IR 11 W	11	16	1.1	1.5	10 pcs.	345	445

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18800 Cemented-carbide threaded plates DIN 103 internal

ATORN®

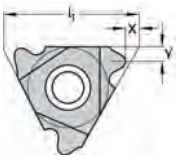
Design
Right, **full profile trapezoidal 30°,** internal, ground.

Note:
Different pitches and left version are deliverable on request.

U IR

18800

IR



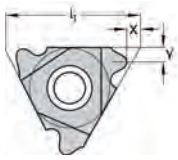
Applications Cemented carbide grade Coating						P HC 5615 coated		N P M K HC 5630 coated	
Designation	**Pitch mm**	**l_1 mm**	**x mm**	**y mm**		**18800**	**...**	**18800**	**...**
16 IR 3TR	3	16	1.3	1.5	10 pcs.		**305**		**405**
22 IR 4TR	4	22	1.8	1.9	10 pcs.		**306**		**406**
22 IR 5TR	5	22	2.0	2.4	10 pcs.		**307**		**407**
22 U IR 6TR	6	22 U	2.0	11.0	10 pcs.		**308**		**408**
22 U IR 7TR	7	22 U	2.3	11.0	10 pcs.		**309**		**409**

18804 Cemented-carbide threaded plates DIN 405 internal

ATORN®

Design
Right, **full profileround thread,** internal, ground.

Note:
Different pitches and left version are deliverable on request.



18804

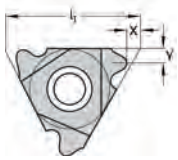
Applications Cemented carbide grade Coating						P HC 5615 coated	
Designation	**Pitch TPI**	**l_1 mm**	**x mm**	**y mm**		**18804**	**...**
16 IR 8 RD	8	16	1.4	1.4	10 pcs.		**102**
16 IR 6 RD	6	16	1.4	1.5	10 pcs.		**103**
22 IR 6 RD	6	22	1.5	1.7	10 pcs.		**104**
22 IR 4 RD	4	22	2.2	2.3	10 pcs.		**105**

18803 Cemented-carbide threaded plates internal

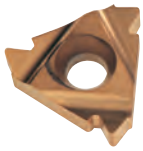
ATORN®

Design
Right, full profileUN, internal, ground.

Note:
Different pitches and left version are deliverable on request.



18803

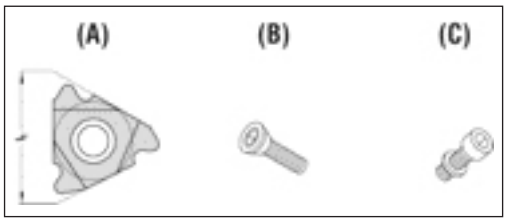


Applications Cemented carbide grade Coating						P HC 5615 coated	
Designation	**Pitch TPI**	**l_1 mm**	**x mm**	**y mm**		**18803**	**...**
16 IR 14 UN	14	16	0.9	1.2	10 pcs.		**113**
16 IR 12 UN	12	16	1.1	1.4	10 pcs.		**115**

Info

18805 - 18807 Spare parts for threaded plates

Plate size (A)		Clamping screw (B)	Screw with washer (C)
11 (1/4)	Internal	S 11	
16 (3/8)	External	S 16	A 16
	Internal	S 16	A 16
22 (1/2)	External	S 22	A 22
	Internal	S 22	A 22
27 (5/8)	External	S 27	A 27



18805 Clamping screws for threaded plates

18805

		18805 ...
S 11 (1/4)	10 pcs.	101
S 16 (3/8)	10 pcs.	102
S 16 S	10 pcs.	105
S 22 (1/2)	10 pcs.	103
S 27 (5/8)	10 pcs.	104

18806 Screws for shims

18806

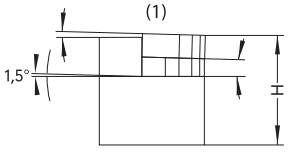
	18806 ...
A 16 (3/8)	101
A 22 (1/2)	102
A 27 (5/8)	103

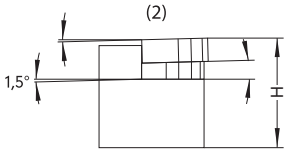
18807 Standard and special shims

18807

Applications
Standard shims with **positive** pitch angle (cutting edges from right to left) are used when **cutting a right-hand thread with a right-hand tool (1).** Special shims with **negative** pitch angle (cutting edges from left to right) are used when **cutting a right-hand thread with a left-hand tool** or a **left-hand thread with a right-hand tool (2).**

Important:
Dimension H remains constant for every shim combination.





Edge size l_1 mm	For clamp holder	Pitch angle	Edge designation	18807 ...
16 (3/8)	SER ... / SIL ...	1.5°	AE 16	102
16 (3/8)	SEL ... / SIR ...	1.5°	AI 16	103
16 (3/8)	SER ... / SIL ...	-1.5°	AE 16-1.5	106
16 (3/8)	SEL ... / SIR ...	-1.5°	AI 16-1.5	107
22 (1/2)	SER ... / SIL ...	1.5°	AE 22	110
22 (1/2)	SEL ... / SIR ...	1.5°	AI 22	111
22 U (1/2)	SER ... / SIL ...	1.5°	AE 22 U	112
22 U (1/2)	SEL ... / SIR ...	1.5°	AI 22 U	113
22 (1/2)	SER ... / SIL ...	-1.5°	AE 22-1.5	114
22 (1/2)	SEL ... / SIR ...	-1.5°	AI 22-1.5	115
27 (5/8)	SER ... / SIL ...	1.5°	AE 27	116
27 (5/8)	SEL ... / SIR ...	1.5°	AI 27 U	117
27 (5/8)	SER ... / SIL ...	-1.5°	AE 27 -1.5	118
27 (5/8)	SEL ... / SIR ...	-1.5°	AI 27 -1.5	119

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info — 18820-18829 UNISIX clamped lathe chisels range, type PM

KOMET

The tried-and-tested lathe chisel range for conventional centre lathes.
For using KOMET-UNISIX cemented-carbide indexable inserts with a total of six cutting edges.
Mounted with special clamping screw accessible from above.

18820 Offset side turning clamp holder PM

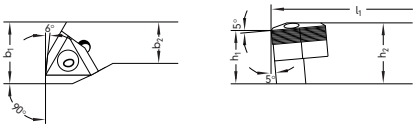
KOMET

Design
Right.

Note:
When using left indexable inserts, the clamp holder can be used for turning and facing.

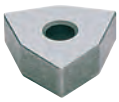
18820

Type	b_2 x h_2 x l_1 mm	For Unisix insert	h_1 mm	b_1 mm	18820	...
PM 1/16	16 x 17.7 x 140	P1	15.7	19.8		201
PM 1	16 x 21.7 x 140	P1	19.7	19.8		202
PM 2	20 x 26.1 x 165	P2	23.7	24.0		203



18822 Replacement intermediate layers

18822



Type	For holder	18822	...
16	PM 1/16		101
1	PM 1		102
2	PM 2		103

18823 Replacement clamping screws

18823

Size	For holder		18823	...
M 4.5 x 14.5	PM 1/16	10 pcs.		101
M 4.5 x 18.7	PM 1	10 pcs.		102
M 4.5 x 22.5	PM 2	10 pcs.		103

18828 - 18829 Cemented-carbide indexable inserts KOMET-UNISIX

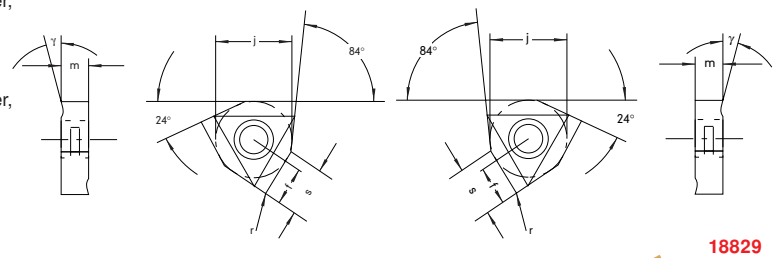
KOMET

Applications
In clamp holder art. no. 18820. Designed as six-edged indexable insert (84° tip angle) with six cutting edges. Indexable inserts with chip breakers have a positive chip angle of 18°, insert has a 5° incline in the holder, and this creates a positive chip angle of 13°. (for long-chipping materials: steel, steel casting, etc.). All indexable inserts can be interchanged within one holder size.

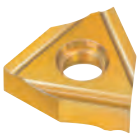
18828
With chip breaker, right positive.

18829
With chip breaker, left positive.

18828 18829



18829



Tip size	j mm	s mm	m mm	f mm	g	r
P1/W04 42...	12.0	7.5	4.5	6.642	18°	0.2
P2/W04 50...	15.0	9.5	5.0	8.285	18°	0.4

right		P M K HM quality P 25	...	P M HM quality P 40	...	N P M K HM quality K 10	...
Plate size		18828	...	18828	...	18828	...
P1/W04 42 480.02	10 pcs.		120		122		123
P2/W04 50 480.04	10 pcs.		128		130		

left		P M K HM quality P 25	...	P M HM quality P 40	...	N P M K HM quality K 10	...
Plate size		18829	...	18829	...	18829	...
P1/W04 42 180.02	10 pcs.		120		122		123
P2/W04 50 180.04	10 pcs.		128		130		

Info

18835 - 18841 Clamped lathe chisel range

KOMET

The modern high-performance tool range. With standard, interchangeable cutter holders, hardened, for compact three-sided positioning of the indexable insert. Primarily for use on conventional lathes.
All clamped lathe chisels complete with cutter holder and TX clamping screw. Without key and indexable insert.

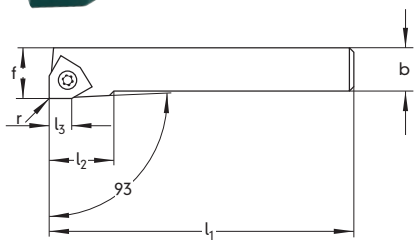
18835 Clamped lathe chisels

KOMET

Design
Angle of attack 93°, right.
Applications
For Unisix indexable inserts, positive.

Note:
Replacement clamping screws, see art. no. 18840.

18835



Designation	l_1 mm	l_2 mm	l_3 mm	f mm	r mm	b mm	For indexable insert	Replacement clamping screw	Right 18835	...
SWLCR 1010 E05	70	15	5.3	12	0.2	10	W29.. 24..	N00 57511/T8		103
SWLCR 1212 F05	80	18	5.3	16	0.2	12	W29.. 24..	N00 57511/T8		104
SWLCR 1616 H06	100	20	6.6	20	0.2	16	W29.. 34..	N00 57521/T10		105
SWLCR 2020 K07	125	24	7.9	25	0.2	20	W29.. 42..	N00 57531/T15		106

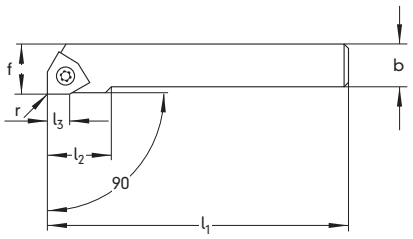
18836 Clamped lathe chisels

KOMET

Design
Angle of attack 90°, right.
Applications
For Unisix indexable inserts, positive.

Note:
Replacement clamping screws, see art. no. 18840.

18836



Designation	l_1 mm	l_2 mm	l_3 mm	f mm	r mm	b mm	For indexable insert	Replacement clamping screw	Right 18836	...
SWGCR 1010 E05	70	15	5.3	12	0.2	10	W29.. 24..	N00 57511/T8		103
SWGCR 1212 F05	80	19	5.3	16	0.2	12	W29.. 24..	N00 57511/T8		104
SWGCR 1616 H06	100	20	6.6	20	0.2	16	W29.. 34..	N00 57521/T10		105
SWGCR 2020 K07	125	25	7.9	25	0.2	20	W29.. 42..	N00 57531/T15		106

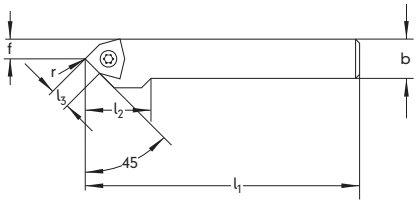
18838 Clamped lathe chisels

KOMET

Design
Angle of attack 45°, right.
Applications
For Unisix indexable inserts, positive.

Note:
Replacement clamping screws, see art. no. 18840.

18838



Designation	l_1 mm	l_2 mm	l_3 mm	f mm	r mm	b mm	For indexable insert	Replacement clamping screw	Right 18838	...
SWDCR 1010 E05	70	17	5.3	5	0.2	10	W29.. 24..	N00 57511/T8		103
SWDCR 1212 F05	80	18	5.3	6	0.2	12	W29.. 24..	N00 57511/T8		104
SWDCR 1616 H06	100	23	6.6	8	0.2	16	W29.. 34..	N00 57521/T10		105
SWDCR 2020 K07	125	10	7.9	10	0.2	20	W29.. 42..	N00 57531/T15		106

18840 Replacement clamping screws

KOMET

Applications
For KOMET clamped lathe chisels
art. no. 18835–18838.

18840

Designation	Size		18840	...
N00 57511	M 2.5 x 7.2	10 pcs.		101
N00 57521	M 3.5 x 7.3	10 pcs.		102
N00 57531	M 4.5 x 9	10 pcs.		103

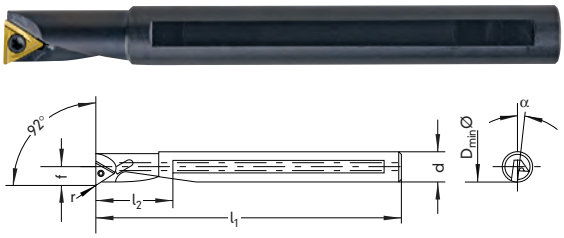
18839 Clamped lathe chisels (boring bars)

KOMET

Design
Angle of attack 92°, right, **with internal coolant supply.**
Applications
For Unisix indexable inserts, positive.

Note:
Replacement clamping screws see art. no. 18841.

18839



Right

Designation	Dmin mm	d mm	l_1 mm	l_2 mm	f mm	r mm	a	For indexable inserts	Replacement clamping screw	18839	...
UJ 0410 R	7.9	8	85	15	3.95	0.2	8° 30'	W30.. 04..	N00 56021/T6		102
UJ 0420 R	9.9	10	95	20	4.95	0.2	5° 30'	W30.. 04..	N00 56021/T6		103
UJ 0430 R	11.9	12	110	25	5.95	0.2	7° 30'	W30.. 14..	N00 56101/T8		104
UJ 0450 R	15.9	16	120	30	7.95	0.2	5°	W30.. 14..	N00 56101/T8		105

18841 Replacement clamping screws

KOMET

Applications
For KOMET clamped lathe chisels (boring bars) art. no. 18939.

Designation	Size		18841	...
N00 56021	M 2 x 3.6	10 pcs.		101
N00 56101	M 2.6 x 5.1	10 pcs.		102

18841

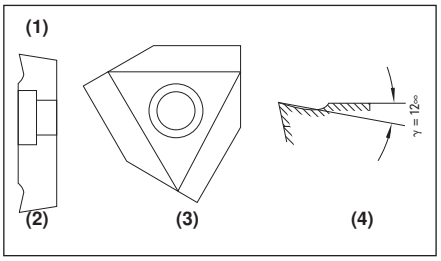
Info 18842 - 18845 indexable inserts Unisix

KOMET

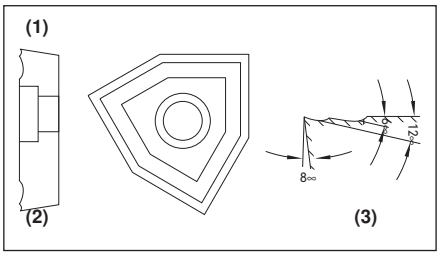
Made from cemented carbide, standard version.
High-performance indexable inserts with three positively ground chip breakers. 8° clearance angle, 12° chip angle (a) and 84° tip angle (with P 800). Fastening screw countersunk. Free chip flow.

Cemented carbide grades:

P 25 M	uncoated, for steel machining
K 10	uncoated, for grey cast iron and non-ferrous metals
BK6425	TiN-coated for steel machining
BK7615	coated, for grey cast iron and hardened steels



(1) P plate,
(2) Standard,
(3) Right-cutting,
(4) Flute shape.

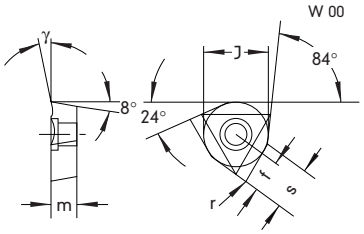


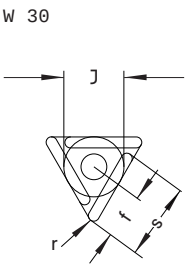
(1) P plate,
(2) Standard,
(3) Flute shape.

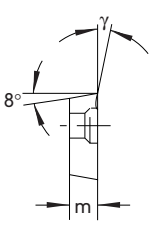
18842 Indexable inserts Unisix

KOMET

Design
With ground chip breaker, **right.**







W00

W30

18842

N P M K

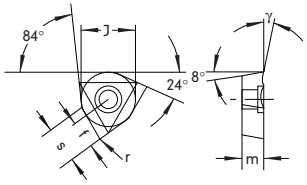
Cemented carbide grade							uncoated P 25 M		K 10		coated BK6425	
Insert size	J mm	m mm	s mm	f mm	r mm		18842	...	18842	...	18842	...
W00 34420.02	10.0	3.0	6.6	5.531	0.2	10 pcs.		113		114		116
W00 42420.02	12.0	3.8	7.9	6.642	0.2	10 pcs.		123		124		126
W00 50420.04	15.0	4.3	9.9	8.285	0.4	10 pcs.		133		134		136
W30 04420.03	4.0	1.8	3.5	3.245	0.3	10 pcs.		143		144		146
W30 14420.04	5.6	2.5	4.5	4.557	0.4	10 pcs.		153		154		156

18843 Indexable inserts Unisix

KOMET

Version
With ground chip breaker, **left.**

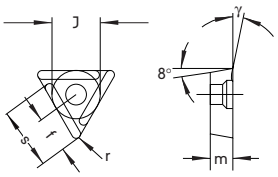
W 00

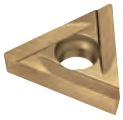


18843

W00

W 30





W30

N P M K

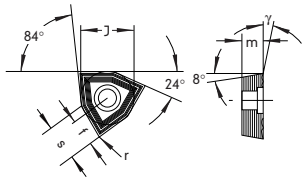
Cemented carbide grade							uncoated P 25 M		K 10		coated BK6425	
Insert size	J mm	m mm	s mm	f mm	r mm		18843	...	18843	...	18843	...
W00 34120.02	10.0	3.0	6.6	5.531	0.2	10 pcs.		113		114		116
W00 42120.02	12.0	3.8	7.9	6.642	0.2	10 pcs.		123		124		126
W00 50120.04	15.0	4.3	9.9	8.285	0.4	10 pcs.		133		134		136
W30 04120.03	4.0	1.8	3.5	3.245	0.3	10 pcs.		143		144		146
W30 14120.04	5.6	2.5	4.5	4.557	0.4	10 pcs.		153		154		156

18844 Indexable inserts Unisix

KOMET

Version
With positively sintered breaker geometry, cutting edges rounded, standard version.

W 28



18844

W28

N P M K

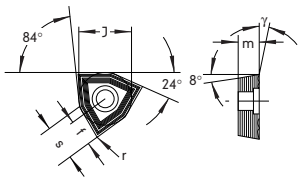
Cemented carbide grade							uncoated P 25 M		K 10		coated BK6425	
Insert size	J mm	m mm	s mm	f mm	r mm		18844	...	18844	...	18844	...
W28 34000.04	10.0	3.0	6.6	5.509	0.4	10 pcs.		113		114		116
W28 42000.04	12.0	3.8	7.9	6.619	0.4	10 pcs.				124		
W28 50000.04	15.0	4.3	9.9	8.285	0.4	10 pcs.		133		134		136

18845 Indexable inserts Unisix

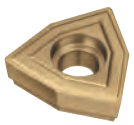
KOMET

With positively sintered breaker geometry, cutting edges chamfered and rounded, reinforced version.

W 29



18845

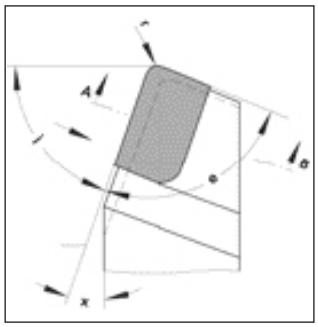


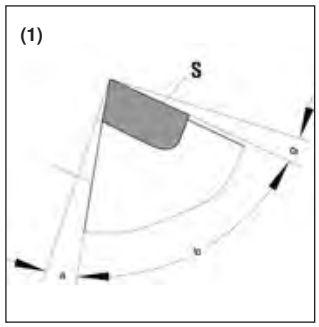
W29

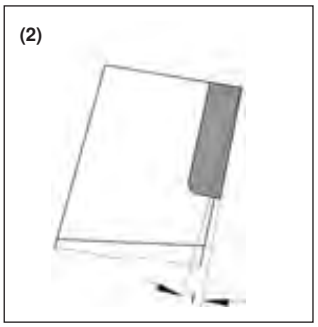
Cemented carbide grade							uncoated P 25 M		coated BK6425		coated BK7615	
Insert size	J mm	m mm	s mm	f mm	r mm		18845	...	18845	...	18845	...
W29 24010.04	8.0	3.8	5.3	4.398	0.4	10 pcs.		103		104		
W29 24010.04	8.0	3.8	5.3	4.398	0.4	10 pcs.						105
W29 34010.04	10.0	3.8	6.6	5.509	0.4	10 pcs.		113		114		
W29 34010.04	10.0	3.8	6.6	5.509	0.4	10 pcs.						115
W29 34010.08	10.0	3.8	6.6	5.465	0.8	10 pcs.				118		
W29 42010.04	12.0	4.8	7.9	6.619	0.4	10 pcs.		123		124		
W29 42010.08	12.0	4.8	7.9	6.575	0.8	10 pcs.		127		128		
W29 42010.08	12.0	4.8	7.9	6.575	0.8	10 pcs.						129

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Reference values for machining with carbide turning tools





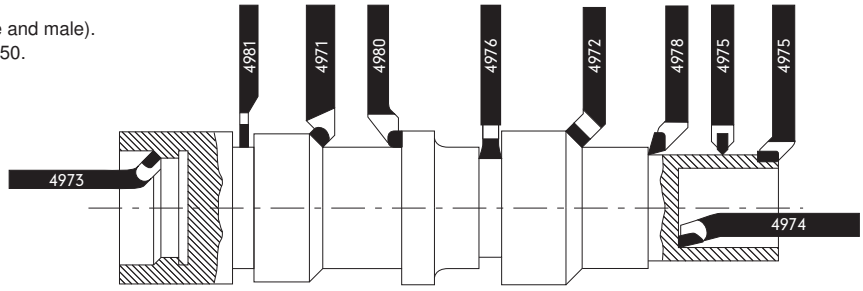


(1) = Cut A - B
(2) = View Z
H = Main cutting edge
F = Clearance surface
S = Chip surface
a = Clearance angle
g = Chip angle
b = Wedge angle
l = Tilt angle
e = Corner angle
j = Setting angle
w = Main cutting angle

Material	Strength or hardness (N/mm^2)	Roughing and interrupted cuts						Finishing and semi-finishing					
		HM grade	Feed rate (mm/rev)	Cutting speed (m/min)	Cutting edge angle a°	g°	l°	HM grade	Feed rate (mm/rev)	Cutting speed (m/min)	Cutting edge angle a°	g°	l°
Construction steels	< 500	P 20	0.4 - 0.8	70 - 120	6	10 - 12	4						
		P 25/30	0.6 - 1.2	60 - 90	6	10 - 12	4	P 10	0.1 - 0.4	160 - 220	6	12	0
								K 20	0.1 - 0.6	120 - 160	6	12	4
Structural and tempering steels	500 - 700												
		P 25/30	0.6 - 1.2	50 - 80	6	10 - 12	4	P 10	0.1 - 0.4	150 - 200	6	12	4
								P 20	0.4 - 0.8	60 - 120	6	12	4
								P 10	0.1 - 0.4	120 - 180	6	12	4
	700 - 1000	P 25/30	0.6 - 1.2	35 - 75	6	10	4	M 10/M 20	0.1 - 0.3	80 - 150	6	12	4
								P 20	0.4 - 0.8	60 - 100	6	12	4
Manganese, chrome, chrome molybdenum and other alloy steels	850 - 1000							P 10	0.1 - 0.4	70 - 140	6	12	4
		P 25/30	0.6 - 1.2	25 - 60	6	6	4	M 10/M 20	0.1 - 0.3	60 - 110	6	12	4
								P 20	0.4 - 0.8	50 - 90	6	12	4
	1000 - 1400	P 20	0.3 - 0.6	30 - 70	6	6	4	P 10	0.1 - 0.4	40 - 100	6	6	4
								M 10/M 20	0.1 - 0.3	35 - 60	6	6	4
		P 25/30	0.5 - 1.2	20 - 40	6	6	4						
Tool steels	1500 - 1800	P 20	0.2 - 0.6	25 - 40	6	0	6	P 10	0.1 - 0.3	45 - 55	6	0	4
								K 10	0.1 - 0.5	10 - 45	6	0	6
								M 10/M 20	0.1 - 0.5	10 - 45	6	0	6
Stainless steels	600 - 700							P 10	0.1 - 0.2	70 - 120	6	12 - 15	4
		P 20	0.1 - 0.4	50 - 70	6	12	4	M 10/M 20	0.1 - 0.3	50 - 100	6	12 - 15	4
								K 20	0.2 - 0.4	40 - 80	6	12	6
Hardened steels	> 500 HRC	K 10	0.1 - 0.4	4 - 15	6	0	-6						
		M 20	0.1 - 0.4	4 - 15	6	-5	-6						
Cast steel	< 500	P 25/30	0.3 - 1.2	40 - 90	6	12	4	P 10	0.1 - 0.2	130 - 180	6	12	4
								M 10/M 20	0.1 - 0.4	100 - 160	6	12	4
								P 20	0.2 - 0.8	80 - 120	6	12	4
	500 - 700	P 25/30	0.3 - 1.2	36 - 80	6	12	4	P 10	0.1 - 0.2	90 - 130	6	6	4
								M 10/M 20	0.1 - 0.4	60 - 130	6	6	4
								P 20	0.2 - 0.8	50 - 100	6	12	4
Grey cast iron	< 200 HB	K 20	> 0.5	40 - 90	6	6	4	K 10	0.1 - 0.5	50 - 100	6	6	4
	> 200 HB	K 20	0.3 - 1.2	30 - 70	6	6	4	K 10	0.1 - 0.5	40 - 80	6	6	4
								M 10/M 20	0.1 - 0.5	40 - 60	6	6	4
Alloyed grey cast iron	200 - 250 MHB	M 10/M 20	0.1 - 1.0	20 - 35	6	6	4	K 10	0.1 - 1.0	25 - 40	6	6	4
Black malleable cast iron	< 220 HB	K 20	> 0.4	40 - 50	6	4	4	K 10	0.1 - 0.4	50 - 80	6	6	4
								M 10/M 20	0.1 - 0.4	70 - 100	6	6	4
Hard cast iron	65 - 90 Shore	K 10		4 - 12	6	0	0						
	> 90 Shore	K 10		2 - 5	6	0	0						
Copper		K 20	0.3 - 0.6	400 - 500	10	18	0	K 10	0.1 - 0.3	450 - 600	10	18	0
Red bronze		K 20	0.3 - 0.6	400 - 500	10	12	0	K 10	0.1 - 0.3	450 - 600	10	12	0
Zinc alloy		K 20	0.3 - 0.6	200 - 250	6	10	0	K 10	0.1 - 0.3	200 - 300	6	10	0
Pure aluminium		K 20	0.3 - 0.6	400 - 1000	8	20	0	K 10	0.1 - 0.3	500 - 1200	8	20	0

Info — 18860-18877 Cemented-carbide lathe chisels

Design
DIN 4971 to DIN 4981 and for threads (female and male).
With soldered-on ISO cutting edges to DIN 4950.
Quality
Cutting edges carbide-tipped.



18860 - 18861 Straight lathe chisel DIN 4971/ISO 1

18860
Design
Right, angle of attack 70°.

18861
Design
Left, angle of attack 70°.

18860

Right			P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18860	...	18860	...	18860	...
10q	10 x 10 x 90	4		209		216		223
12q	12 x 12 x 100	5		210		217		224
16q	16 x 16 x 110	6		211		218		225
20q	20 x 20 x 125	8		212		219		226
25q	25 x 25 x 140	10		213		220		227

Left			P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18861	...	18861	...	18861	...
10q	10 x 10 x 90	4		209		216		223
12q	12 x 12 x 100	5		210		217		224
16q	16 x 16 x 110	6		211		218		225
20q	20 x 20 x 125	8		212		219		226
25q	25 x 25 x 140	10		213		220		227

18862 - 18863 Bent lathe chisel DIN 4972/ISO2

18862
Design
Right, angle of attack 45°.

18863
Design
Left, angle of attack 45°.

18862

Right			M 10/20		P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18862	...	18862	...	18862	...	18862	...	18862	...
10q	10 x 10 x 90	6		202		209		216		223		230
12q	12 x 12 x 100	7		203		210		217		224		238
16q	16 x 16 x 110	8		204		211		218		225		239
20q	20 x 20 x 125	10		205		212		219		226		240
25q	25 x 25 x 140	12		206		213		220		227		241
32q	32 x 32 x 170	14						221		228		

Left			P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18863	...	18863	...	18863	...	18863	...
10q	10 x 10 x 90	6		209		216		223		230
12q	12 x 12 x 100	7		210		217		224		238
16q	16 x 16 x 110	8		211		218		225		239
20q	20 x 20 x 125	10		212		219		226		240
25q	25 x 25 x 140	12		213		220		227		241
32q	32 x 32 x 170	14				221		228		

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

18864 Internal lathe chisel DIN 4973/ISO 8

Design
Right, angle of attack 75°.

18864

Right				M 10/20		P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	For bore Ø from mm	18864	...	18864	...	18864	...		...	18864	...
10q	10 x 10 x 150	4	18		202		209		216		223		229
12q	12 x 12 x 180	5	21		203		210		217		224		230
16q	16 x 16 x 210	6	27		204		211		218		225		231
20q	20 x 20 x 250	8	34		205		212		219		226		232
25q	25 x 25 x 300	10	43		206		213		220		227		233
32q	32 x 32 x 355	12	52								228		234

18865 Internal corner lathe chisel DIN 4974/ISO 9

Design
Right, angle of attack 88°.

18865

Right				M 10/20		P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	For bore Ø from mm	18865	...	18865	...	18865	...	18865	...	18865	...
10q	10 x 10 x 150	4	18		202		209		216		223		237
12q	12 x 12 x 180	5	21		203		210		217		224		238
16q	16 x 16 x 210	6	27		204		211		218		225		239
20q	20 x 20 x 250	8	34		205		212		219		226		240
25q	25 x 25 x 300	10	43		206		213		220		234		241
32q	32 x 32 x 355	12	52		207				221		235		242

18866 Centre lathe chisel DIN 4975

Design
Angle of attack 50°.

18866

		P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	18866	...	18866	...	18866	...	18866	...
16h	16 x 10 x 110			209		216		223	232
20h	20 x 12 x 125			210		217		224	233
25h	25 x 16 x 140			211		218		225	234

18867 Width of lathe chisel DIN 4976/ISO 4

Design
Angle of attack 0°.

18867

		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	18867	...	18867	...	18867	...
10q	10 x 10 x 90			209			223
12q	12 x 12 x 100			210		217	224
16q	16 x 16 x 110			211		218	225
20q	20 x 20 x 125			212		219	226
25q	25 x 25 x 140			213		220	227
32q	32 x 32 x 170			214			

18868 Offset facing lathe chisel DIN 4977/ISO 5

Design
Right, angle of attack 90°.

18868

Right				P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm		18868	...	18868	...	18868	...	18868	...
16q	16 x 16 x 110	8				211		218		225	232
20q	20 x 20 x 125	10				212		219		226	233
25q	25 x 25 x 140	12						220		227	234
32q	32 x 32 x 170	16						221			242

18869 Offset corner lathe chisel DIN 4978/ISO 3

Design
Right, angle of attack 95°.

18869

Right			M 10/20		P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18869	...	18869	...	18869	...	18869	...	18869	...
16h	16 x 10 x 110	5			204		211		218		225	239
20h	20 x 12 x 125	6			205		212		219		226	240
25h	25 x 16 x 140	8			206		213		220		227	241
32h	32 x 20 x 170	10							221			242

18870 Offset corner lathe chisel DIN 4978/ISO 3

Design
Left, angle of attack 95°.

18870

Left			P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18870	...	18870	...	18870	...
16h	16 x 10 x 110	5		218		225		232
20h	20 x 12 x 125	6		219		226		233
25h	25 x 16 x 140	8		220		227		234
32h	32 x 20 x 170	10				228		

18871 - 18872 Offset side lathe chisel DIN 4980/ISO 6

18871
Design
Right, angle of attack 90°.

18872
Design
Left, angle of attack 90°.

18871

Right			M 10/20		P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18871	...	18871	...	18871	...	18871	...	18871	...
10q	10 x 10 x 90	4		202		209		216		223		237
12q	12 x 12 x 100	5		203		210		217		224		238
16q	16 x 16 x 110	6		204		211		218		225		239
20q	20 x 20 x 125	8		205		212		219		226		240
25q	25 x 25 x 140	10		206		213		220		227		241
32q	32 x 32 x 170	12						221				242

Left			P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	c mm	18872	...	18872	...	18872	...	18872	...
10q	10 x 10 x 90	4		209		216		223		237
12q	12 x 12 x 100	5				217		224		238
16q	16 x 16 x 110	6		211		218		225		239
20q	20 x 20 x 125	8		212		219		226		240
25q	25 x 25 x 140	10		213		220		227		241
32q	32 x 32 x 170	12				221				242

18873 Recessing lathe chisel DIN 4981/ISO 7

Design
Right.

18873

Right				M 10/20		P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	l_2 mm	b_2 mm	18873	...	18873	...	18873	...	18873	...	18873	...
12h	12 x 8 x 100	12	3		203		210		217		224		237
16h	16 x 10 x 110	14	4		204		211		218		225		238
20h	20 x 12 x 125	16	5		205		212		219		226		239
25h	25 x 16 x 140	20	6		206		213		220		227		240
32h	32 x 20 x 170	25	8		207				221		228		241

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18874 Recessing lathe chisel DIN 4981/ISO 7

Design
Left.

18874

Left				P 10		P 20		P 25/30		K 10/20	
Designation	h x b x l_1 mm	l_2 mm	b_2 mm	18874	...	18874	...	18874	...	18874	...
12h	12 x 8 x 100	12	3		210		217		224		231
16h	16 x 10 x 110	14	4		211		218		225		232
20h	20 x 12 x 125	16	5		212		219		226		233
25h	25 x 16 x 140	20	6		213		220		227		234
32h	32 x 20 x 170	25	8						228		235

18875 Male thread lathe chisel

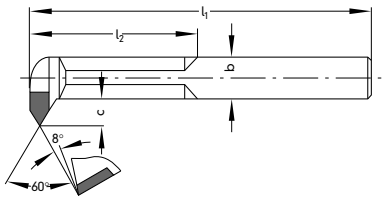
Design
Right, straight, 60°.

18875

Right			P 20		K 10/20	
Designation	h x b x l_1 mm		18875	...	18875	...
12q	12 x 12 x 110			203		209
16q	16 x 16 x 125			204		210
20q	20 x 20 x 140			205		211
25q	25 x 25 x 160			206		212

18876 Female thread lathe chisel

Design
Right, bent, 60°.

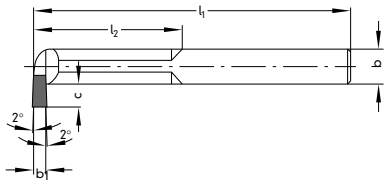


18876

Right					P 20		K 10/20	
Designation	h x b x l_1 mm	c mm	l_2 mm	For bore Ø From mm	18876	...	18876	...
10q	10 x 10 x 140	6	52	16		202		209
12q	12 x 12 x 160	6	56	20		203		210
16q	16 x 16 x 180	8	63	25		204		211
20q	20 x 20 x 210	10	80	32		205		212
25q	25 x 25 x 250	12	100	40		206		213

18877 Hooked lathe chisel

Design
Right.



18877

Right						P 20		K 10/20	
Designation	h x b x l_1 mm	c mm	l_2 mm	b_1 mm	For bore Ø From mm	18877	...	18877	...
10q	10 x 10 x 140	6	52	3	16		202		209
12q	12 x 12 x 160	6	56	4	20		203		210
16q	16 x 16 x 180	8	63	5	25		204		211
20q	20 x 20 x 210	10	80	6	32		205		212
25q	25 x 25 x 250	12	100	8	40		206		213
32q	32 x 32 x 300	14	125	10	50		207		

Info

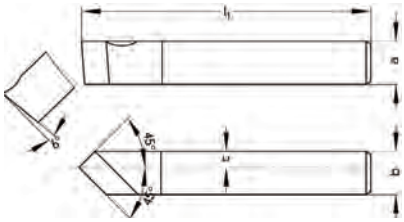
18885 - 18896 HSS-Co lathe chisel

Version
10 mm □ consisting of solid high-performance high-speed lathe tool, with butt-welded HSS-Co head.

18885 Straight lathe chisel HSS-Co

Design
Similar to DIN 4951, **right.** Angle of attack 45°.

18885

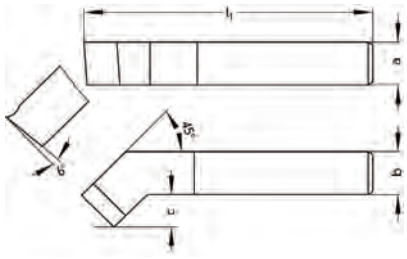


T mm	l_1 mm	c mm	Right 18885	...
10	100	4.0		201
12	110	5.0		202
16	140	6.0		203
20	160	8.0		204

18886 Bent lathe chisel HSS-Co

Design
Similar to DIN 4952, **right.** Angle of attack 45°.

18886

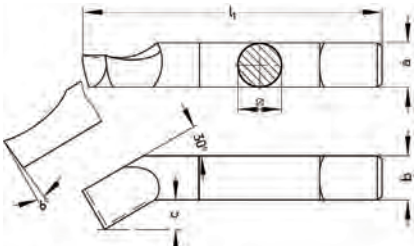


T mm	l_1 mm	c mm	Right 18886	...
10	100	6		201
12	110	8		202
16	140	10		203
20	160	14		204

18887 Internal lathe chisel HSS-Co

Design
Similar to DIN 4953, **right.** Angle of attack 30°.

18887

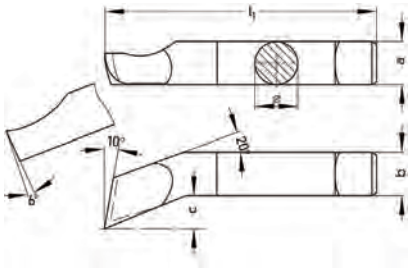


T mm	l_1 mm	c mm	Right 18887	...
10	140	5		201
12	160	6		202
16	180	6		203
20	220	8		204

18888 Internal corner lathe chisel HSS-Co

Design
Similar to DIN 4954, **right.** Angle of attack 20°.

18888

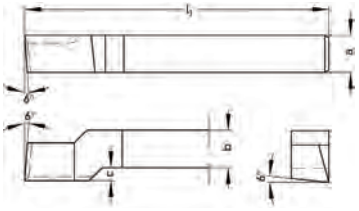


T mm	l_1 mm	c mm	Right 18888	...
10	160	4		201
12	180	5		202
16	180	6		203
20	220	8		204

18891 Offset side lathe chisel HSS-Co

Design
Similar to DIN 4960, **right.** Angle of attack 6°.

18891

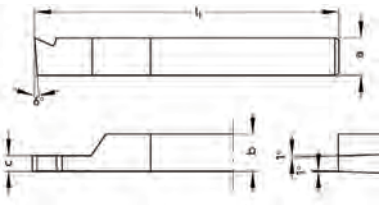


T mm	l_1 mm	c mm	Right 18891	...
10	100	4		201
12	110	5		202
16	140	6		203
20	160	8		204

18892 Recessing lathe chisel HSS-Co

Design
DIN 4961, **right.**

T mm	l_1 mm	c mm	Right 18892	...
16	140	3		201
20	160	4		202

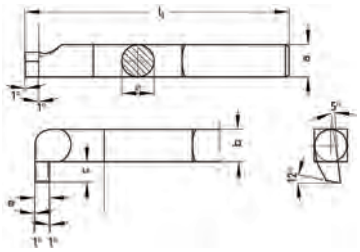


18892

18893 Hooked lathe chisel HSS-Co

Design
Similar to DIN 4963, **right.**

T mm	l_1 mm	c mm	e mm	Right 18893	...
10	160	6	3		201
12	180	8	3		202
16	180	8	3		203
20	220	10	4		204



18893

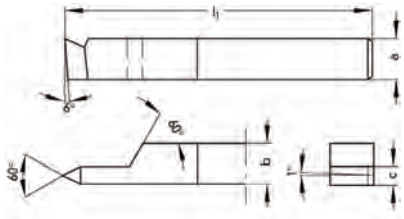
18895 - 18896 Thread lathe chisel HSS-Co

T mm	l_1 mm	b mm	Male 18895	...
10	100	12		201
12	125	16		202
16	150	20		203
20	175	25		204

T mm	l_1 mm	c mm	Female 18896	...
10	160	6		201
12	180	8		202
16	210	10		203
20	250	12		204

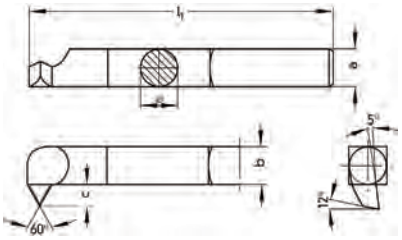
18895
Design
Male thread lathe chisel 60°, **right,** metric.

18895



18896
Design
Female thread lathe chisel 60°, **right,** metric.

18896



18965 Knurling tools

Design
- Special surface hardening for improved wear resistance

Applications
Knurling patterns: RAA, RBL, RBR, RGE, RGV, RKE, RKV.
Knurling wheels:
1 x type **AA (RAA),**
1 x type **BL 30° (RBL),**
1 x type **BR 30° (RBR),**
1 x type **GV (RGE),**
1 x type **GE (RGV),**
1 x type **KV (RKE),**
1 x type **KE (RKV).**

Note:
Supplied without knurling wheels (see art. no. 18970–18974).

18965 101

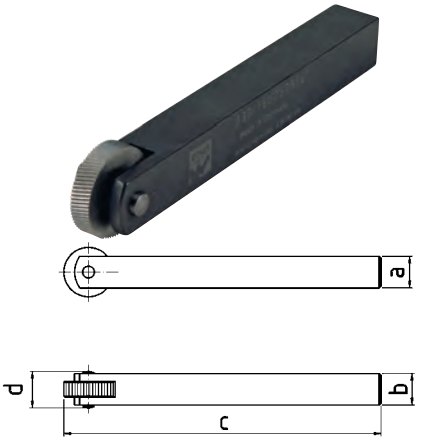
Applications
For conventional lathes.

18965 103

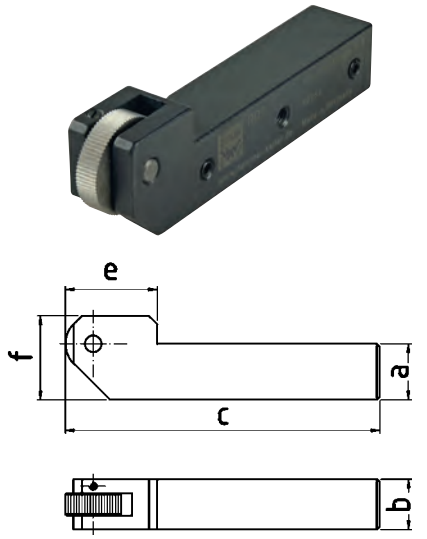
Design
Cemented-carbide runner pins secured via screw for quick knurling wheel replacement.

Applications
For conventional and CNC lathes, turning/milling centres, multi-spindle lathes and short/universal machines.

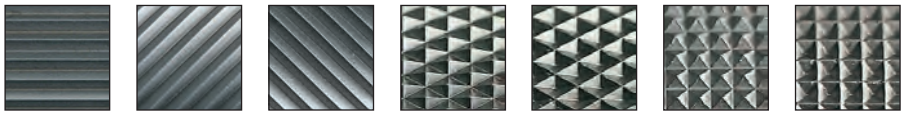
18965 101



18965 103



RAA **RBL** **RBR** **RGE** **RGV** **RKE** **RKV**



Working range Ø mm	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm	18965 ...
15–200	16	16	130.0	18	–	–	20 x 8 x 6	**101**
8–200	20	20	109.5	–	29.5	32.5	20 x 8 x 6	**103**

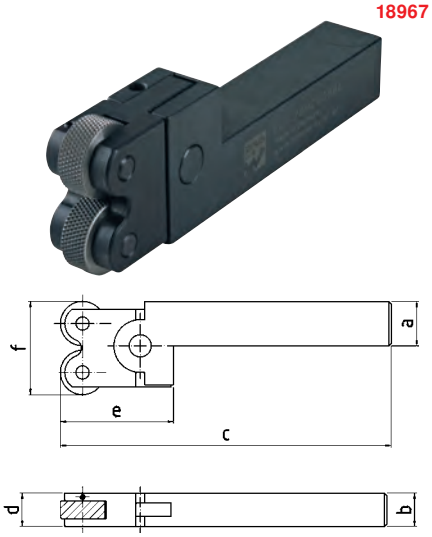
18967 Knurling tool

Design
Modular design: Knurling tool can be used universally as right and left-hand version.
Changed over by simple rotation of the knurling head. With flexible centring mechanism. Runner pins secured by screw for fast knurling wheel replacement.

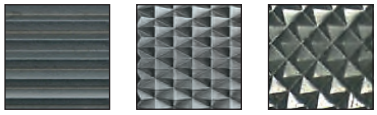
Applications
For conventional and CNC lathes.
Knurling patterns: RAA, RGE 30°, RGE 45°.
Knurling wheels:
2 x type **AA (RAA),**
1 x type **BL 30°,**
1 x type **BR 30° (RGE 30°),**
1 x type **BL 45° (RGE 45°),**
1 x type **BR 45° (RGE 45°).**

Note:
Supplied without knurling wheels (see art. no. 18970–18974).

18967



RAA **RGE 30°** **RGE 45°**



Working range Ø mm	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm	18967 ...
10–80	20	20	130	20	50	42	20 x 8 x 6	**101**

Design
With two chamfers, profile angle 90°, teeth precision milled, flat sides and bore ground.
Applications
For chipless machining.
For knurling tools art. no. 18965–18967.
Quality
HSS (high-speed steel).

18970
Design
Type AA.

18971
Design
Type BL 30°.

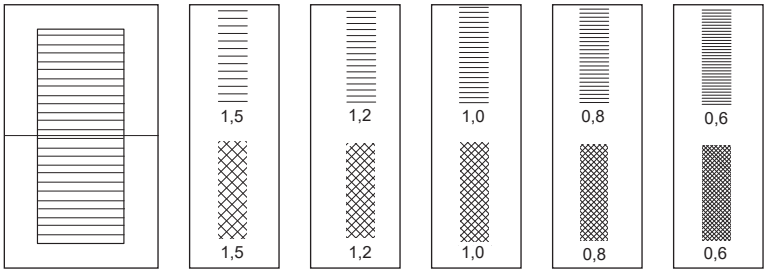
18972
Design
Type BR 30°.

18973
Design
Type GE 30°.

18974
Design
Type GV 30°.

18970 18971 18972

18973 18974



			AA		BL 30°		BR 30°		GE 30°		GV 30°	
Pitch mm	Pitch TPI	Ø x width x bore mm	18970	...	18971	...	18972	...	18973	...	18974	...
1.5	16.9	20 x 8 x 6		202		202		202		102		
1.2	21.2	20 x 8 x 6		203		203		203		103		
1.0	25.4	20 x 8 x 6		204		204		204		104		104
0.8	31.8	20 x 8 x 6		206		206		206		106		106
0.6	42.3	20 x 8 x 6		208		208		208		108		

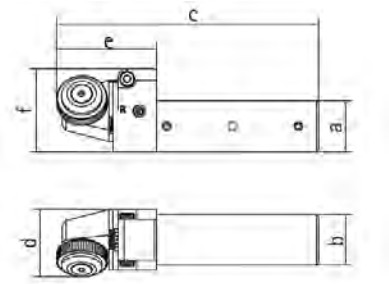
18977 Knurling milling tool

Design
Modular design: Tool can be used universally as right and left-hand version. Quick changeover process: simply dismantle and rotate the knurling head. With positioning latching for optimum initial positioning. Fine adjustment of the knurling head via threaded spindle with scaling. Radial and axial rotation lock for optimum tool guidance on the workpiece and improved surface quality. Special surface hardening for increased wear resistance. Delivered without knurled wheels (see art. no. 18983–18985).

Applications
For conventional and CNC lathes, turning/milling centres, multi-spindle machines and short/universal lathes.
Knurling patterns: RAA, RBL 30°, RBR 30°.
Knurling wheels:
1 x type **BR 30° (for right version)**,
1 x type **BL 30° (for left version)**,
1 x type **AA RBL 30°/RBR 30°**.

RAA **RBL 30°** **RBR 30°**

18977



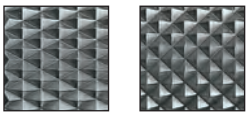
Working range Ø mm	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm	18977	...
10–300	20	25	129	33	49	36	25 x 6 x 8		**101**

18978 Knurling milling tool

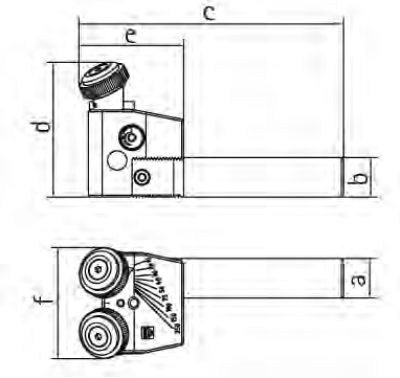
Design
Modular design: Knurling tool can be used universally as right and left-hand version.
Changeover by simple rotation of the knurling head. Versatile: Vertical height adjustment for use on shank sizes 20 and 25 mm. Simple setting: Setting scale and setting spindle for fast setting of the production diameter. Fine adjustment of the tip height by means of height adjustment of the milling head spindle. Special surface hardening for increased wear resistance. Delivered without knurled wheels (see art. no. 18981–18983).

Applications
For conventional and CNC lathes, turning/milling centres, multi-spindle machines and short/universal lathes.
Knurling patterns: RGE 30°, RGE 45°.
Knurling wheels:
2 x type **AA (RGE 30°),**
1 x type **BL 15°,**
1 x type **BR 15° (RGE 45°).**

RGE 30° **RGE 45°**



18978



Working range Ø mm	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm	18978	...
10–250	20	20	134	68	54	58	25 x 6 x 8		**101**

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18981 - 18982 Knurling wheels DIN 403 (BR/BL 15°)

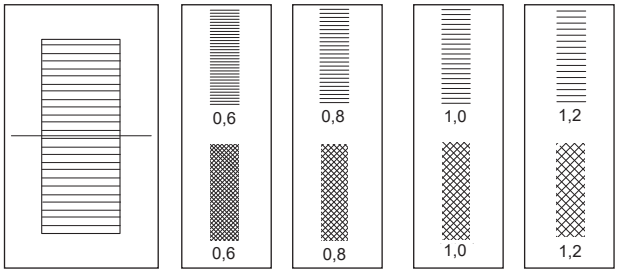
Design
Without chamfers, profile angle 90°, teeth precision milled, flat sides and bore ground.

Applications
For chip-removing machining. For knurling tools art. no. 18978.

Quality
PM (powder metal).

18981
Design
Type BR 15°. 25 x 6 x 8 mm
(diameter x width x bore).

18982
Design
Type BL 15°. 25 x 6 x 8 mm
(diameter x width x bore).



	BR 15°/Ø 25		BL 15°/Ø 25	
Pitch mm	Pitch TPI	18981 ...		18982 ...
0.6	42.3	203		203
0.8	31.8	204		204
1.0	25.4	205		205
1.2	21.2	206		206

18983 Knurling wheels DIN 403 (AA)

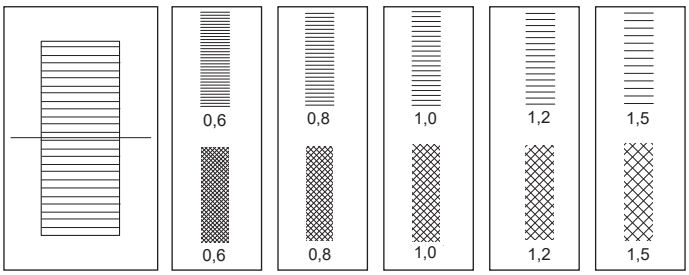
Design
Without chamfers, profile angle 90°, teeth precision milled, flat sides and bore ground.

Applications
For chip-removing machining. For knurling tools art. no. 18977 and 18978.

Quality
PM (powder metal).

18983 303-307
Version
Type AA. 25 x 6 x 8 mm
(diameter x width x bore).

18983 403-406
Design
Type AA. 15 x 4 x 8 mm
(diameter x width x bore).



	AA/Ø 25		AA/Ø 15	
Pitch mm	Pitch TPI	18983 ...		18983 ...
0.6	42.3	303		403
0.8	31.8	304		404
1.0	25.4	305		405
1.2	21.2	306		406
1.5	16.9	307		

18984 - 18985 Knurling wheels DIN 403 (BR/BL 30°)

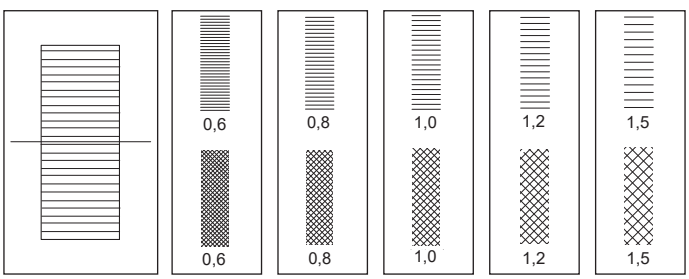
Design
Without chamfers, profile angle 90°, teeth precision milled, flat sides and bores ground.

Applications
For chip-removing machining. For knurling tools art. no. 18977.

Quality
PM (powder metal).

18984
Type BR 30°. 25 x 6 x 8 mm
(diameter x width x bore).

18985
Type BL 30°. 25 x 6 x 8 mm
(diameter x width x bore).



	BR 30°		BL 30°	
Pitch mm	Pitch TPI	18984 ...		18985 ...
0.6	42.3	203		203
0.8	31.8	204		204
1.0	25.4	205		205
1.2	21.2	206		206
1.5	16.9	207		207

18986 - 18987 Knurling wheels for QUICK knurling tools DIN 403 (BR/BL 15°)

Design
Without chamfers, profile angle 90°, teeth precision milled, flat sides and bore ground.

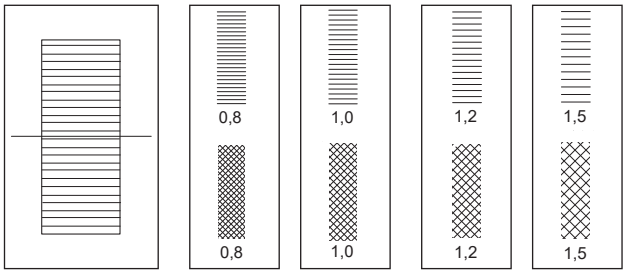
Applications
For chip-removing machining. For quick knurling tools, models I/KF and O/KF.

Quality
PM (powder metal).

18986
Design
Type BR 15°. 21.5 x 5 x 8 mm
(diameter x width x bore).

18987
Design
Type BL 15°. 21.5 x 5 x 8 mm
(diameter x width x bore).

18986 18987



Pitch mm	Pitch TPI	BR 15°/Ø 21.5 18986 ...	BL 15°/Ø 21.5 18987 ...
0.8	31.8	204	204
1.0	25.4	205	205
1.2	21.2	206	206
1.5	16.9	207	207

18990 Knurled wheels for QUICK knurling tools DIN 403 (AA)

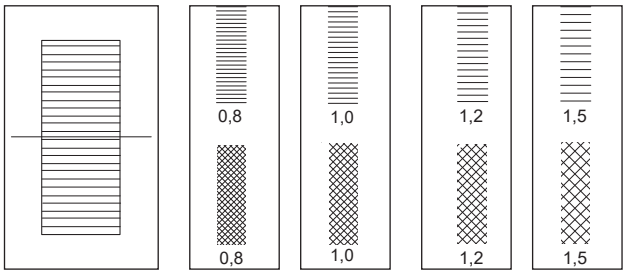
Design
Without chamfers, profile angle 90°, teeth precision milled, flat sides and bore ground. Type AA.

Applications
For chip-removing machining. For Quick knurling tools model I/KF.

Quality
PM (powder metal).

18990
Design
Type AA. 21.5 x 5 x 8 mm
(diameter x width x bore).

18990



Pitch mm	Pitch TPI	Ø x width x bore mm	AA 18990 ...
0.8	31.8	21.5 x 5 x 8	204
1.0	25.4	21.5 x 5 x 8	205
1.2	21.2	21.5 x 5 x 8	206
1.5	16.9	21.5 x 5 x 8	207

18991 - 18992 Knurling wheels for QUICK knurling tools DIN 403 (BR/BL 30°)

Design
Without chamfers, profile angle 90°, teeth precision milled, flat sides and bore ground.

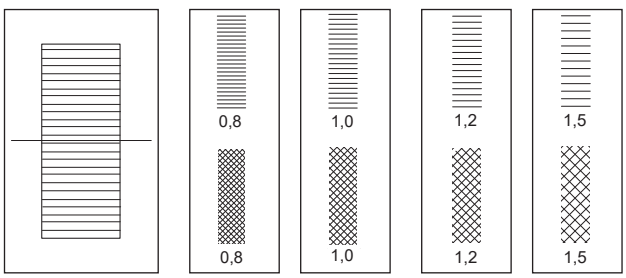
Applications
For chip-removing machining. For Quick knurling tools, models I/FL and O/FL.

Quality
PM (powder metal).

18991
Design
Type BR 30°. 21.5 x 5 x 8 mm
(diameter x width x bore).

18992
Design
Type BL 30°. 21.5 x 5 x 8 mm
(diameter x width x bore).

18991 18992



Pitch mm	Pitch TPI	Ø x width x bore mm	BR 30° 18991 ...	BL 30° 18992 ...
0.8	31.8	21.5 x 5 x 8	204	204
1.0	25.4	21.5 x 5 x 8	205	205
1.2	21.2	21.5 x 5 x 8	206	206
1.5	16.9	21.5 x 5 x 8	207	207

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19015 Adjustable circular cutter

Design
Circular cutter equipped with 1 HSS-E blade (draw cut to 5 mm).

Applications
On stationary drills.
For cutting holes, discs and rings.

Note:
Do not use in high-speed machines!
Do not use to process wood!

19015 101
Type Liliput
Version
Cutting range 18–80 mm, shank diameter 10 mm.

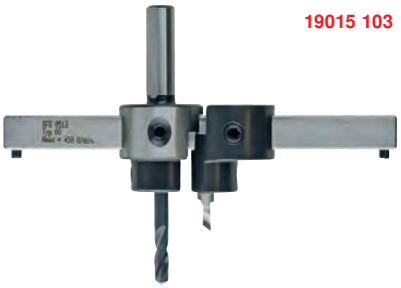
19015 103
type 00
Version
Cutting range 30–200 mm, shank diameter 12 mm.

19015 104
Type 00
Version
Cutting range 30–200 mm, shank MT 2.

19015 105
Type 00
Version
Cutting range 30–200 mm, shank MT 3.

19015 106
Type 00a
Design
Cutting range 30–400 mm, shank MT 3.

19015 103



19015 104

Type	Cutting range diameter mm	Shank diameter mm	Shank MT	19015 ...
Liliput	18–80	10	–	**101**
00	30–200	12	–	**103**
00	30–200	–	2	**104**
00	30–200	–	3	**105**
00a	30–400	–	3	**106**

19026 - 19028 Blade and blade holder for circular cutter

Use for type			Liliput		00 + 00a		00A	
Version			19026	...	19027	...	19028	...
Blade (draw cut) for sheet metal up to 5 mm For use on steel, non-ferrous metals or light metals, made from **HSS-E**.				**101**		**101**		
Blade, oblique, for metals up to 5 mm **Carbide-tipped**.	 19026 101–102	 19027 101–102		**102**		**102**		
Additional blade holder for oblique blade end no. 101 and 102.						**104**		
Blade for sealants, plastic panels Rubber, leather, etc. up to approx. 10 mm, made of **HSS-E**.	 19026 105	 19027 105		**105**		**105**		
Blade for plastics up to approx. 30 mm, as well as Novotex, Pertinax, Plexiglas, etc., made from **HSS-E**.				**106**		**106**		
Blade for plastics up to approx. 30 mm, as well as Novotex, Pertinax, Plexiglas, etc., **carbide-tipped**.	 19026 106–107	 19027 106–107		**107**		**107**		
Additional blade holder for straight blade end no. 105, 106 and 107.						**109**		
Blade in a reinforced version for panels up to approx. 12 mm And bores from approximately 34 to 150 mm diameter, made of **HSS-E.**	 19028 111							**111**
Special blade holder for reinforced HSS-E blade end no. 111.								**112**

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
HSS-E																	
35–50	35–50	25–40	25–30	25–30	22–25	22–25	22–25	22–25	-	-	-	-	16–19	16–19	-	16–24	35–50
Carbide-tipped																	
60–90	60–90	45–70	45–54	45–54	40–45	40–45	40–45	40–45	-	-	-	-	28–34	28–34	-	28–42	70–90

19095 Jetspray minimum quantity lubrication system (MMS)

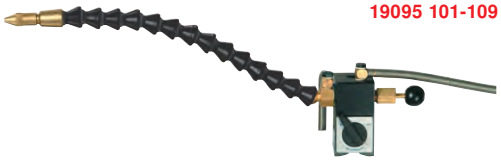
Design
Jetspray works without a pump and is compact and space-saving. The device is suitable for all machines (machining centres, mills, drills, saws etc.). Installation and connection take only a few minutes.

- Optimal and economical use of coolant
- Simple, separate adjustment of coolant volume and air supply
- Precise tool lubrication through one or two nozzles
- Increased tool service life
- Coolant disposal costs avoided
- All parts in stainless steel design
- Different lengths of suction hose
- Strong prismatic magnetic base with on/off switch

19095 101-109
Scope of delivery:
- 1 single spray system with a high-quality LOC-LINE hose
- 1 control valve
- 1 pressure line
- 1 suction line for coolant
- 1 strong magnet (can be switched on/off)

19095 201-209
Scope of delivery:
- 1 double spray system with a high-quality LOC-LINE hose
- 1 control valve
- 1 pressure line
- 1 suction line for coolant
- 1 strong magnet (can be switched on/off)

19095 101-109



19095 201-209

			Single spray system		Double spray system	
Multi-link hose length mm	Pneumatic hose m	Suction line m	19095	...	19095	...
203	2	2		101		201
273	2	2		105		205
375	2	2		109		209

19350 Coolant tap

Design
- With magnet 260 N
- Flexible hose 300 mm long
- Adjustable stopcock
- Hose connector R1/4 inch or LW 8 hose nozzle

Applications
The coolant tap can be attached anywhere on the machine tool or directly on the workpiece.

19350

19350	...
	101

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19355 Flexible aluminium coolant hoses

19355 101
Design
- Fits all conventional tool carriers
- Flexible and versatile
- Can be used with up to 80 bar high pressure
- Versatile
- Long service life thanks to anodised coating
- Low weight
- New design
- 100% Swiss-made

19355 201-219
Design
1/4-inch individual elements

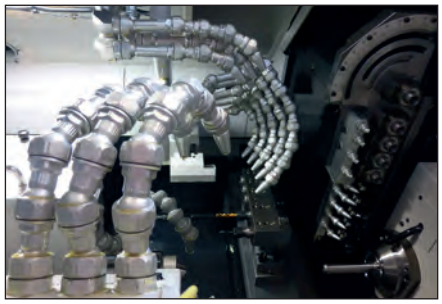
Note:
Further individual parts available on request.

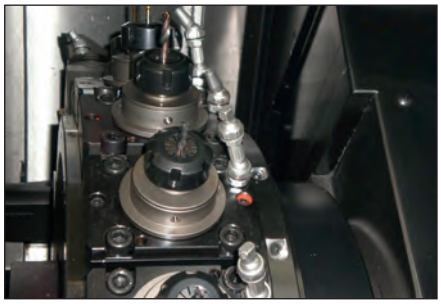
19355 101

1/4-inch set configuration
3 spacer pieces, 28 mm
3 spacer pieces, 43 mm
3 spacer pieces, 70 mm
1 threaded connector, 1/4 inch
1 threaded connector, 1/4 inch NPT
1 threaded connector, 1/8 inch NPT
1 threaded connector M, 10x1
1 threaded connector M, 12x1
1 round nozzle, diameter 3.5 mm
1 round nozzle, diameter 4.5 mm
1 round nozzle, diameter 5.5 mm
1 special nozzle, diameter 1.8/60°, short
1 special nozzle, diameter 1.8/60°, long
1 special nozzle, diameter 1.8/90°, short
1 special nozzle, diameter 1.8/90°, long
5 nuts, spanner size 16x7 mm
1 flat nozzle, 22 mm
1 complete manifold
1 hexagon key, spanner size 11 mm/16 mm

Kit	Contents	19355	...
1/4-inch kit	29 pieces		101

	1/4 inch	
Individual elements	19355	...
Spacer piece 28 mm		201
Spacer piece 43 mm		202
Spacer piece 70 mm		203
Threaded connector 1/4 inch		204
Threaded connector 1/4 inch NPT		205
Threaded connector 1/8 inch NPT		206
Threaded connector M 10x1		207
Threaded connector M 12x1		208
Round nozzle, diameter 3.5 mm		209
Round nozzle, diameter 4.5 mm		210
Round nozzle, diameter 5.5 mm		211
Special nozzle, diameter 1.8/60°, short		212
Special nozzle, diameter 1.8/60°, long		213
Special nozzle, diameter 1.8/90°, short		214
Special nozzle, diameter 1.8/90°, long		215
Nut, spanner size 16x7 mm		216
Flat nozzle, 22 mm		217
Complete manifold		218
Hexagon key, spanner size 11 mm/16 mm		219





19357 - 19359 Flexible plastic coolant hoses

LOC-LINE® FLEXI
DAS ORIGINAL

Design
- Can be shortened or extended as necessary
- Insensitive to vibration, hose remains in position
- Rust-proof and resistant to chemicals and solvents
- Nozzles, junctions and fittings can be easily replaced

19357 101
1/4-inch kit, 29 pieces,
in plastic box.

19357 101

19357 102
1/2 inch kit, 33 pieces,
in plastic box.

19357 102

1/4-inch set configuration
8 hose sections of 90 mm
3 threaded connectors, NPT 1/8 inch
3 threaded connectors, NPT 1/4 inch
3 round nozzles, diameter 1.5 mm
3 round nozzles, diameter 3.0 mm
3 round nozzles, diameter 6.0 mm
1 hole nozzle, 5 x 1.5 mm diameter
1 hole nozzle, 7 x 1.0 mm diameter
1 flat nozzle, 25 x 0.8 mm
1 stopcock with segment connector
1 Y branch piece
1 setting tool

1/2-inch set configuration
6 hose sections of 140 mm
4 threaded connectors, NPT 3/8 inch
4 threaded connectors, NPT 1/2 inch
2 round nozzles, diameter 6 mm
2 round nozzles, diameter 9 mm
2 round nozzles, diameter 12 mm
1 90° nozzle, diameter 9 mm
1 90° nozzle, diameter 12 mm
2 flat nozzles, 32 x 4.2 mm
2 flat nozzles, 63 x 2.8 mm
1 stopcock with segment connector
2 extensions, each 95 mm
2 clamping rings
1 Y branch piece
1 setting tool

Sets	Contents	19357 ...
1/4-inch set	29 pieces	101
1/2-inch set	33 pieces	102

19358 101
1/4-inch set, 7 pieces.

19358 104-145
1/4-inch individual elements

Set + single elements	1/4 inch 19358 ...
Set consisting of:	
2 hose sections, each approx. 140 mm	
1 each of round nozzle diameter 1.5/3 and 6 mm	
1 each of threaded connector NPT 1/8 inch and 1/4 inch	101
2 hose sections, each approx. 140 mm	104
7.5-m hose in 55 pieces of 140 mm each	106
1 pack of 4 pieces, threaded connector NPT 1/8 inch	110
1 pack of 4 pieces, threaded connector NPT 1/4 inch	111
1 pack of 4 pieces, round nozzle diameter 1.5 mm	112
1 pack of 4 pieces, round nozzle diameter 3.0 mm	113
1 pack of 4 pieces, round nozzle diameter 6.0 mm	114
1 pack of 2 pieces, flat nozzle 25 x 0.8 mm	115
1 pack of 2 pieces, pivot nozzle diameter 1 mm x 16	120
1 pack consisting of:	
1 each of flat nozzle 12 x 1.0 and 12 x 1.5 mm	
1 each of injector nozzle 5 x diameter 1.5 and 7 x diameter 1.0 mm	124
1 pack of 2 pieces, Y branch	128
1 pack of 4 pieces, extensions 95 mm with clamping ring	131
1 ring system with 15 side nozzles	132
1 pack of 2 pieces, check valve	135
1 pack of 2 pieces, stopcock with male thread 1/4 inch	136
1 pack of 2 pieces. stopcock with segment connector	138
1 pack of 4 pieces, hose elbow 1/4 inch	139
1 pack of 4 pieces, hose element with flushing hole 1/4 inch	141
1 setting tool for clamping and releasing segments	145

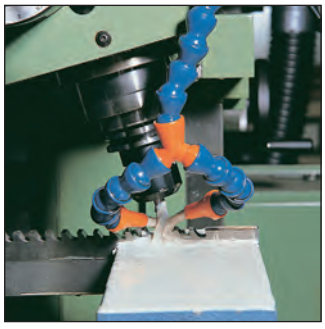
Continued

Continued

19359 101
1/2-inch set, 7 pieces.

19359 104-145
1/2-inch individual elements

Set + single elements	1/2 inch 19359 ...
Set consisting of:	
2 hose sections, each approx. 140 mm	
1 each of round nozzle diameter 6/9 and 12 mm	
1 each of threaded connector NPT 3/8 inch and 1/2 inch	101
2 hose sections approx. 140 mm	104
7.5 m hose in 59 sections of 140 mm each	106
1 pack of 4 pieces, threaded connector NPT 3/8 inch	110
1 pack of 4 pieces, threaded connector NPT 1/2 inch	111
1 pack of 4 pieces, round nozzle diameter 6 mm	112
1 pack of 4 pieces, round nozzle diameter 9 mm	113
1 pack of 4 pieces, round nozzle diameter 12 mm	114
1 pack of 2 pieces, flat nozzle 32 x 4.2 mm	115
1 pack of 2 pieces, flat nozzle 63 x 2.8 mm	116
1 pack consisting of:	
1 each of flat nozzle 18 x 2.0 and 18 x 3.2 mm	
1 each of injector nozzle 7 x diameter 2.0 and 5 x diameter 3.2 mm	124
1 pack consisting of:	
1 piece, each of 90° nozzle diameter 6/9 and 12 mm	
1 piece, 90° shower nozzle	125
1 pack of 2 pieces, Y branch	127
1 pack of 2 pieces, reduction to 1/4 inch	129
1 pack of 2 pieces, Y-junction with reduction to 1/4 inch	130
1 pack of 4 pieces, extensions 95 mm with clamping ring	131
1 ring system with 15 side nozzles	132
1 pack of 2 pieces, check valve	135
1 pack of 2 pieces, stopcock with male thread 1/2 inch	136
1 pack of 2 pieces, stopcock with segment connector	138
1 pack of 4 pieces, hose elbow 1/2 inch	139
1 pack of 4 pieces, extension with clamping ring 1/2 inch	140
1 pack of 4 pieces, hose elements with flushing hole 1/2 inch	141
1 setting tool for clamping and releasing segments	145



19356 Cold air nozzle

Design
- Simple air connection (3–8 bar)
- Cold air escapes from the blue component (- 48°)
- Hot air escapes from the red component (+ 100°)

Applications
Pinpoint cooling/heating.
Efficient use of cooling where no lubrication or cooling lubricants are desired.

19356

Scope of delivery:
- Air nozzle with magnetic plate
- Ball valve
- Connector for compressed air quick coupler 3/8 inch
- Silencer
- Jointed hose, 1/2 inch with round nozzle

Jointed hose connector Inch	Compressed air connection Inch	19356 ...
1/2	3/8	101

19300 Cooling lubricants

Design
- Cooling and machining agent with high corrosion protection for the most demanding applications
- Semi-transparent emulsion
- Increased service life compared to conventional coolants
- Product adapted to HHW track oils 68 and 220 (demulsifying)
- Extremely gentle on the skin
- pH value approx. 9.3 at 5%

Applications
Foam resistant, ideal for CNC machines with high pressures. Suitable for all materials. Mixing ratio1:25 (4%) for light machining, up to 1:10 (10%) for very heavy machining.

Note:
Non-hazardous material, free from chlorine, nitrite and formaldehyde. High corrosion protection even at low concentrations (from 3%). Refractometer value: 1.3. Water hazard class 2.

19300

Contents l	19300 ...
10	101
25	102

19302 Track oils

Design
- Product adapted to HHW cooling lubricants so cannot be mixed with emulsion (demulsifying)
- No sticky residue forms on guideways and the service life of the emulsion is considerably extended

Applications
Demulsifying special oil for tracks and guides. Also suitable for use as hydraulic oil in accordance with DIN 51524/2 and gear oil.

19302

Content L	Kinematic viscosity	Density at 15°C	Flashpoint °C	19302 ...
10	68	0.876	230	101
10	220	0.891	240	102

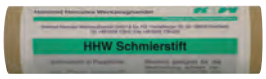
19304 Stainless-steel lubricating stick/cutting pastes

Applications
For heavy machining when thread cutting, broaching and reaming.

Application range:
High-alloyed carbon steels, chrome-nickel alloys, stainless steel, austenitic, ferritic chrome-nickel steels, titanium, manganese.

19304 101
Lubricating stick
Design
- Clings to blades

19304 101



19304 102-103
Cutting paste
Design
- In can

19304 102-103

	Contents g	19304 ...
Lubricating stick	300	101
Cutting paste	120	102
Cutting paste	750	103

19306 Universal cutting oils

Design
- Free of chlorine and mineral oils
- High-quality universal cutting oil based on natural raw materials
- Low tool wear
- Economical

Applications
For medium to heaviest-duty machining tasks.

Note:
Also suitable for minimum quantity lubrication (MMS).

19306 101

19306 102

19306 103-104

	Contents ml	Contents l	19306 ...
Spray	300	–	101
Spray bottle	500	–	102
Canister	–	5	103
Canister	–	10	104

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

19308 Grinding concentrates

Design
- Synthetic grinding concentrate with high corrosion protection **for the most demanding applications**
- The emulsion is **transparent** and thus meets the requirements of**clear-view grinding**
- Increased service life compared to conventional coolants
- Extremely gentle on the skin
- High corrosion protection, even at low concentrations (from 2%)

Applications
For grinding a wide variety of materials. Mixing ratio 1:40 (2.5%). Also suitable as compressed water additive, as additional corrosion protection and as a stabilising agent.

Note:
Free of chlorine, nitrite and formaldehyde. Non-hazardous material. Refractometer value: 2.1. Water hazard class 2.

19308

Contents l	19308 ...
10	101
25	102

19360 Cooling lubricating concentrates

Design
- Emulsifying universal coolants and cutting agents

Applications
For all cutting, machining and deformation tasks.

Note:
Free of nitrites, silicones and phenols.
Free of formaldehyde depot substances.

19360 201

NEW

	Contents l	19360 ...
Canister	9.5	201
Drum	210	202

19366 Canister and drum mixer

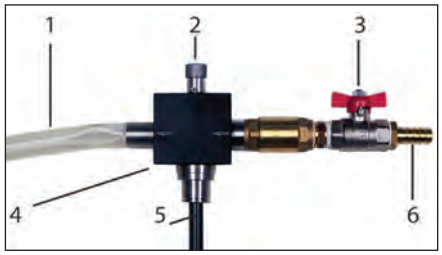
Design
- One mixing device for all container sizes
- Highly efficient and easy to use
- It can be used to mix all water-soluble coolant concentrates (concentration range of 1–16%)
- Can be easily secured on container sizes of 5 kg, 10 kg, 25 kg, 60 kg and 200 kg using 5 different suction tube lengths and screw caps
- Works on the principle of steel pumps (Venturi principle) and does not require electrical power

Applications
Exact dosage for economic use of emulsions.
The mixture ratio can be adjusted precisely using the adjustment wheel.
Concentration is determined by handheld refractometer, see art. no. 19370 101.

19366

Scope of delivery:
- 5 suction pipes
- 2 screw cap adapters for canisters
- 1 screw cap for drums
- 1 transparent hose (length 1.5 m)

1. Emulsion outlet line
2. Concentration controller
3. Ball valve
4. Aluminium housing
5. Suction pipe (5 different lengths)
6. Mains water connection



	19366 ...
	101

19370 Refractometer

Design
- With adjustable eyepiece

Applications
For fast and accurate determination of concentration of water-mixed cooling lubricants and many other solutions in various areas of application.

19370 101

19370 201

	Measuring range %	Accuracy %	Version	19370 ...
Refractometer	0–32	0.2	in protective case	101
Prism cover plate	-	-	-	201

19367 - 19368 Emulsion care carry case including test strips

19367 101
Design
Case contents:
- Thermometer to determine sample temperature
- Plastic cups for taking samples
- Empty bottles for taking samples, 3 pieces
- Nitrite test strips, 100 pieces
- Nitrate test strips, 100 pieces
- Total water hardness test strips, 100 pieces
- pH test strips, 100 pieces
- Emulsion test log
- Plastic case with foam inserts and recess for accommodating a refractometer (not included in scope of delivery, see no. 19370 101).

Applications
For all measurements in accordance with TRGS 611.

19367 101

	Pack = Unit	19367 ...	19368 ...
Emulsion care case	-	101	
Nitrite test strips	100		101
Nitrate test strips	100		102
Total hardness test strips	100		103
pH test strips	100		104

19368 101
Nitrite test strips
Design
Pack = 100 units.

19368 101

19368 102
Nitrate test strips
Design
Pack = 100 units.

19368 102

19368 103
Total hardness test strips
Design
Pack = 100 units.

19368 103

19368 104
pH test strips
Design
Pack = 100 units.

19368 104

33970 pH tester for liquids TESTO 206-pH1

Design
- Combination of °C and pH
- Fast, accurate, simple
- Reliable thanks to automatic final value detection
- Robust, insensitive to contamination

Applications
Changes in the coolant quality can be detected by the self-monitoring function and corrected as necessary. Among other things, the pH value must be recorded here.
Depending on the manufacturer's specifications, the pH value of the lubricant should lie between 7.7 and 9.2 pH. This measurement must be made when preparing the concentrate, and once weekly for emulsions ready for use.
Strongly decreasing pH value runs the risk of corrosion, poor biostability combined with unsatis- factory downtimes (additional costs), unpleasant odours and health hazards.
Measures must be taken in the event of a decrease in pH of 0.2 pH, and the coolant should be changed in the event of a decrease of 0.5 pH.

33970 101
Device set TESTO 206-pH1
Scope of delivery:
- One-handed pH/°C measuring instrument
- pH1 probe head for liquid media
- Storage cap with gel
- Protective cover TopSafe
- Belt/wall bracket

33970 102
Starter set TESTO 206-pH1
Scope of delivery:
- One-handed pH/°C measuring instrument
- pH1 probe head for liquid media
- Storage cap with gel
- Calibration dosage bottles 250 ml pH 4+7
- Protective cover TopSafe
- Belt/wall bracket
- Aluminium case

33970

Technical data:	TESTO 206-pH1	
Measurement sensor:	pH electrode	NTC
Measuring range:	0 to 14 pH	0 to 60 °C (for short periods up to +80 °C, max. 5 min.)
Accuracy +/- 1 digit:	+/- 0.02 pH	+/- 0.4 °C
Resolution	0.01 pH	0.1 °C
Compensation:	Automatic temperature compensation	Automatic temperature compensation
Measuring rate:	2 measurements per second	2 measurements per second
Dimensions:	197 x 33 x 20 mm	197 x 33 x 20 mm

Type	33970 ...
Instrument set TESTO 206-pH1	101
Starter set TESTO 206-pH1	102

19371 Belt skimmer and spare belts

Design
- Easy attachment with magnetic base and adjustable in 6 steps
- Universally adjustable with two joints
- The belt remains under tension in any position in hard-to-reach places thanks to the fixed bracket! You can even secure the device at an angle in hard-to-reach places, such as under a chip conveyor

Advantages:
- Longer service life for cooling lubricants
- Long replacement intervals
- Significantly lower operating costs
- Non-critical low-volt voltage of 3–12 volts
- Significantly reduces strain on the machine operator caused by smells and steam

Applications
For the maintenance of cooling lubricants in machine tools, machining centres, CNC lathes, etc.

19371

Fig.: Straight

Fig.: Angled

Technical data:	
Electrical connection:	230 V, 50 Hz, AC
Connecting cable:	Via plug-in power supply (220 V) on 3–12 V
Immersion depth:	Either 250 mm or 500 mm
Drive:	Belt speed adjustable in 6 levels
Options:	Timer deliverable on request
Output:	Oil leakage performance 1–4 litres/hour
Drain:	Via hose connection

	Belt skimmer	Replacement skimmer belts	
Immersion depth mm	19371 ...	19371 ...	
250		101	201
500		102	202

19378 Thread lubricant

Design
- In handy can

Use
Greasing threads to improve sliding properties.
Prevents threads from cracking.

19378

Contents g	19378 ...
600	101

19379 Thread cutting agent

Design
- Cutting agent with mineral oil base
- **Free from chlorine, silicone, PCBs and solvents**

Applications
For machining steel and stainless steel.

19379 101
Cutting oil Akafil
Applications
Excellent performance especially for manual thread cutting, thread forming and reaming.

19379 102
High-performance cutting grease Akawax
Applications
Indispensable, if liquid oils cannot be used for lubrication, particularly for overhead thread cutting and sawing.
No spilling, no dripping.

19379 101

19379 102

Type	Contents ml	Contents g	19379 ...
Akafil	210	–	101
Akawax	–	350	102

19382 Drilling and cutting oil WD-40 Specialist®

Design
- Reduces wear and friction during machining tasks
- Extends the life of the cutting tools and drills
- Smart Straw™ spray system for full-surface and single-point spraying
- Foams when sprayed for ideal adhesion to the tool

Applications
Suitable for all metals.

19382

Contents ml	19382 ...
400	101

21495 - 21496 Cutting lubricants

TAPMATIC

Design
- Ferrofluid and Alufluid cutting fluids cool and lubricate at the same time
- The cutting fluids are free of sulphur and chlorine and comply with the EU TRGS provisions
- They are non-toxic as defined by the Swiss Chemicals Ordinance (ChemO)
- VOC free

Advantages:
- No built-up edge
- Longer service life of the tools
- Better surface quality

21495
Ferrofluid
Applications
Cutting fluid **for steel.**
Prevents the formation of a built-up edge.

21496
Alufluid
Applications
Cutting fluid **for aluminium, aluminium alloys, copper, brass, bronze, nickel silver and much more.**

21495 21496

Containers litres	21495 ...	21496 ...
0.5	201	201
5.0	202	202

19390 Magnetic chip lifter

Applications
1 tool, 2 uses:
1. Remove chipse
2. Lift small parts

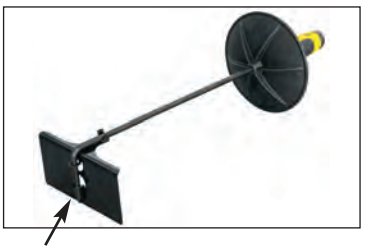
A magnet moves up and down within a stainless-steel round bar. The strong magnet attracts metal chips. Pull the knob and the chips fall off.

19390

Length mm	19390 ...
400	101

19397 Swarf hook

Design
- Ergonomic handle made using 2-component injection moulding technology
- Special finger recess for secure handling and more tractive force
- Fibreglass-reinforced shield
- Burnished shank
- Rounded tip to prevent injuries
- Downwards-angled hook for optimum access



Incl. chip slide for removing small chips

19397

NEW

Total length Approx. mm	Hook length mm	19397 ...
420	300	201
620	500	202

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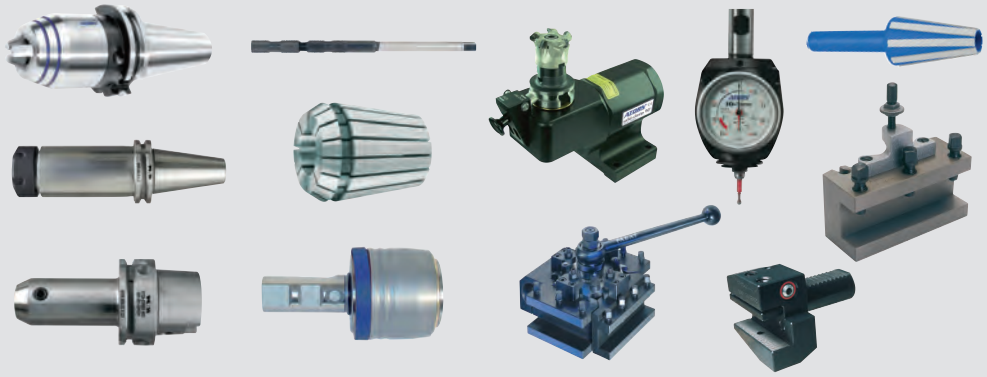
Clamping technology



- *Drill chucks*
- *Tapping chucks/machines*
- *Steep taper tools*
- *HSK chucks*
- *Tool holders for lathes*

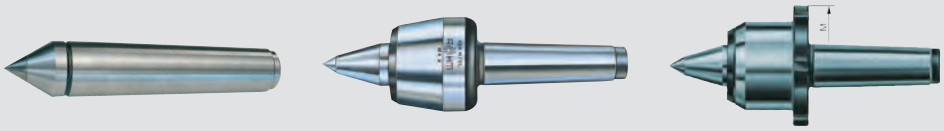
21
21.3 – 21.94

- *Reducing sleeves*
- *Ejector drifts*
- *Clamping sleeves*

22
22.1 – 22.2

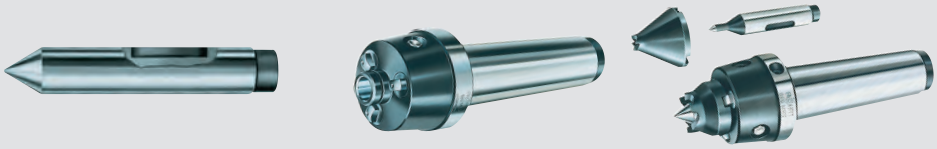
- *Extensions*
- *Tap wrenches*
- *Tool holders*
- *Holder sets*
- *Arbors*
- *Die holders*
- *Die guides*

23
23.1 – 23.4



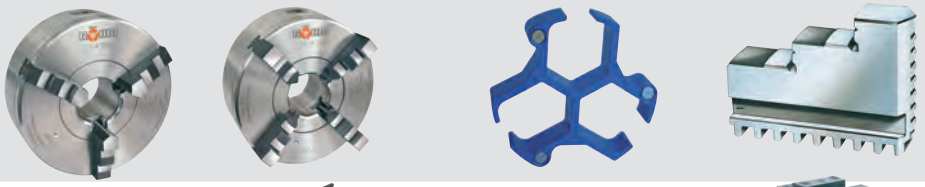
- *Punch tips*
- *Interchangeable inserts*
- *Synchronously running self-centring tapers*

24
24.1 – 24.4



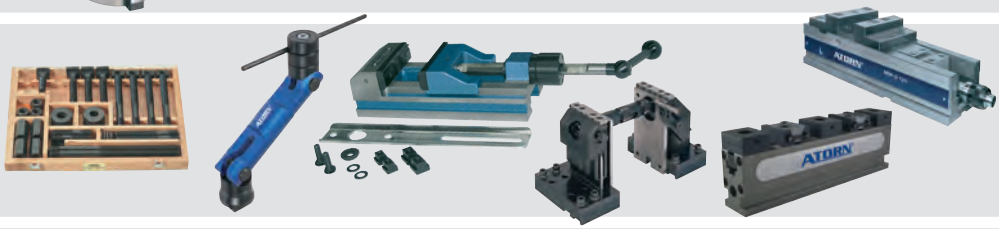
- *Face drivers*
- *Driving plates*
- *Sleeves*

25
25.1 – 25.2



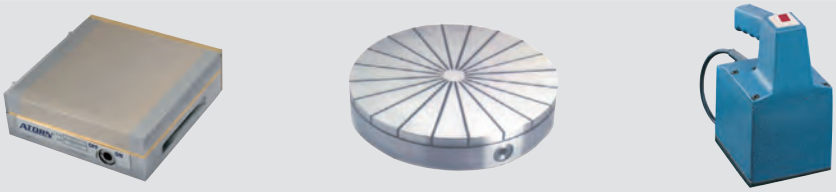
- *Turning and grinding chucks*
- *Hollowing equipment*
- *Hollow spindle stops*
- *Interchangeable jaw grips*
- *Sliding blocks*
- *Jaw sets*

26
26.1 – 26.12



- *T sliding blocks and accessories*
- *Tensioners and accessories*
- *Vices and clamping jaws*
- *NC compact tensioners*
- *Multi clamping systems*

27
27.1 – 27.62



- *Permanent magnetic clamping plates*
- *Round chuck*
- *Demagnetising device*

28
28.1 – 28.2

- *Vertical rack vices*
- *Dividers*
- *Rotary tables*
- *Three-jaw chucks*
- *Co-ordinate tables*

29
29.1 – 29.6

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21110 - 21111 Three-jaw drill chuck

DIN 6349

RÖHM

Design
Type Prima
- With **toothed ring** and key
- Hardened jaws and key hole

21110
Design
- Heavy-duty industrial design
- With tapered mount in accordance with DIN 238

Applications
For clockwise/anti-clockwise rotation.
For stationary and hand-held drilling machines.

21111
Design
- Industrial design

Applications
For clockwise/anti-clockwise rotation.
Mainly used for hand-guided drilling machines.

21110 - 21111

Clamping width mm	Inner taper DIN 238	Outer Ø mm	Key size	21110	...	21111	...
0.5–4.0	B 10	24.0	S 1		101		
0.5–6.5	B 12	29.5	S 1		103		
0.5–6.5	B 10	29.5	S 1				103
0.5–8.0	B 10	29.5	S 1				104
0.5–8.0	B 12	29.5	S 1				105
0.8–10.0	B 12	34.5	S 2A				106

Clamping width mm	Inner taper DIN 238	Outer Ø mm	Key size	21110	...	21111	...
1.0–10.0	B 16	42.8	S 2A		109		
1.5–13.0	B 12	42.8	S 2A				107
1.5–13.0	B 16	42.8	S 2A				111
1.0–16.0	B 18	56.5	S 3		113		
3.0–16.0	B 16	50.0	S 3				112
5.0–20.0	B 22	65.0	S 4		114		

21112 - 21113 Three-jaw drill chuck

DIN 6349

RÖHM

Design
With toothed ring and key, jaws and key hole hardened.

21112
Type Prima
Design
Industrial version with threaded mounting hole.
Applications
For hand-guided, clockwise rotating, hand-held drills and hammer drills.

Note:
21112 107, 21112 109 and 21112 111 for clockwise/anti-clockwise rotation (through hole).

21113
Type Prima-Mat
Design
Industrial version with threaded mounting hole and **eccentric clamping force retention.**
Applications
For hammer drills with higher stroke rates.

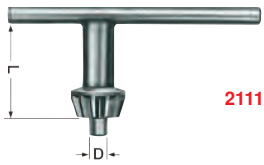
21112 - 21113

Clamping width mm	Thread-mount	Outside Ø mm	Key size	21112	...	21113	...
0.5–8.0	3/8 inch x 24	29.5	S 1		104		
0.8–10.0	3/8 inch x 24	34.5	S 2A		107		
0.8–10.0	1/2 inch x 20	34.5	S 2A		109		

Clamping width mm	Thread-mount	Outside Ø mm	Key size	21112	...	21113	...
1.5–13.0	1/2 inch x 20	42.8	S 2A		111		
3.0–16.0	5/8 inch x 16	50.0	S 3				102
3.0–16.0	M 18 x 2.5	50.0	S 3T				103

21115 Spare key

Applications
For drill chucks with toothed rings.



21115

21115 204

Size	D mm	L mm	21115	...
S 1	4	30		201
S 2A	6	41		202
S 2AT	6	42		204

Size	D mm	L mm	21115	...
S 3	8	50		206
S 3T	8	51		207
S 4	9	55		208

21118 Precision drill chuck with clamping force booster

Design
- Special construction for highest torques (clamping forces)
- Strict quality control **guarantees a high degree of concentricity of 0.05 mm**
- Retention force is doubled by clamping force booster

Applications
Ideal for machining centres, NC machines and CNC machines. **For clockwise/anti-clockwise rotation.**

21118

Clamping range mm	Inner taper DIN 238	Outer Ø mm	Torque kp/cm	21118	...
0–13	B 16	51.5	400		101

Drill chuck

21120 Quick-action drill chuck

Design
- Industrial design
- Self-clamping, keyless
- Clamp and release by hand
- **Only for clockwise rotation**

21120

Clamping range mm	Inner taper DIN 238	Outer Ø mm	Length mm	21120	...
1–10	B 12	36.1	76.2		**103**
1–16	B 16	50.9	114.4		**105**
1–16	B 18	51.0	114.8		**107**

21121 - 21123 Quick-action drill chuck

RÖHM

Type Supra
Design
- Self-clamping, keyless
- Clamp and release by hand, chuck clamps automatically during drilling
- Only for clockwise rotation

21121
Design
- Heavy-duty industrial design
- With tapered mount in accordance with DIN 238

Applications
For stationary drills.

Note:
B18 V shortened by 7 mm.

21122
Design
- Light-duty industrial design
- With tapered mount in accordance with DIN 238

Applications
Mainly used for hand-guided drilling machines.

Note:
B16 V shortened by 2.5 mm.

21123
Design
- Standard version
- Threaded mount

Applications
For hand-guided drills.

21121

Clamping range mm	Inner taper DIN 238	Threaded mount	Outer Ø mm	Length mm	21121	...	21122	...	21123	...
0–6.5	B 10	-	32.0	65.6		**102**				
0–6.5	B 12	-	32.0	65.6		**103**				
0–8.0	B 12	-	35.8	73.4				**104**		
0–10.0	B 12	-	40.2	86.1		**105**				
0–10.0	B 16	-	40.2	89.1		**106**				
0.5–10.0	-	1/2 inch x 20	35.8	73.7						**306**
0.5–10.0	-	3/8 inch x 24	35.8	73.7						**307**
1.0–13.0	-	1/2 inch x 20	46.0	101.5						**308**
1.0–13.0	B 16	-	46.0	101.5		**107**				
1.0–13.0	B 16 V	-	40.2	82.3				**108**		
3.0–16.0	B 16 V	-	46.0	106.0				**109**		
3.0–16.0	B 18 V	-	51.0	106.8		**111**				
3.0–16.0	-	5/8 inch x 16	46.0	97.5						**313**

21125 Quick-action drill chuck

RÖHM

Type Supra SK
Design
- Self-clamping, keyless
- Automatic clamping during drilling proportionate to cutting force
- Clamping force therefore retained even during heavy-duty tasks
- Clamping force retention

Applications
For clockwise/anti-clockwise rotation.

Note:
B16 V shortened by 2.5 mm.

21125

Clamping range mm	Inner taper DIN 238	Threaded mount	Outer Ø mm	Length mm	21125	...
0.5–10	B 12	-	40.0	75.7		**301**
0.5–10	-	1/2 inch x 20	40.0	73.7		**302**
1.0–13	-	1/2 inch x 20	42.8	83.3		**303**
1.0–13	B 16 V	-	42.8	89.3		**304**

21126 Quick-action drill chuck

Type Spiro
Design
- High-accuracy design
- Self-clamping, keyless
- Pointed sleeve
- High concentricity
- Hardened wear parts

Applications
The constant automatic reclamping makes it ideal for high-rotation-speed applications on drills, drilling machines and special drilling units.

Note:
B18 V shortened by 7 mm.

21126 101

Clamping range mm	Inner taper DIN 238	Outer Ø mm	Length mm	21126	...
0–4.0	B 10	28	53.3		**101**
0–6.5	B 10	35	68.6		**102**
0–6.5	B 12	35	68.6		**103**
0–10.0	B 12	43	90.1		**105**
0–10.0	B 16	43	90.1		**106**
1–13.0	B 16	50	102.5		**108**
3–16.0	B 16	55	106.8		**109**
3–16.0	B 18 V	55	106.8		**110**

21128 Keyless drill chuck (plastic version)

Type Extra RV
Design
- Radial locking, through-hole
- With retaining ring, sufficiently robust for impact drills
- Clamping range 1.5-13 mm
- Clamping jaws with cemented-carbide chucking bevel
- Power transmission with fine thread
- **Plastic clamping sleeve**
- Steel holder, good concentricity
- Hexagonal, for mounting and dismounting on the machine spindle

Applications
For clockwise/anti-clockwise rotation.
For cordless drills, screwdrivers and electric drills.

21128

Clamping range mm	Threaded mount	Outer Ø mm	Max. machine power watts	21128	...
1.0–10	3/8 inch x 24	42.7	550		**101**
1.0–10	1/2 inch x 20	42.7	550		**102**
1.5–13	3/8 inch x 24	42.7	1000		**103**
1.5–13	1/2 inch x 20	42.7	1000		**104**

21130 Keyless drill chuck (metal version)

Type Extra RV
Design
- With radial lock
- **Metal clamping sleeve**
- With collision protection, hexagonal for mounting and dismounting on the machine spindle

Applications
For clockwise/anti-clockwise rotation. For cordless drills, screwdrivers and electric drills.

21130 101-102
Design
- Through-hole

21130 103
Design
- Through-hole
- Clamping jaws with cemented-carbide chucking bevel

21130 101

21130 103

Clamping range mm	Threaded mount	Outer Ø mm	Max. machine power watts	21130	...
1.0–10	3/8 inch x 24	42.7	550		**101**
1.0–10	1/2 inch x 20	42.7	550		**102**
1.5–13	1/2 inch x 20	42.7	1100		**103**

21151 - 21152 High-performance three-jaw drill chucks SBF

ALBRECHT
Präzisions Spannfutter

Design
- Clamp and release by hand without key, chuck clamps automatically during drilling
- **Only for clockwise rotation**
- All wear parts are case-hardened, ground and replaceable
- 100% concentricity check using different plug gauge diameters at various measuring points, based on DIN ISO 10888

21151
Design
Type SBF super drill chuck, standard version.

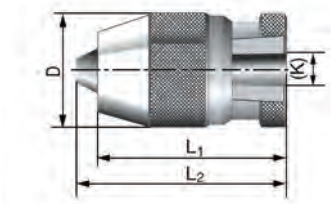
Note:
B 18 = inner taper shortened by 7 mm.

21151 201
Design
With vernier scale for presetting.

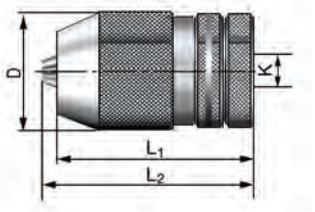
21152
Design
Type NCBF special version with clamping force retention.
Applications
For quick-braking working spindles on **NC machines, CNC machines** etc.

Note:
B 18 = inner taper shortened by 7 mm.

21151

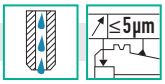


21152



Clamping range mm	Inner taper DIN ISO 239 B	D mm	L_1 mm	L_2 mm	21151	...	21152	...
0–1.5	B 6	19	35.0	37.5		201		
0–3.0	B 10	24	44.0	47.5		202		
0–6.5	B 10	34	61.5	68.0		205		
0–6.5	B 12	34	61.5	68.0		206		
0–10.0	B 12	43	80.0	91.0		208		
0–10.0	B 16	43	80.0	91.0		209		
1–13.0	B 16	50	90.5	103.0		210		102
3–16.0	B 16	56	95.5	109.0		211		
3–16.0	B 18	56	95.5	109.0		212		104

21156 - 21157 Micro/Mini universal drilling and milling chuck

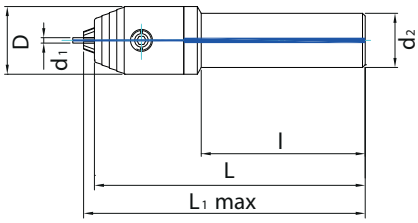


ATORN®

Design
- Cylindrical extension in 2 sizes
- Can be balanced for rotation speeds up to 60,000 rpm
- High retention forces
- High concentricity

Advantages:
- Low interference contour
- Safe and easy to use

Applications
For milling and drilling in the area of precision engineering and the electrical industry, the watch industry, medical technology etc.



Micro universal

21156

Shank d2 mm	L mm	L_1 max. mm	Clamping range mm	D mm	l mm	21156	...
16	80	83	0.2–3.4	19	50		101
16	100	103	0.2–3.4	19	70		102
16	160	163	0.2–3.4	19	130		103
20	80	83	0.2–3.4	19	52		104
20	100	103	0.2–3.4	19	72		105
20	160	163	0.2–3.4	19	132		106

21157

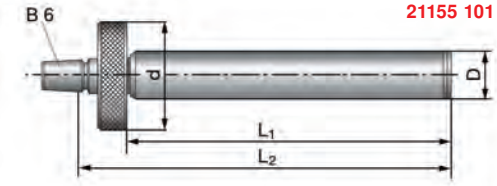
Mini universal

Shank d2 mm	L mm	L_1 max. mm	Clamping range mm	D mm	l mm	21157	...
16	100	104	0.2–6.4	25	60		101
16	150	154	0.2–6.4	25	110		102
16	200	204	0.2–6.4	25	160		103
20	100	104	0.2–6.4	25	60		104
20	150	154	0.2–6.4	25	110		105
20	200	204	0.2–6.4	25	160		106

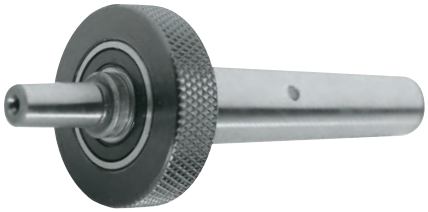
21155 Precision drilling aids

ALBRECHT
Präzisions Spannfutter

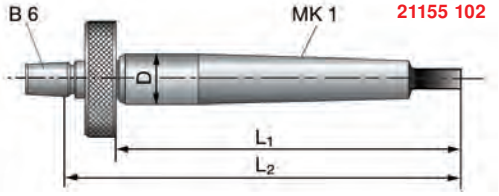
Design
- With B 6 mounting spigot for drill chuck art. no. 21151 201
- Precision drilling aid without drill chuck, drilling depth 20 mm
- A spring balance returns the drill chuck to the starting position



21155 101



Applications
For precision drilling of tiny holes by hand, even on large machines.



21155 102

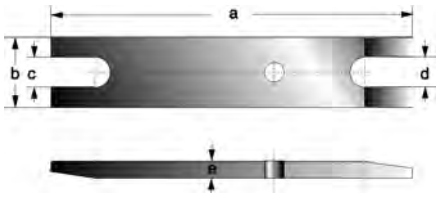
Shank	Ø D mm	Ø d mm	L_1 mm	L_2 mm	21155 ...
13 mm diameter	13	30	66	80	101
MK 1	12	30	82	96	102

21160 Release forks

ALBRECHT
Präzisions Spannfutter

Applications
For easy removal of chucks from the drill chuck mount. Prevents damage to the drilling spindle and the drill chuck.

21160



For B tapers	a mm	b mm	c mm	d mm	e mm	21160 ...
B 6	120	20	7.0	-	8	101
B 10. B 12	170	30	11.0	13.0	10	102
B 16, B 18	210	40	16.7	18.7	12	103

21170 Plug-in pins

Design
With mounting taper in accordance with DIN 238 for mounting drill chucks. Hardened and ground.

21170

MK/drill chucks taper	21170 ...
1/B 10	201
1/B 12	202
1/B 16	203
2/B 10	210
2/B 12	211
2/B 16	212
2/B 18	213

MK/drill chucks taper	21170 ...
3/B 12	220
3/B 16	221
3/B 18	222
3/B 22	223
4/B 16	231
4/B 18	232
5/B 18	242

21177 Plug-in pins

Design
Mounting taper in accordance with DIN ISO 239 B, with **straight shank.** Precision guide with a concentricity less than or equal to 2 µm.

21177

Mounting taper	Ø x length mm	21177 ...
B 12	10 x 50	101
B 16	12 x 60	102
B 16	16 x 50	103
B 18	16 x 70	104

Overview of tool holders (I)

Designation	Figure	ISO 7388-1* SK 30		ISO 7388-1* SK 40		ISO 7388-1* SK 50		ISO 7388-2**		DIN 2080		DIN 69893 HSK		Morse taper		Shank	
		Art. no.	page	Art. no.	page	Art. no.	page	Art. no.	page	Art. no.	page	Art. no.	page	Art. no.	page	Art. no.	page
Short drill chuck				21199 21.11 21200 21.12 21185 21.12 21191 21.12 21202 21.12 21206 21.13		21185 21.12 21191 21.12 21206 21.13		21192 21.30 21207 21.31		21184 21.33 21205 21.34		21829 21.45 21830 21.45		21180 21.37			
Tapping chuck				21456 21.13		21456 21.13		21458 21.31		21455 21.34		21838 21.45		21321 21.37 21406 21.38 21408 21.38 21410 21.38		21452 21.57	
Synchro-nous tapping chuck				21457 21.13		21457 21.13						21837 21.46				21453 21.56	
Drill chuck holder				21601 21.22		21601 21.22		21602 21.32		21600 21.35							
Taper sockets		21609 21.23		21609 21.23 21613 21.23 21618 21.23		21609 21.23 21613 21.23 21618 21.23		21611 21.32		21606 21.35 21612 21.35 21617 21.36		21846 21.51					
Cutter head holders				21671 21.29 21675 21.30		21671 21.29				21670 21.37		21858 21.53 21859 21.53					
Combination push-on mandrel		21650 21.28		21650 21.28		21650 21.28		21651 21.33		21649 21.36		21855 21.52		21648 21.39			
ER collet chuck		21512 21.14		21512 21.14 21500 21.14		21512 21.14		21514 21.31		21511 21.34		21843 21.48 21845 21.48					
OZ collet chuck		21543 21.17		21543 21.17		21543 21.17		21545 21.31		21542 21.35				21541 21.39			
Tool holder for screw-in milling cutter				17676 21.22								21841 21.47					
Surface chuck		21632 21.25		21632 21.25 21620 21.26 21621 21.26 21637 21.27		21632 21.25 21637 21.27		21633 21.32		21630 21.36		21849 21.51 21851 21.52					
Precision collet chuck				21505 21.15 21507 21.16 21508 21.16		21507 21.16 21508 21.16						21842 21.49 21844 21.50 21862 21.50					
Hydraulic expansion chuck				21580 21.17 21710 21.18 21576 21.18		21580 21.17 21576 21.18						21840 21.46 21847 21.47 21866 21.46					
Shrink-fit chuck				21596 21.19 21605 21.20 21614 21.21 21615 21.21								21597 21.43 21599 21.44 21803 21.40 21807 21.41 21808 21.41					
HG chuck				21625 21.24		21625 21.24						21848 21.51					
Holder for WP full drill				21639 21.27		21639 21.27											

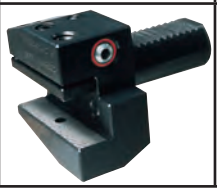
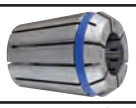
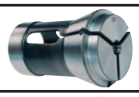
* DIN 69871-1 has been replaced by ISO 7388-1 (dimensions are identical)

** JIS B 6339 MAS BT has been replaced by ISO 7388-2

Overview of tool holders (II)

Designation	Figure	page	Designation	Figure	page
Ring gear drill chuck		21.3	Replacement clamping nuts/ collet chuck wrenches		21.65 - 21.66
Keyless drill chucks		21.5	Shrink-fit chuck extension/ reduction		21.42
Quick-clamping drill chucks		21.4 - 21.6	Inductive shrink-fit devices		21.68
Micro/Mini universal drilling and milling chucks		21.6			
Plug-in pins		21.7	Assembly supports		21.71
ER chuck extensions		21.15			
Reductions for screw-in milling cutters		21.22	Tool presetting devices		21.72 - 21.73
Extensions for screw-in milling cutters		21.22			
Hydraulic expansion extension		21.18	Zero point button		21.75
Intermediate sockets		21.23			
Boring bar blanks		21.30	Saw blade holders		21.79
Coolant tube/ wrench		21.54	Edge finder		21.75 - 21.77
Pull studs		21.55			
Thread cutting attachments		21.56	Centring devices		21.77 - 21.78
Quick-change inserts without safety clutch		21.57			
Quick-change inserts with safety clutch		21.57 - 21.58	Driving collars		21.79
Clamping sleeves for taps		21.58	Milling cutter tightening screw; milling cutter tightening wrench		21.80
Quick-change inserts for synchronised chucks		21.58	Milling spindle rings		21.80

Info — Overview of tool holders (III)

Designation	Figure	page	Designation	Figure	page
Extension for machine taps		21.59	Tool holders		21.81 - 21.83
Reducing sleeves for hydraulic expansion chucks		21.64			
Rubber collet chucks		21.56	Wipers		21.83
HG collet chucks		21.24	Quick-change holder system		21.84 - 21.86
ER collet chucks for thread cutting		21.64	VDI rotary holders		21.87 - 21.92
ER collet chucks		21.60 - 21.64			
OZ collet chucks for thread cutting		21.64			
Pressure collet chucks		21.67			
Accessories for precision collet chucks		21.65			

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

Info — Tool holders according to ISO 7388-1 (old standard DIN 69871)

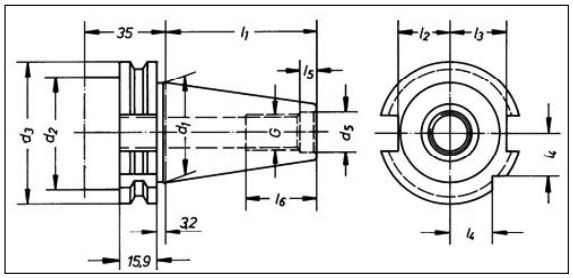
Shanks for NC and machining centres
Version
Alloyed case hardening steel min. tensile strength 950 N/mm² .
Taper angle tolerance more accurate than AT3.
Case-hardened 60-2 HRC.
Functional surfaces ground.

New standard (ISO 7388-1) ISO 7388-1

Shape A: Without through hole
Shape AD: With through hole for central coolant supply
Shape AD/AF: With side coolant supply via the tool collar and through hole
Shape AF: With side coolant supply via the tool collar

Old standard (DIN 69871 Part1) DIN 69871

Shape A: Without through hole
Shape AD: With through hole for central coolant supply
Shape AD/B: With through hole for central coolant supply and 2 holes on the tool collar for side coolant supply
Shape B: With 2 holes on the tool collar for side coolant supply



SK	d1 mm	g	d5 H7 mm	d2 max mm	d3 mm	l1 mm	l2 mm	l3 mm	l4 mm	l5 mm	l6 mm	d6 mm	e mm
30	31.75	M 12	13	45	50.00	47.80	16.4	19.0	15.0	5.5	24	4	21
40	44.45	M 16	17	50	63.55	68.40	22.8	25.0	18.5	8.2	32	4	27
50	69.85	M 24	25	80	97.50	101.75	35.5	37.7	30.0	11.5	47	6	42

21199 — CNC precision drill chuck

ISO 7388-1 | DIN 69871 | G 6,3 25000 1/min | ≤20µm

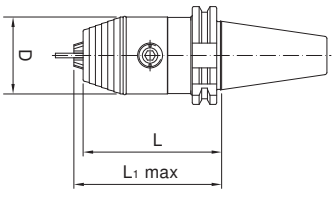
HW

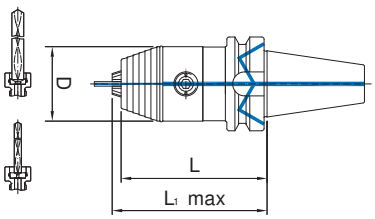
Design
- Concentricity less than or equal to 20 µm
- High clamping force
- Very short design
- Max. rotation speed finely balanced 35,000 rpm

Scope of delivery:
- Delivered with hexagon key with T-handle SW 6 mm

Applications
Suitable for clockwise/anti-clockwise rotation.

21199 201-202
Design
- Incl. sealing washers for the entire clamping range (1x installed, 1x within scope of delivery)





A — **21199 101-102**

AD/AF — **21199 201-202**

Taper SK	Clamping range mm	D mm	L mm	L_1 Max. mm	Torque Nm	Retention force N	Weight kg	ISO 7388-1 A 21199	...	ISO 7388-1 AD/AF 21199	...
40	0.5–13	50	90	96	20	80	1.6		101		
40	2.5–16	57	95	101	20	90	1.8		102		
40	0.5–13	50	90	96	20	80	1.7				201
40	2.5–16	57	95	101	20	90	1.9				202

21200 Precision short drill chuck

ISO 7388-1 | DIN 69871 | AD/AF | G 6,3 12000 1/min | ≤35µm

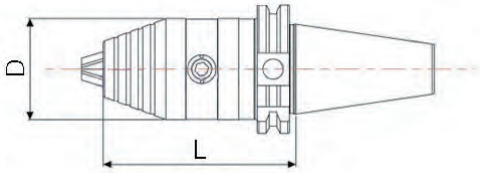
HHW

Design
- Short design
- Wear parts hardened and ground

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

21200



Taper SK	Clamping range mm	L mm	D mm	21200	...
40	2.5–16	95	50		203

21185 Short drill chuck AKL

ISO 7388-1 | DIN 69871 | AD | Vorgew. 7000 1/min | ≤30µm

ALBRECHT
Präzisions Spannfutter

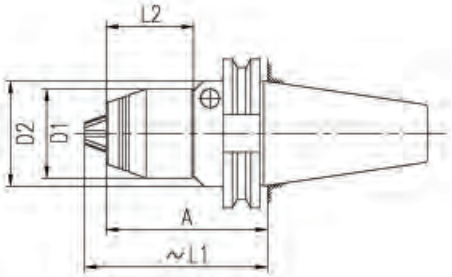
Design
- 100% concentricity checked, based on DIN ISO 10888
- Worm gear for high retention forces

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

Note:
For pull studs, see art. no. 21733–21740.
Other balancing grades available on request.
Type ULTRA with concentricity less than or equal to 0.015 mm deliverable on request.

21185 302



Taper SK	Clamping range mm	A mm	D1 mm	D2 mm	L1 mm	L2 mm	21185	...
40	0.5–10	69	38	45	78	37.5		302
40	1.0–16	80	50	-	92	-		303
50	1.0–16	80	50	-	92	-		304

21191 Precision short drill chuck

ISO 7388-1 | DIN 69871 | AD | G 6,3 7000 1/min | ≤30µm

ATORN®

Design
- Clamped via worm gear
- Short model
- Hardened wear parts

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

Note:
For pull studs, see art. no. 21733–21740.

21191

Taper SK	Clamping range mm	A mm	D mm	21191	...
40	1–16	80	50		101
50	1–16	80	50		102

21202 Precision short drill chuck

ISO 7388-1 | DIN 69871 | A | G 6,3 10000 1/min | ≤30µm

mimatic
Tool Systems

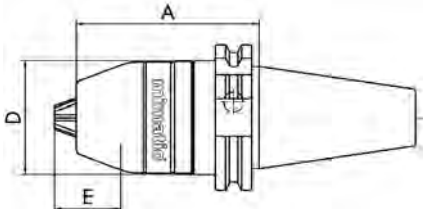
Design
- Short model
- Hardened wear parts

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

Note:
For pull studs, see art. no. 21733–21740.

21202



Taper SK	Clamping range mm	A mm	D mm	E mm	21202	...
40	0.5–13	80.0	48.5	29		201
40	2.5–16	80.0	51.0	29		202

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21206 Precision short drill chuck

ISO 7388-1 | DIN 69871 | A | G 6,3 12000 1/min | ≤30µm

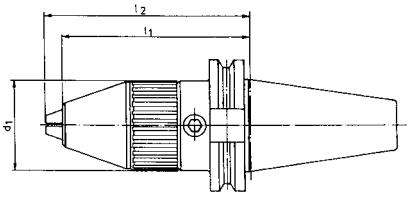
Design
- Short, robust and slim design
- Gear ratio generates high gripping forces
- High precision and concentricity

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

Note:
For pull studs, see art. no. 21733–21740.

21206



Taper SK	Clamping range mm	l_1 mm	d_1 mm	l_2 mm	21206	...
40	1.0–13	87.5	43	95.5		101
40	2.5–16	104.5	56	109.5		102
50	1.0–13	87.5	43	95.5		103
50	2.5–16	106.5	56	111.5		104

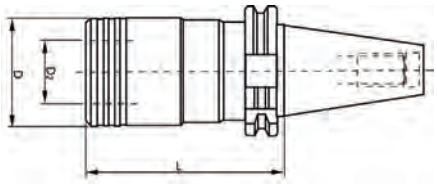
21456 Quick-change tapping chuck

ISO 7388-1 | DIN 69871 | A

Design
- With length compensation under compression and tension

Note:
For quick-change inserts, see art no. 21459–21460.
For pull studs, see art. no. 21733–21740.

21456



Taper SK	For screw tap	Suitable inserts/size	Length compensation Pressure/tension mm	L mm	D mm	D_2 mm	21456	...
40	M 3–M 12	1	9.0/9.0	60	38	19		101
40	M 6–M 20	2	15.0/15.0	100	55	31		102
40	M 14–M 33	3	24.0/24.0	138	79	48		103
50	M 3–M 12	1	9.0/9.0	62	38	19		104
50	M 6–M 20	2	15.0/15.0	83	55	31		105

21457 Quick-change tapping chuck for synchronous spindles

ISO 7388-1 | DIN 69871 | A

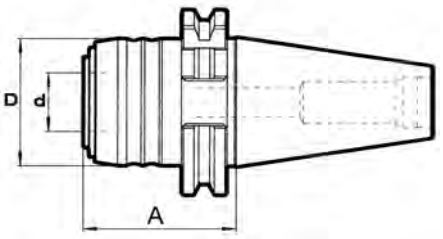
Design
- Minimum length compensation applied by damping element
- Secure clamping in quick-change inserts for ER collets
- Clamping screws to prevent rotation of the clamped screw tap

Applications
For use on drilling and machining centres with synchronous spindles.

Caution:
The use of a synchronous collet reduces the high axial forces. Screw tap service life is greatly extended.

Note:
For quick-change inserts, see art. no. 21465.

21457



Taper SK	Size ER	d mm	D mm	A mm	Length compensation Pressure/tension mm	For screw tap	21457	...
40	16	20	43	53	0.2/1.0	M 3–M 12		101
40	25	32	60	90	0.2/1.0	M 6–M 20		102
50	16	20	43	53	0.2/1.0	M 3–M 12		103
50	25	32	60	74	02/1.0	M 6–M 20		104

21506 - 21510 ER collet chuck set

ISO 7388-1 | DIN 69871 | AD | ≤3µm

	Set contents
1	**High-performance drilling and milling chuck, type ER 40,** clamping range 3–26 mm
13	**Collet chucks, type 472 E, slotted on both sides,** Diameter 4/5/6/8/10/12/14/16/18/20/22/24/25 mm
1	**Spanner**

21506 102

	Set contents	Shank	Version	21506	...	21510	...
Collet chuck set	15 pieces	SK 40	In plastic case		102		
Plastic box	-	-	Empty				107

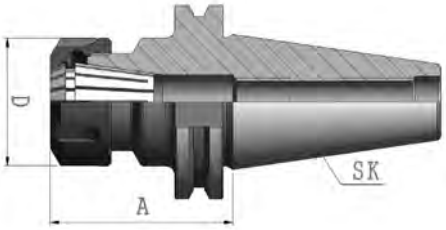
21512 ER collet chuck

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤5µm

Design
- Precision design
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Ground inner and outer taper
- Balluf chip bore
- Max. concentricity < 0.005 mm
- Size ER 16 with hexagonal nut

Applications
For clamping tools with straight shanks in collet chucks in accordance with DIN 6499, shape A and B.

Note:
For collet chuck sets, see art. no. 21519; for collet chucks, see art. no. 21520–21525 and 21534–21539. For pull studs, see art. no. 21733–21740; for spanners, see art. no. 21532.



Short

Taper SK	Size	Clamping range mm	Collet chucks type	A mm	D mm	21512 ...
30	32	2–20	ER 32/470 E	70	50	203
40	ER 16	1–10	ER 16/426 E	63	32	204
40	ER 25	2–16	ER 25/430 E	60	42	207
40	32	2–20	ER 32/470 E	70	50	208
40	ER 40	3–26	ER 40/472 E	80	63	209
50	25	2–16	ER 25/430 E	60	42	221
50	32	2–20	ER 32/470 E	70	50	212
50	ER 40	3–26	ER 40/472 E	80	63	213

21512
Short

Medium length

Taper SK	Size	Clamping range mm	Collet chucks type	A mm	D mm	21512 ...
40	ER 16	1–10	ER 16/426 E	100	32	205
40	ER 25	2–16	ER 25/430 E	100	42	215
40	32	2–20	ER 32/470 E	100	50	217
40	ER 40	3–26	ER 40/472 E	100	63	219
50	ER 16	1–10	ER 16/426 E	100	32	210
50	ER 25	2–16	ER 25/430 E	100	42	222
50	32	2–20	ER 32/470 E	100	50	224
50	ER 40	3–26	ER 40/472 E	100	63	226

21512
Medium length

Long

Taper SK	Size	Clamping range mm	Collet chucks type	A mm	D mm	21512 ...
40	ER 16	1–10	ER 16/426 E	160	32	206
40	ER 25	2–16	ER 25/430 E	160	42	216
40	32	2–20	ER 32/470 E	160	50	218
40	ER 40	3–26	ER 40/472 E	160	63	220
50	ER 16	1–10	ER 16/426 E	160	32	211
50	ER 25	2–16	ER 25/430 E	160	42	223
50	32	2–20	ER 32/470 E	160	50	225
50	ER 40	3–26	ER 40/472 E	160	63	227

21512
Long

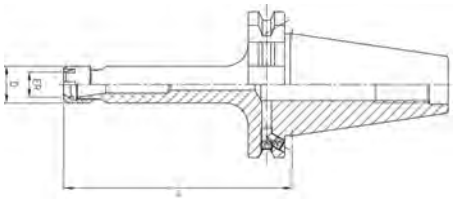
21500 ER collet chuck, slim

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm | HSC

Design
- Clamping nut finely balanced for HSC, ER11 through hole bored
- Shank hard-turned with Balluf chip bore

Applications
For clamping tools with straight shanks in collet chucks in accordance with DIN 6499, shape A and B.

Note:
For collet chuck sets, see art. no. 21519; for collet chucks, see art. no. 21520–21525 and 21534–21539.
For pull studs, see art. no. 21733–21740.
For chuck key, see art. no. 21516.



Medium length

Taper SK	Size	Clamping range mm	Collet chucks type	A mm	D mm	21500 ...
40	ER 11	1–7	ER 11/4008 E	100	16	101
40	ER 16	1–10	ER 16/426 E	100	22	103
40	ER 25	1–16	ER 25/430 E	100	35	105

21500
Medium length

Long

Taper SK	Size	Clamping range mm	Collet chucks type	A mm	D mm	21500 ...
40	ER 11	1–7	ER 11/4008 E	160	16	102
40	ER 16	1–10	ER 16/426 E	160	22	104
40	25	1–16	ER 25/430 E	160	35	106

21500
Long

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

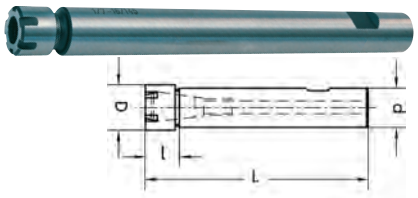
21515 ER chuck extensions

Design
- Cylindrical tool holder with Weldon shank
- Smallest dimensions

Applications
Extensions in Weldon mounts and collet chucks.

Note:
For spanner, see art. no. 21516.

21515



Clamping range mm	Shank Ø d mm	Collet chucks Type	L mm	D mm	21515	...
1–7	16	ER 11/4008 E	162	16		**101**
1–10	20	ER 16/426 E	178	22		**102**
1–13	25	ER 20/428 E	190	28		**103**

21505 Precision collet chuck

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤3µm

ATORN®

Design
- Highly accurate, **patented** precision chuck with the highest concentricity and repeatability
- High retention forces
- High rigidity
- Extremely robust
- Large tool aperture

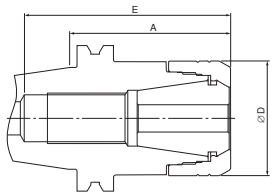
Scope of delivery:
Incl. clamping nut.

Applications
For high-precision clamping during roughing and finishing, drilling, reaming, countersinking, thread cutting etc.

Caution:
Also suitable for HPC/HSC milling up to approx. 200 °C.

Note:
For spanner, see art. no. 21509.
For GERC-HP collet chucks, see art. no. 21546–21551.
For GERC-B collet chucks, see art. no. 21534–21539.
For pull studs, see art. no. 21733–21740.
For replacement clamping nuts, see art. no. 21518.

21505



Taper SK	Clamping range mm	Collet chucks type	A mm	D mm	Max. insertion depth E without stop mm	Suitable clamping nut	Tightening torque of clamping nut Nm	21505	...
40	1–10	GERC 16	70	30	55	AER 16	55		**101**
40	1–16	GERC 25	70	40	114	AER 25	85		**105**
40	2–20	GERC 32	70	50	99	AER 32	140		**109**
40 L	1–10	GERC 16	100	30	85	AER 16	55		**102**
40 L	1–16	GERC 25	100	40	114	AER 25	85		**106**
40 L	2–20	GERC 32	100	50	114	AER 32	140		**110**
40 XL	1–10	GERC 16	160	30	117	AER 16	55		**103**
40 XL	1–16	GERC 25	160	40	118	AER 25	85		**107**
40 XL	2–20	GERC 32	160	50	135	AER 32	140		**111**

21507 - 21508 CENTRO|P precision collet chuck

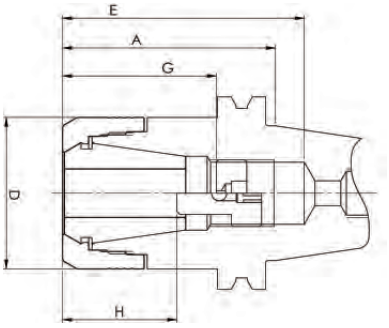
ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm

FAHRION® PRAZISION

Design
- Ground inner and outer taper
- Concentricity and repeatability 0.003 mm (with GERC-HP collet chucks)
- **Supplied without clamping nut**

Applications
For precision clamping of tools with straight shanks without any loss of concentricity or gripping force up to a shaft tolerance of h10.

Note:
Collet chucks with square drives for screw taps cannot be used.
For clamping nuts and spanners, see art. no. 21509.
For sealing washers, see art. no. 21513 (only available online).
GERC-HP/-HPD/-HPDD collet chucks, see art. no. 21546–21551 and 21563–21569.
For pull studs, see art. no. 21733–21740.

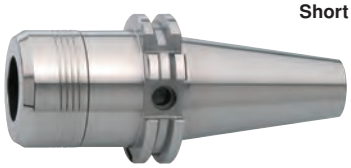


21507
Design
Standard design.

Short

Taper SK	Size	Clamping range mm	Collet chucks type	D mm	A mm	Insertion depth E mm	21507	...
40	CP 16	1–10	GERC 16/426 E	30	70	55		103
40	CP 25	2–16	GERC 25/430 E	40	70	114		108
40	CP 32	2–20	GERC 32/470 E	50	70	99		113
50	CP 32	2–20	GERC 32/470 E	50	70	109		116

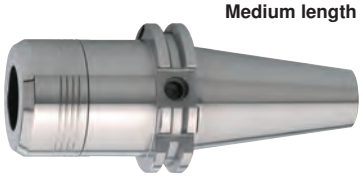
21507
Short



Medium length

Taper SK	Size	Clamping range mm	Collet chucks type	D mm	A mm	Insertion depth E mm	21507	...
40	CP 16	1–10	GERC 16/426 E	30	100	85		104
40	CP 25	2–16	GERC 25/430 E	40	100	114		109
40	CP 32	2–20	GERC 32/470 E	50	100	114		114
50	CP 32	2–20	GERC 32/470 E	50	100	120		117

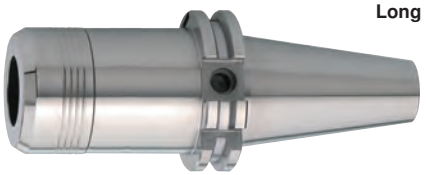
21507
Medium length



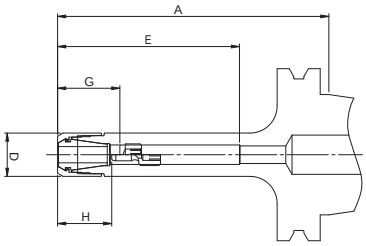
Long

Taper SK	Size	Clamping range mm	Collet chucks type	D mm	A mm	Insertion depth E mm	21507	...
40	CP 16	1–10	GERC 16/426 E	30	160	117		105
40	CP 25	2–16	GERC 25/430 E	40	160	118		110
40	CP 32	2–20	GERC 32/470 E	50	160	135		115
50	CP 32	2–20	GERC 32/470 E	50	160	150		118

21507
Long



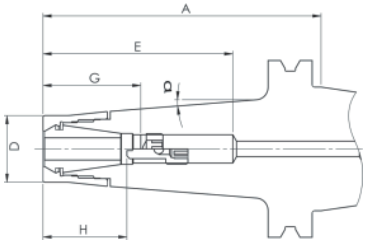
21508 101-102
Design
Slim design.



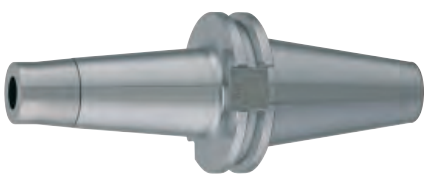
21508 101-102

Taper SK	Size	Clamping range mm	Collet chucks type	D mm	A mm	Insertion depth E mm	21508	...
40	CP 11 M	1–7	GERC 11/4008 E	16	100	84		101
40	CP 11 M	1–7	GERC 11/4008 E	16	160	144		102

21508 201-202
Design
Tapered design.



21508 201-202



Taper SK	Size	Clamping range mm	Collet chucks type	D mm	A mm	Insertion depth E mm	21508	...
40	CPC 16C	1–10	GERC 16/426 E	24	100	120		201
40	CPC 16C	1–10	GERC 16/426 E	24	160	120		202

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21543 OZ collet chuck

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤3µm

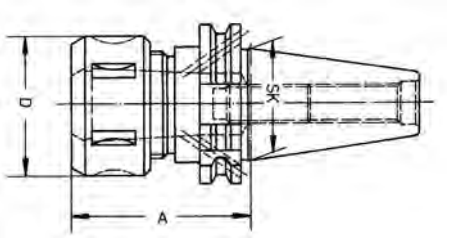
Design
- Ground inner and outer taper
- Ball-bearing union nut
- Balluf chip bore

Note:
For collet chucks, see art. no. 21552–21554. For pull studs, see art. no. 21733–21740.

Scope of delivery:
Includes clamping nut.

Applications
For clamping tools with straight shanks in collet chucks in line with DIN 6388.

21543



Taper SK	Clamping range mm	For collet chucks type	A mm	D mm	21543	...
30	2–16	415 E	60	43		101
40	2–25	462 E	70	60		103
40	3–32	467 E	90	72		104
50	2–25	462 E	70	60		105
50	4–32	467 E	80	72		106

21580 Hydro expansion chuck

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤3µm

ATORN®

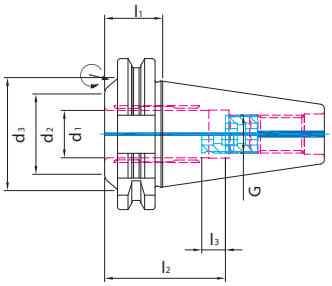
Design
- High degree of concentricity and maximum torque transmission
- Vibration-damping tool clamping
- Easy to use
- High positioning accuracy and repetition accuracy
- Made in Germany

Scope of delivery:
Incl. hexagonal T-handle key

Applications
For finish, drilling and reaming.
Can clamp all common shanks.

Note:
For reducing sleeves, see cat. no. 21581.
For pull studs, see art. no. 21733–21740.
Key for coolant tube, see art. no. 21865.

21580 100
Design
- Ultra short

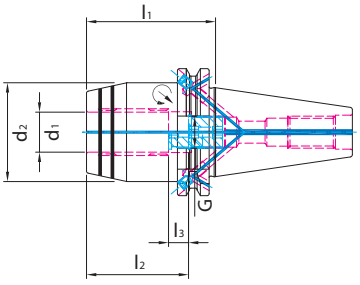


AD

21580 100

Taper SK	d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_2 mm	l_3 mm	THD	SW mm	21580	...
40	20	34	48	24.5	51	10	M 16 x 1	8		100

21580 101-102
Design
- Short, heavy



AD/AF

21580 101-102

Taper SK	d_1 mm	d_2 mm	l_1 mm	l_2 mm	l_3 mm	THD	SW mm	21580	...
40	20	49.5	64.5	51	10	M 16 x 1	8		101
50	32	72.0	81.0	61	10	M 16 x 1	8		102

21710 Ultra-slim hydraulic expansion chuck 3°

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm | HSC

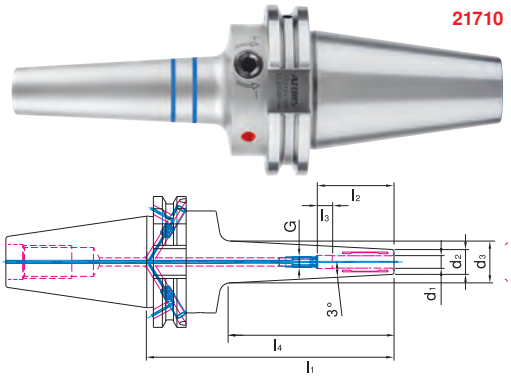
ATORN®

Design
- Newly developed, ultra-slim hydraulic expansion chuck with 3° incline
- Increased clamping force
- For tight interference contours
- Very high temperature resistance up to 180 °C

Advantages:
- Near-contour machining
- **Expensive shrink-fit device no longer required**

Applications
For drilling, reaming and milling.

21710



Taper SK	d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	THD	SW mm	21710	...
40	3	9	49.4	120	28	16	79.5	M 3	1.5		098
40	4	10	49.5	120	28	12	79.5	M 3	1.5		099
40	5	11	49.5	120	28	8	79.5	M 3	1.5		100
40	6	12	49.5	120	37	20	59.9	M 5	2.5		101
40	8	14	49.5	120	37	10	79.9	M 6	3.0		102
40	10	16	49.5	120	41	10	80.9	M 8 x 1	3.0		103
40	12	18	49.5	120	46	10	81.9	M 10 x 1	5.0		104

21576 HHD hydraulic expansion roughing chuck

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm

ATORN®

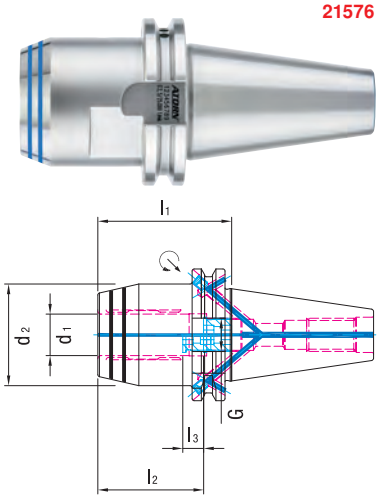
Design
- Further development of the standard expansion chuck
- Best torque transmission
- High damping properties
- High temperature resistance

Advantage:
- Can clamp all common shanks

Applications
For heavy-duty machining in HSC, HPC and TF milling applications.

Note:
For reducing sleeves, see art. no. 21581.
For pull studs, see art. no. 21733–21740.

21576



Taper SK	d_1 mm	d_2 mm	l_1 mm	l_2 mm	l_3 mm	THD	SW mm	21576	...
40	12	42	50.0	46	10	M 8 x 1	3		101
40	20	49	64.5	51	10	M 16 x 1	8		102
50	20	49	64.5	51	10	M 16 x 1	8		103

21579 Hydraulic expansion extension

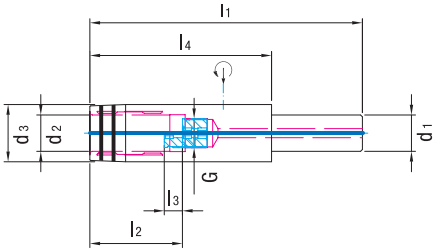
G 2,5 25000 1/min | ≤6µm

ATORN®

Design
- Made from high-quality, tempered tool steel

Applications
For extension and adaptation in different clamping tools.

21579



d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	THD	21579	...
20	12	25.0	150	46	10	100	M 10 x 1		101
20	20	31.5	150	51	10	100	M 16 x 1		102
32	20	31.5	150	51	10	90	M 16 x 1		103
32	20	31.5	200	51	10	90	M 16 x 1		104

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

ISO 7388-1 | DIN 69871 | AD | G 6,3 18000 1/min | ≤3µm

diebold

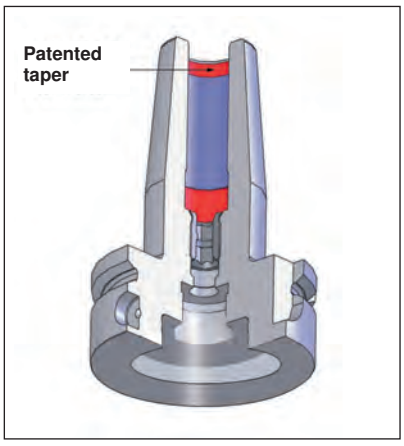
Design
- **Highest level of concentricity** and taper tolerance
- Made in air-conditioned production

Advantages:
- High retention forces and long service life thanks to the use of **high-quality heat-resistant steels** and special heat treatment processes
- **Patented taper allows** automatic shrink processes and simplified handling

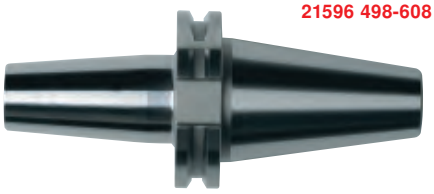
Applications
For clamping of cemented carbide, HSS and steel shafts with a tolerance of h6.

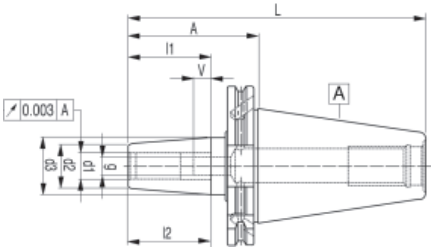
Note:
Incl. length-adjusting screw.
For extensions, see art. no. 21598.
For pull studs, see art. no. 21733–21740. For shrinking equipment, see art. no. 21588–21595.

21596 701-722
Design
- Slim, **stainless coated**



21596 498-608



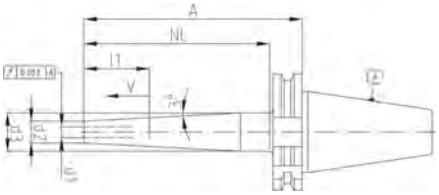


Taper SK	d1 mm	d2 mm	d3 mm	L1 mm	L2 mm	A mm	V mm	g	21596 ...
40	3	15	20	20	32	80	5	M 6	**498**
40	4	15	20	20	32	80	5	M 6	**499**
40	5	15	20	25	32	80	5	M 6	**500**
40	6	20	27	36	45	80	10	M 5	**501**
40	8	20	27	36	45	80	10	M 6	**502**
40	10	24	32	42	50	80	10	M 8 x 1	**503**
40	12	24	32	47	50	80	10	M 8 x 1	**504**
40	14	27	34	47	50	80	10	M 10 x 1	**505**
40	16	27	34	50	50	80	10	M 12 x 1	**506**
40	18	33	42	50	57	80	10	M 12 x 1	**507**
40	20	33	42	52	57	80	10	M 16 x 1	**508**
40	25	44	50	58	60	100	10	M 16 x 1	**509**
40	32	44	50	62	38	100	10	M 16 x 1	**510**
40 L	6	21	27	36	45	**120**	10	M 5	**550**
40 L	8	21	27	36	45	**120**	10	M 6	**551**
40 L	10	24	32	42	50	**120**	10	M 8	**552**
40 L	12	24	32	47	50	**120**	10	M 8	**553**
40 L	14	27	34	47	50	**120**	10	M 8	**554**
40 L	16	27	34	50	50	**120**	10	M 12	**555**
40 L	18	33	42	50	57	**120**	10	M 12	**556**
40 L	20	33	42	52	57	**120**	10	M 16	**557**
40 XL	6	20	27	36	45	**160**	10	M 5	**601**
40 XL	8	20	27	36	45	**160**	10	M 6	**602**
40 XL	10	24	32	42	50	**160**	10	M 8 x 1	**603**
40 XL	12	24	32	47	50	**160**	10	M 8 x 1	**604**
40 XL	14	27	34	47	50	**160**	10	M 8 x 1	**605**
40 XL	16	27	34	50	50	**160**	10	M 12 x 1	**606**
40 XL	18	33	42	50	57	**160**	10	M 12 x 1	**607**
40 XL	20	33	42	52	57	**160**	10	M 16 x 1	**608**

Slim

Taper SK	d1 mm	d2 mm	d3 mm	l1 mm	NL mm	A mm	V mm	g	21596 ...
40	3	9	13	20	60	83	5	M 6	**701**
40	4	10	14	20	60	83	5	M 6	**702**
40	6	12	18	36	60	83	5	M 5	**703**
40	8	14	20	36	60	83	5	M 6	**704**
40	10	16	22	42	60	83	5	M 8 x 1	**705**
40	12	18	24	47	60	83	5	M 10 x 1	**706**
40	16	22	28	50	60	83	5	M 12 x 1	**707**
40 L	3	9	16	20	100	**120**	5	M 6	**709**
40 L	4	10	17	20	100	**120**	5	M 6	**710**
40 L	6	12	22	36	100	**120**	5	M 5	**711**
40 L	8	14	24	36	100	**120**	5	M 6	**712**
40 L	10	16	26	42	100	**120**	5	M 8 x 1	**713**
40 L	12	18	28	47	100	**120**	5	M 10 x 1	**714**
40 L	16	22	32	50	100	**120**	5	M 12 x 1	**715**
40 L	20	27	37	52	100	**120**	5	M 16 x 1	**716**
40 XL	6	12	26	36	140	**160**	5	M 5	**717**
40 XL	8	14	28	36	140	**160**	5	M 6	**718**
40 XL	10	16	30	42	140	**160**	5	M 8 x 1	**719**
40 XL	12	18	32	47	140	**160**	5	M 10 x 1	**720**
40 XL	16	22	36	50	140	**160**	5	M 12 x 1	**721**
40 XL	20	27	41	52	140	**160**	5	M 16 x 1	**722**

21596 701-722



21605 Shrink-fit chuck, 3°

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm

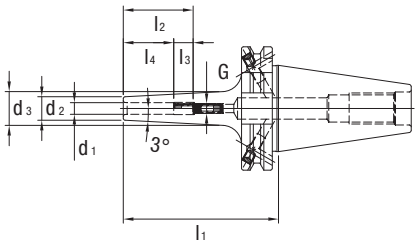
ATORN®

Design
- Slim design
- High transmittable torques
- High concentricity
- Balluf chip bore

Scope of delivery:
- Built-in stop screw

Applications
For shrinking HSS and CC tools
with a shaft tolerance of h6 and more precise.

Quality
Made of special high-strength heat-resistant steel.



Short

Taper SK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	21605	...
40	3	80	9	14	28	16	12	M 6		103
40	4	80	10	15	28	12	16	M 6		104
40	5	80	11	16	30	10	20	M 6		105
40	6	80	12	17	36	10	26	M 5		106
40	8	80	14	19	36	10	26	M 6		108
40	10	85	16	21	41	10	31	M 8 x 1		110
40	12	90	18	24	47	10	37	M 10 x 1		112
40	14	90	20	26	47	10	37	M 10 x 1		114
40	16	95	22	28	50	10	40	M 12 x 1		116
40	18	95	24	30	50	10	40	M 12 x 1		118
40	20	100	26	32	52	10	42	M 16 x 1		120

Medium length

Taper SK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	21605	...
40	3	120	9	16	-	-	12	M 6		203
40	4	120	10	17	-	-	16	M 6		204
40	5	120	11	18	-	-	20	M 6		205
40	6	120	12	22	36	10	26	M 5		206
40	8	120	14	24	36	10	26	M 6		208
40	10	120	16	26	41	10	31	M 8 x 1		210
40	12	120	18	28	47	10	37	M 10 x 1		212
40	14	120	20	30	47	10	37	M 10 x 1		214
40	16	120	22	32	50	10	40	M 12 x 1		216
40	18	120	24	34	50	10	40	M 12 x 1		218
40	20	120	26	36	52	10	42	M 16 x 1		220

Long

Taper SK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	21605	...
40	3	160	9	19	-	-	12	M 6		303
40	4	160	10	20	-	-	16	M 6		304
40	5	160	11	21	-	-	20	M 6		305
40	6	160	12	24	36	10	26	M 5		306
40	8	160	14	26	36	10	26	M 6		308
40	10	160	16	28	41	10	31	M 8 x 1		310
40	12	160	18	30	47	10	37	M 10 x 1		312
40	14	160	20	32	47	10	37	M 10 x 1		314
40	16	160	22	34	50	10	40	M 12 x 1		316
40	18	160	24	36	50	10	40	M 12 x 1		318
40	20	160	26	38	52	10	42	M 16 x 1		320

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21614 - 21615 Shrink-fit chuck, 4.5°

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm

ATORN®

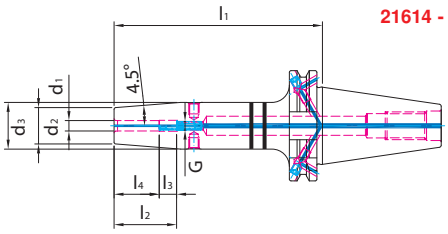
Design
- Slim design
- Made of special high-strength heat-resistant steel
- Additional threads on the circumference
- For subsequent balancing
- Balluf chip bore
- Made in Germany

Scope of delivery:
- Built-in stop screw

Applications
For shrinking HSS and cemented-carbide tools with a shaft tolerance of h6 and more precise.

21614
- With central coolant supply

21615
- With central coolant supply and additional resealable cooling channels



21614 - 21615

Short

Taper SK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21614	...	With KKB 21615	...
40	3	80	10	17	28	16	12	M 6	101			101
40	4	80	15	22	28	12	16	M 6	102			102
40	5	80	15	22	30	10	20	M 6	103			103
40	6	80	21	27	36	10	26	M 5	104			104
40	8	80	21	27	36	10	26	M 6	105			105
40	10	80	24	32	41	10	31	M 8 x 1	106			106
40	12	80	24	32	47	10	37	M 10 x 1	107			107
40	14	80	27	34	47	10	37	M 10 x 1	108			108
40	16	80	27	34	50	10	40	M 12 x 1	109			109
40	18	80	33	42	50	10	40	M 12 x 1	110			110
40	20	80	33	42	52	10	42	M 16 x 1	111			111
40	25	100	44	53	58	10	48	M 16 x 1	112			112

21614 101-112

Medium length

Taper SK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21614	...	With KKB 21615	...
40	3	120	10	17	-	-	12	-	201			201
40	4	120	15	22	-	-	16	-	202			202
40	5	120	15	22	-	-	20	-	203			203
40	6	120	21	27	36	10	26	M 5	204			204
40	8	120	21	27	36	10	26	M 6	205			205
40	10	120	24	32	41	10	31	M 8 x 1	206			206
40	12	120	24	32	47	10	37	M 10 x 1	207			207
40	14	120	27	34	47	10	37	M 10 x 1	208			208
40	16	120	27	34	50	10	40	M 12 x 1	209			209
40	18	120	33	42	50	10	40	M 12 x 1	210			210
40	20	120	33	42	52	10	42	M 16 x 1	211			211

21614 201-211

Long

Taper SK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21614	...
40	3	160	10	17	-	-	12	-	301	
40	4	160	15	22	-	-	16	-	302	
40	5	160	15	22	-	-	20	-	303	
40	6	160	21	27	36	10	26	M 5	304	
40	8	160	21	27	36	10	26	M 6	305	
40	10	160	24	32	41	10	31	M 8 x 1	306	
40	12	160	24	32	47	10	37	M 10 x 1	307	
40	14	160	27	34	47	10	37	M 10 x 1	308	
40	16	160	27	34	50	10	40	M 12 x 1	309	
40	18	160	33	42	50	10	40	M 12 x 1	310	
40	20	160	33	42	52	10	42	M 16 x 1	311	

21614 301-311

Extra long

Taper SK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21614	...
40	3	200	10	17	28	16	12	M 6	401	
40	4	200	15	22	28	12	16	M 6	402	
40	5	200	15	22	30	10	20	M 6	403	
40	6	200	21	27	36	10	26	M 5	404	
40	8	200	21	27	36	10	26	M 6	405	
40	10	200	24	32	41	10	31	M 8 x 1	406	
40	12	200	24	32	47	10	37	M 10 x 1	407	
40	14	200	27	34	47	10	37	M 10 x 1	408	
40	16	200	27	34	50	10	40	M 12 x 1	409	
40	18	200	33	42	50	10	40	M 12 x 1	410	
40	20	200	33	42	52	10	42	M 16 x 1	411	

21614 401-411

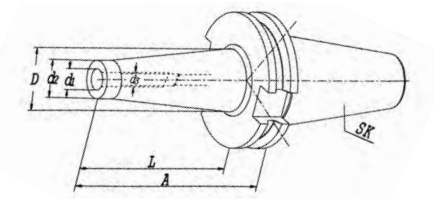
17676 Tool chucks for screw-in mill cutters

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤3µm

Design
- Precision design
- Ground outer taper and fitting surface

Applications
For mounting threaded screw-in mill cutters.

Note:
For pull studs, see art. no. 21733–21740.



17676

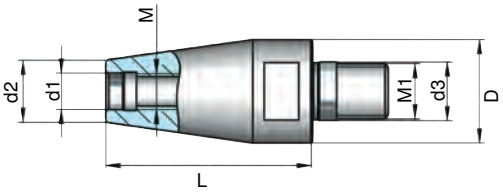
d_3 mm	SK	d_1 mm	d_2 mm	D mm	L mm	A mm	17676	...
M 6	40	6.5	10	13	25	44		101
M 6	40	6.5	10	20	50	69		102
M 6	40	6.5	10	23	75	94		103
M 8	40	8.5	13	15	25	44		104
M 8	40	8.5	13	23	50	69		105
M 8	40	8.5	13	23	75	94		106
M 8	40	8.5	13	25	100	119		107
M 10	40	10.5	18	20	25	44		108
M 10	40	10.5	18	23	50	69		109

d_3 mm	SK	d_1 mm	d_2 mm	D mm	L mm	A mm	17676	...
M 10	40	10.5	18	28	75	94		110
M 10	40	10.5	18	32	100	119		111
M 12	40	12.5	21	24	25	44		112
M 12	40	12.5	21	31	75	94		113
M 12	40	12.5	21	36	125	144		114
M 16	40	17.0	29	29	25	44		115
M 16	40	17.0	29	34	75	94		116
M 16	40	17.0	29	40	125	144		117

21607 Reductions for screw-in mill cutters

Design
- Made of tempered tool steel

Applications
For reducing existing tool chucks.



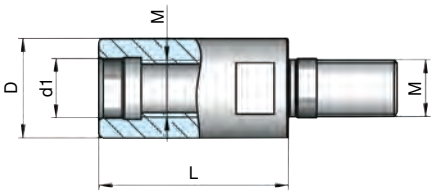
21607

M1 x M	D mm	d_1 mm	d_2 mm	d_3 mm	L mm	21607	...
M8/M5	13.0	5.5	10.0	8.5	30		101
M10/M8	18.5	8.5	13.5	10.5	30		102
M12/M10	23.0	10.5	18.5	12.5	35		103
M16/M10	30.0	10.5	18.5	17.0	60		104
M16/M12	30.0	12.5	23.0	17.0	60		105

21608 Extensions for screw-in mill cutters

Design
- Made of tempered tool steel

Applications
For extending existing tool chucks.



21608

M	D mm	d_1 mm	L mm	21608	...
M 8	13.5	8.5	30		101
M 10	18.5	10.5	35		102
M 12	23.0	12.5	40		103
M 16	30.0	17.0	40		104

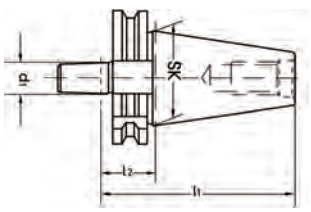
21601 Tool chucks for drill chucks

ISO 7388-1 | DIN 69871 | A | G 2,5 25000 1/min | ≤5µm

Design
- Precision design

Applications
For mounting drill chucks on milling machines.

Note:
For pull studs, see art. no. 21733–21740.



21601

Taper SK	Mount d_1 DIN 238	l_2 mm	l_1 mm	21601	...
40	B 16	25	93.4		301
50	B 16	25	126.75		303

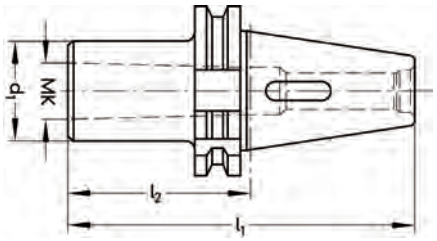
21609 Taper sleeves

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤5µm

Design
- Precision design
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Balluf chip bore
- Max. concentricity < 0.005 mm

Applications
For mounting tools with MK shanks and flat tangs.

Note:
For pull studs, see art. no. 21733–21740.



Outer taper SK	Inner taper MK	l_2 mm	l_1 mm	d_1 mm	21609	...
30	1	50	97.8	25		**301**
30	2	65	112.8	32		**302**
30	3	80	127.8	40		**303**
40	1	50	118.4	25		**304**
40	2	50	118.4	32		**305**
40	2L	117	184.5	32		**306**
40	3	70	138.4	40		**307**
40	3L	133	201.4	40		**308**
40	4	95	163.4	48		**309**
40	4L	156	224.4	48		**310**
50	1	45	146.75	25		**311**
50	2	60	161.75	32		**312**
50	2L	117	218.75	32		**313**
50	3	65	116.75	40		**314**
50	3L	137	238.75	40		**315**
50	4	95	196.75	48		**316**
50	4L	167	268.75	48		**317**
50	5	105	206.75	63		**318**
50	5L	197	298.75	63		**319**

21609 305

21609 306

21613 Milling bit holders

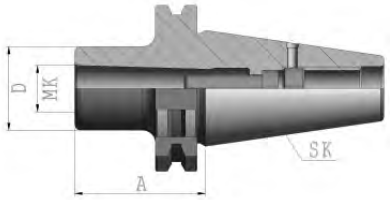
ISO 7388-1 | DIN 69871 | A | G 2,5 25000 1/min | ≤8µm

Design
- Precision design with built-in retaining screw

Applications
For mounting tools with MK shanks and clamping threads.

Note:
For pull studs, see art. no. 21733–21740.

21613



Outer taper SK	Inner taper MK	Clamping thread Internal	A mm	D mm	21613	...
40	1	M 6	50	25		**101**
40	2	M 10	50	32		**102**
40	3	M 12	70	40		**103**
40	4	M 16	95	48		**104**
50	2	M 10	60	32		**106**
50	3	M 12	65	40		**107**
50	4	M 16	70	48		**108**

21618 Spacer sleeves

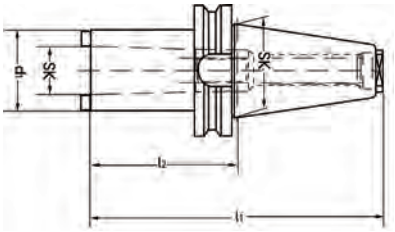
ISO 7388-1 | DIN 69871 | A | G 2,5 25000 1/min | ≤8µm

Design
- Precision design with built-in retaining screw

Applications
For mounting and extending SK shanks.

Note:
For pull studs, see art. no. 21733–21740.

21618



Outer taper SK	Inner taper SK	Clamping thread Outer	Clamping thread Internal	l_2 mm	l_1 mm	d_1 mm	21618	...
40	40	M 16	M 16	100	168.40	63		**202**
50	40	M 24	M 16	70	171.75	70		**203**
50	50	M 24	M 24	120	221.75	97		**204**

21625 HG collet chucks

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm | HSC

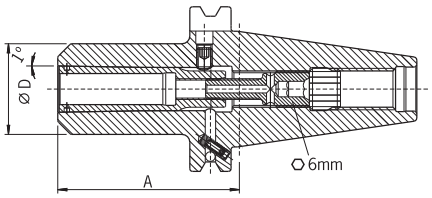
Haimer

Design
- Highly accurate and precise chuck
- Stable tension
- High concentricity

Scope of delivery:
With clamping screw and pull-out hook.

Applications
Ideal for high-speed machining. For clamping tools with straight shanks.

Note:
For HG collets, see art. no. 21627.
For pull studs, see art. no. 21733–21740.



Short

Taper SK	Size	A mm	Ø D mm	For HG collet Ø art. no. 21627	21625	...
40	1	65	30	3/4/5/6/8		101
50	1	65	30	3/4/5/6/8		104
40	2	70	35	10/12/14		107
50	2	70	35	10/12/14		110
40	3	75	48	16/18/20		113
50	3	75	48	16/18/20		116

21625
Short

21625
Medium

Medium length

Taper SK	Size	A mm	Ø D mm	For HG collet Ø art. no. 21627	21625	...
40	1	100	30	3/4/5/6/8		102
50	1	100	30	3/4/5/6/8		105
40	2	100	35	10/12/14		108
50	2	100	35	10/12/14		111
40	3	100	48	16/18/20		114
50	3	100	48	16/18/20		117

21627 HG collets

≤3µm

Haimer

Design
- Hardened spring steel, ground and coated

Applications
For HG chuck and h6 shaft tolerances.

21627

Clamping diameter mm	For size	21627	...
3	1		101
4	1		102
5	1		103
6	1		104

Clamping diameter mm	For size	21627	...
8	1		105
10	2		106
12	2		107
14	2		108

Clamping diameter mm	For size	21627	...
16	3		109
18	3		110
20	3		111

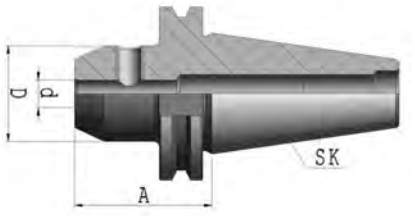
21632 Milling cutter holders

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤5µm

Design
- Precision design
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Inner cooling, AD version
- Balluf chip bore
- Max. concentricity < 0.005 mm

Applications
For clamping tools with side driving surfaces in accordance with DIN 1835 B and DIN 6535 HB.

Note:
For pull studs, see art. no. 21733–21740.
For spare screws, see art. no. 21635.



Extra short

Taper SK	For milling shank Ø d mm	A mm	D mm	21632 ...
40	16	35	45	124 NEW
40	20	35	45	132 NEW
40	25	35	50	136 NEW

21632
Extra short

Short

Taper SK	For milling shank Ø d mm	A mm	D mm	21632 ...
30	6	50	25	101
30	8	50	28	102
30	10	50	35	103
30	12	50	42	104
30	16	63	48	106
30	20	70	52	108
40	6	50	25	109
40	8	50	28	112
40	10	50	35	115
40	12	50	42	118
40	14	50	44	121
40	16	63	48	125
40	18	63	50	129
40	20	63	52	133
40	32	65	50	139 NEW
50	6	63	25	145
50	8	63	28	148
50	10	63	35	151
50	12	63	42	154
50	14	63	44	157
50	16	63	48	160
50	18	63	50	163
50	20	63	52	166

21632
Short

21632
Medium length

21632
Long

Medium length

Taper SK	For milling shank Ø d mm	A mm	D mm	21632 ...
40	6	100	25	110
40	8	100	28	113
40	10	100	35	116
40	12	100	42	119
40	14	100	44	122
40	16	100	48	126
40	18	100	50	130
40	20	100	52	134
40	25	100	63	137
40	32	100	72	140
40	40	120	80	141
50	6	100	25	146
50	8	100	28	149
50	10	100	35	152
50	12	100	42	155
50	14	100	44	158
50	16	100	48	161
50	18	100	50	164
50	20	100	52	167
50	25	80	65	169
50	32	100	72	171
50	40	100	80	173

Long

Taper SK	For milling shank Ø d mm	A mm	D mm	21632 ...
40	6	160	25	111
40	8	160	28	114
40	10	160	35	117
40	12	160	42	120
40	14	160	44	123
40	16	160	48	127
40	18	160	50	131
40	20	160	52	135
40	25	160	63	138
40	32	160	72	100 NEW
50	6	160	25	147
50	8	160	28	150
50	10	160	35	153
50	12	160	42	156
50	14	160	44	159
50	16	160	48	162
50	18	160	50	165
50	20	160	52	168
50	25	160	65	170
50	32	160	72	172

21620 Slim milling cutter holders

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm

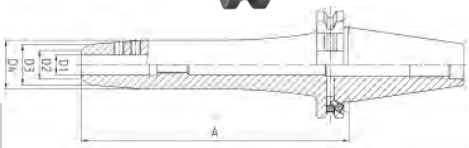
Design
- **Extended slim version**
- Bore tolerance < 0.004 mm
- Shank hard-turned for smoother running
- With ball joint clamping screw **for Weldon and whistle-notch systems**
- Balluf chip bore as standard

Applications
For clamping tools with side driving surfaces in accordance with DIN 1835 B and DIN 6535 HB.

Note:
For pull studs, see art. no. 21733–21740.
For spare screws, see art. no. 21635.

Scope of delivery:
Drilled-through stop screw.

21620

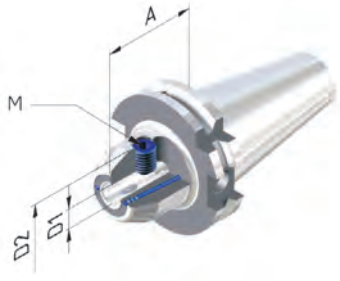


Taper SK	For milling shank Ø D1 mm	A mm	D2 mm	D3 mm	D4 mm	Medium length 21620	...
40	6	100	13	18	29		101
40	8	100	15	20	31		103
40	10	100	16	21	33		105
40	12	100	17	22	35		107
40	16	100	21	26	39		111
40	18	100	23	28	41		113
40	20	100	25	30	43		115

21621 Milling cutter holders with KKB

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤3µm | HPC

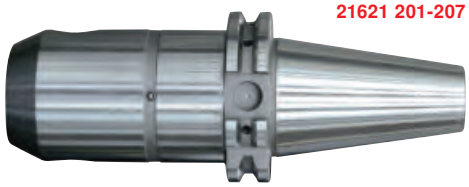
Design
- Hard-turned shank
- Balluf chip bore
- With two coolant channel bores (= KKB)
- With clamping screw and 2 x M3 screws to seal the hole if necessary



21621 101-110

Taper SK	D1 mm	A mm	D2 mm	L mm	M	Short 21621	...
40	6	50	25	35	M 6		101
40	8	50	28	35	M 8		102
40	10	50	35	41	M 10		103
40	12	50	42	48	M 12		104
40	14	50	42	48	M 12		105
40	16	63	48	51	M 14		106
40	20	63	52	53	M 16		108
40	25	100	65	60	M 18 x 2		109
40	32	100	72	64	M 20 x 2		110

21621 201-207



Taper SK	D1 mm	A mm	D2 mm	L mm	M	Medium length 21621	...
40	6	100	25	35	M 6		201
40	8	100	28	35	M 8		202
40	10	100	35	41	M 10		203
40	12	100	42	48	M 12		204
40	16	100	48	51	M 14		206
40	20	100	52	53	M 16		207

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21637 Milling cutter holders with cooling channel

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤3µm

HW

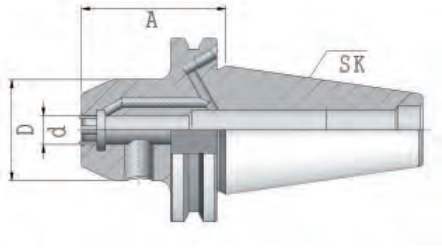
Design
- Precision design
- Bore tolerance < 0.004 mm
- **With cooling channel**
- Balluf chip bore

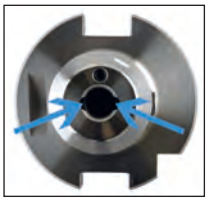
Advantage:
Coolant pressure washes chips away better.

Applications
For clamping tools with side driving surfaces in accordance with DIN 1835 B and DIN 6535 HB.

Note:
For pull studs, see art. no. 21733–21740.
For spare screws, see art. no. 21635.

21637





Short

Taper SK	For milling shank Ø d mm	A mm	D mm	21637 ...
40	6	50	25	201
40	8	50	28	204
40	10	50	35	207
40	12	50	42	210
40	14	50	44	213
40	16	63	48	216
40	18	63	50	219
40	20	63	52	222
50	6	63	25	301
50	8	63	28	302
50	10	63	35	303
50	12	63	42	304
50	14	63	44	305
50	16	63	48	306
50	18	63	50	307
50	20	63	52	308
50	25	80	65	309

Medium length

Taper SK	For milling shank Ø d mm	A mm	D mm	21637 ...
40	6	100	25	202
40	8	100	28	205
40	10	100	35	208
40	12	100	42	211
40	14	100	44	214
40	16	100	48	217
40	18	100	50	220
40	20	100	52	223
40	25	100	63	225
40	32	100	72	227
40	40	120	80	229
50	32	100	72	310
50	40	100	80	311

21639 Tool holders for reversible solid drill inserts

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤3µm

HW

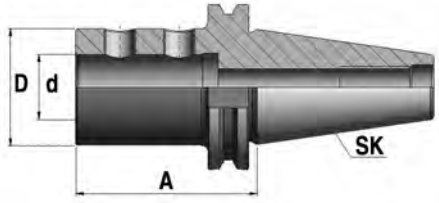
Design
- Precision design
- High degree of concentricity thanks to face-ground contact surface (< 0.003 mm)
- Balluf chip bore

Advantages:
The offset set screw pulls the contact surface of the drill against the enlarged circumference of the unit, which provides better support for the tool and makes higher feed rates possible.

Applications
For all solid drills with straight shanks in line with DIN 6595 Part 1.

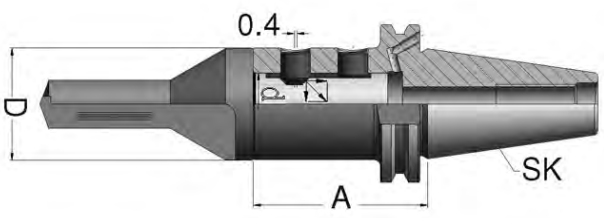
Note:
For pull studs, see art. no. 21733–21740.
For spare screws, see art. no. 21635.

21639 101



21639 103

Taper SK	d mm	A mm	D mm	21639 ...
40	20	65	40	101
40	25	70	45	102
40	32	75	52	103
50	20	70	40	104
50	25	70	45	105
50	32	70	52	106



21650 Combination mill arbors

ISO 7388-1 | DIN 69871 | AD | G 2,5 25000 1/min | ≤5µm

Design
- Precision design
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Balluf chip bore
- Max. concentricity < 0.005 mm
- Face-ground contact surface (< 0.003 mm)
- Long version (160 mm) with KKB

Scope of delivery:
Including key, driver ring and retaining screws.

Applications
With key for cutters with longitudinal grooves such as DIN 841, and driver ring for cutters with lateral groove DIN 1880 and blade heads DIN 1830.

Note:
For pull studs, see art. no. 21733–21740.
For driving rings, see art. no. 21655.
For retaining screws, see art. no. 21656 and 21659.
Retaining screw no. 21657.

Short

Taper SK	d mm	A mm	D mm	l mm	21650 ...
30	16	50	32	17	102
30	22	50	40	19	103
30	27	55	48	21	104
40	16	55	32	17	202
40	22	55	40	19	204
40	27	55	48	21	206
40	32	60	58	24	208
40	40	60	70	27	210
50	16	55	32	17	501
50	22	55	40	19	503
50	27	55	48	21	505
50	32	55	58	24	507
50	40	55	70	27	509

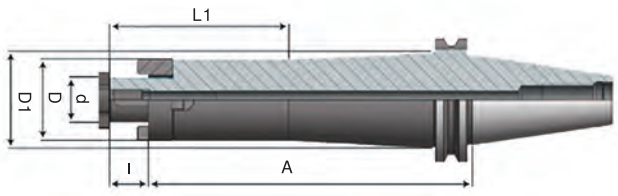
21650
Short

21650
Medium length

Medium length

Taper SK	d mm	A mm	D mm	l mm	21650 ...
40	16	100	32	17	203
40	22	100	40	19	205
40	27	100	48	21	207
40	32	100	58	24	209
50	16	100	32	17	502
50	22	100	40	19	504
50	27	100	48	21	506
50	32	100	58	24	508
50	40	100	70	27	510

21650
Long



Long with KKB

Taper SK	d mm	A mm	D mm	L mm	D1 mm	L1 mm	21650 ...
40	16	160	39.0	17	39.0	88	213
40	22	160	47.0	19	46.5	88	215
40	27	160	48.0	21	-	-	217
40	32	160	58.0	24	-	-	219
50	16	160	39.0	17	39.0	88	512
50	22	160	47.0	19	47.0	88	514
50	27	160	55.5	21	55.0	88	516
50	32	160	65.5	24	65.5	88	518
50	40	160	70.0	27	-	-	520

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

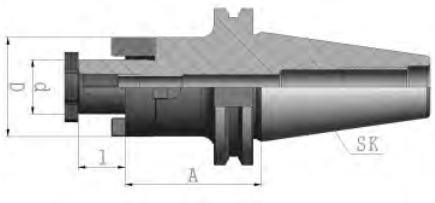
21671 Blade head supports

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤5µm

Design
- Precision version with enlarged and face-ground contact surfaces
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Inner cooling, AD version
- Short overhang for greater stability
- Balluf chip bore
- Max. concentricity > 0.005 mm
- **With cooling channel bore**

Applications
For face milling cutter heads and cutters with lateral grooves.

Note:
d = 40 and 60 mm also have 4 threaded holes for direct mounting.
For pull studs, see art. no. 21733–21740.
For retaining screws, see art. no. 21656 and 21659.
Retaining screw no. 21657.



Short with KKB

Taper SK	d mm	A mm	D mm	l mm	21671 ...
40	16	35	38	17	304
40	22	35	48	19	305
40	27	40	58	21	306
40	32	50	78	24	307
40	40	50	88	27	308
50	16	35	38	17	400 NEW
50	22	35	48	19	402
50	27	40	58	21	403
50	32	50	78	24	404
50	40	50	88	27	405
50	60	70	128	40	406

21671
Short

21671
Medium length

Medium length with KKB

Taper SK	d mm	A mm	D mm	l mm	21671 ...
40	16	100	38	17	314 NEW
40	22	100	48	19	309
40	27	100	58	21	310
40	32	100	78	24	311
50	16	100	38	17	401 NEW
50	22	100	48	19	407
50	27	100	58	21	408
50	32	100	78	24	409
50	40	100	88	27	410

21671
Long

Long with KKB

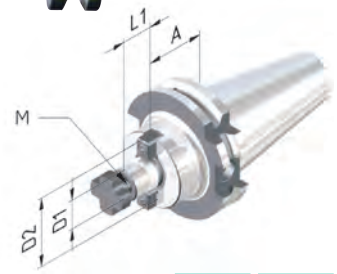
Taper SK	d mm	A mm	D mm	l mm	21671 ...
40	16	160	38	17	315 NEW
40	22	160	48	19	316 NEW
40	27	160	58	21	317 NEW
40	32	160	78	24	318 NEW
40	40	160	88	27	319 NEW
50	16	160	38	17	411 NEW
50	22	160	48	19	412 NEW
50	27	160	58	21	413 NEW
50	32	160	78	24	414 NEW
50	40	160	88	27	415 NEW

21675 Blade head supports with KKB

ISO 7388-1 | DIN 69871 | AD/AF | G 2,5 25000 1/min | ≤6µm | HPC

Design
- Ground taper shank, mounting spigot and contact surface
- Hard-turned shank
- Balluf chip bore
- With two coolant channel bores (= KKB)

Scope of delivery:
Cutter retaining screw.



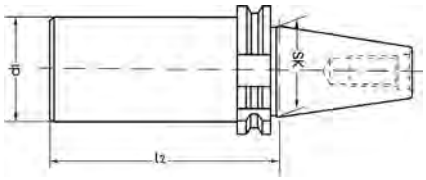
Taper SK	D1 mm	A mm	D2 mm	L1 mm	M	21675	...
40	16	35	38	17	M 8		101
40	22	35	48	19	M 10		102
40	27	35	60	21	M 12		103
40	32	50	78	24	M 16		104

21683 Boring bar blanks

ISO 7388-1 | DIN 69871

Design
- Steep taper and collar hardened and ground
- **Material: 16 MnCr5**
- Balluf chip bore

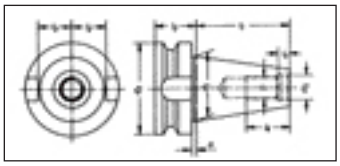
Applications
For producing special tools.



Taper SK	Boring bar Ø d_1 mm	l_2 mm	21683	...
40	63.0	250		102
50	97.0	315		201

Info Tool holders according to ISO 7388-2 (MAS-BT)

ISO 7388-2 (formerly MAS-BT) version
Alloyed case hardening steel min. tensile strength 950 N/mm² .
Taper angle tolerance more accurate than AT3.
Case-hardened 60-2 HRC.
Functional surfaces ground.

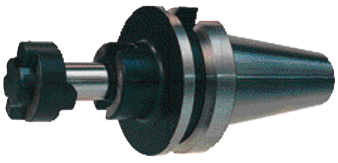


New standard
ISO 7388-2

Shape J:	without through hole
Shape JD:	with through hole for central coolant supply
Shape JD/JF:	with through hole and side coolant supply via the tool collar
Shape JF:	with side coolant supply via the tool collar

Old standard
DIN 69871 Part 1

Shape A:	without through hole
Shape AD:	with through hole for central coolant supply
Shape AD/B:	with through hole for central coolant supply and 2 holes on the tool collar for side coolant supply
Shape B:	with 2 holes on the tool collar for side coolant supply



MAS-BT	d1 mm	g	d5 H7 mm	d2 mm	a mm	l1 mm	l2 mm	l3 mm	l5 mm	l6 mm
30	31.75	M 12	12.5	46	2	48.4	22	16.3	7.0	24
40	44.45	M 16	17.0	63	2	65.4	27	22.6	8.2	32
50	69.85	M 24	25.0	100	3	101.8	38	35.3	11.0	47

21192 CNC short drill chuck

ISO 7388-2 | MAS-BT/ JIS B 6339 | J | G 6,3 12000 1/min | ≤30µm

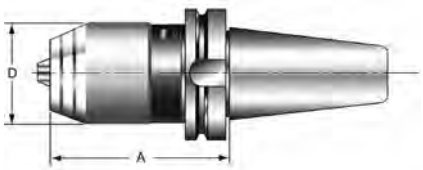
ATORN®

Design
- Short model
- Wear parts hardened and ground

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

Note:
For pull studs, see art. no. 21737–21739.



Taper MAS-BT	Clamping range mm	A mm	D mm	21192	...
40	1–16	88	50		101

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21207 Precision short drill chuck

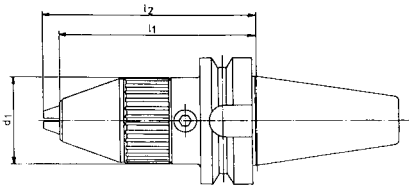
ISO 7388-2 | MAS-BT/ JIS B 6339 | J | ≤30µm

Design
- Short, robust and slim design
- Gear ratio generates high gripping forces
- High precision and concentricity

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

Note:
For pull studs, see art. no. 21737–21739.



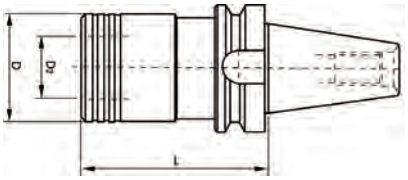
Taper MAS-BT	With drill chuck mm	l_1 mm	d_1 mm	l_2 mm	21207	...
40	1.0–13	95.5	43	103.5		101
40	2.5–16	114.5	56	119.5		102
50	1.0 - 13	106.5	43	114.5		103
50	2.5 - 16	125.5	56	130.5		104

21458 Quick-change tapping chuck

ISO 7388-2 | MAS-BT/ JIS B 6339 | J

Design
- With length compensation under compression and tension

Note:
For quick-change inserts, see art no. 21459–21460.
For pull studs, see art. no. 21737–21739.



Taper MAS-BT	For screw drill	Suitable inserts/size	Length compensation pressure/tension mm	L mm	D mm	D_2 mm	21458	...
40	M 3–M 12	1	9.0/9.0	68	38	19		101
40	M 6–M 20	2	15.0/15.0	93	55	31		102
40	M 14–M 33	3	24.0/24.0	138	79	48		103
50	M 6–M 20	2	15.0/15.0	102	55	31		105

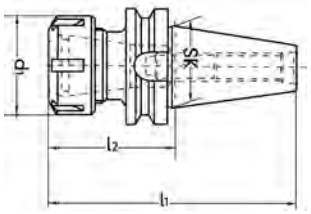
21514 ER collet chuck

ISO 7388-2 | MAS-BT/ JIS B 6339 | JD | G 2,5 25000 1/min | ≤3µm

Design
- Precision design
- High concentricity

Applications
For clamping tools with straight shanks in collet chucks in accordance with DIN 6499, shape A and B.

Note:
For collet chuck sets, see art. no. 21519.
For collet chucks, see art. no. 21520–21525 and 21534–21539.
For pull studs, see art. no. 21737–21739.



Taper MAS-BT	Clamping range mm	Size	Collet chucks type	l_2 mm	l_1 mm	d_1 mm	21514	...
40	1–16	ER 25	ER 25/430 E	60	125.4	42		101
40	2–20	ER 32	ER 32/470 E	70	135.4	50		102
40	3–26	ER 40	ER 40/472 E	80	145.4	63		103
50	2–20	ER 32	ER 32/470 E	70	171.8	50		104
50	3–26	ER 40	ER 40/472 E	80	181.8	63		105

21545 OZ collet chucks

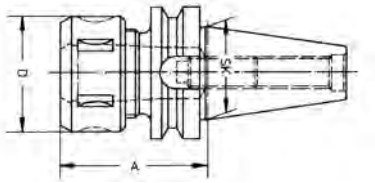
ISO 7388-2 | MAS-BT/ JIS B 6339 | JD | G 2,5 25000 1/min | ≤3µm

Design
- Precision design
- Ball-bearing union nut

Scope of delivery:
Includes clamping nut.

Applications
For clamping tools with straight shanks in collet chucks in line with DIN 6388.

Note:
For collet chucks, see art. no. 21552–21554.
For pull studs, see art. no. 21737–21739.



Taper MAS-BT	Clamping range mm	For collet chucks type	A mm	D mm	21545	...
40	2–25	462 E	70	60		101
40	4–32	467 E	90	72		102

21602 Tool chucks for drill chucks

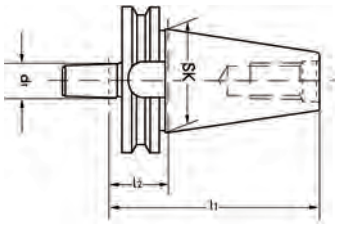
ISO 7388-2 | MAS-BT/ JIS B 6339 | J | G 2,5 25000 1/min | ≤5µm

Design
- Precision design

Applications
For mounting drill chucks on milling machines.

Note:
For pull studs, see art. no. 21737–21739.

21602



Taper MAS-BT	Mount d_1 DIN 238	l_2 mm	l_1 mm	21602	...
40	B 16	34	97.4		401

21611 Taper sleeves

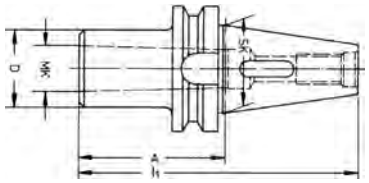
ISO 7388-2 | MAS-BT/ JIS B 6339 | JD | G 6,3 15000 1/min | ≤5µm

Design
- Precision design

Applications
For mounting tools with MK shanks and flat tangs.

Note:
For pull studs, see art. no. 21737–21739.

21611



Outer taper MAS-BT	Inner taper MK	A mm	l_1 mm	D mm	21611	...
40	1	50	115.4	25		101
40	2	50	115.4	32		102
40	3	70	135.4	40		103
40	4	95	160.4	48		104
50	2	60	161.8	32		106
50	3	65	166.8	40		107
50	4	95	196.8	48		108

21633 Milling cutter holders

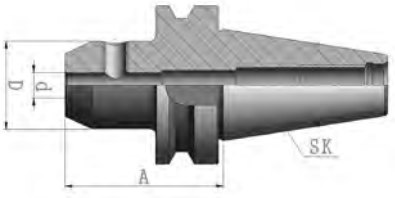
ISO 7388-2 | MAS-BT/ JIS B 6339 | JD | G 2,5 25000 1/min | ≤3µm

Design
- Precision design
- Bore tolerance < 0.004 mm

Applications
For clamping tools with side driving surfaces in accordance with DIN 1835 B and DIN 6535 HB.

Note:
For pull studs, see art. no. 21737–21739.

21633



Taper MAS-BT	For milling shank Ø d mm	A mm	D mm	21633	...
40	6	50	25		111
40	8	50	28		112
40	10	63	35		113
40	12	63	42		114
40	14	63	44		115
40	16	63	48		116
40	18	63	50		117
40	20	63	52		118
40	25	90	63		120
40	32	100	72		121

Taper MAS-BT	For milling shank Ø d mm	A mm	D mm	21633	...
50	6	63	25		211
50	8	63	28		212
50	10	63	35		213
50	12	80	42		214
50	14	80	44		215
50	16	80	48		216
50	18	80	50		217
50	20	80	52		218
50	25	100	63		220
50	32	105	72		221
50	40	110	80		222

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21651 Combination mill arbors

ISO 7388-2 | MAS-BT/ JIS B 6339 | JD | G 2,5 25000 1/min | ≤6µm

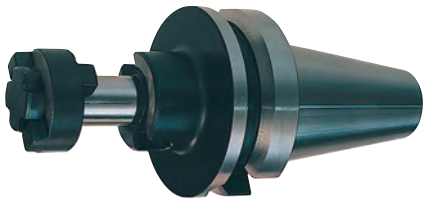
Design
- Precision design
- Face-ground contact surfaces (accuracy < 0.003 mm)

Scope of delivery:
Including key, driver ring and retaining screws.

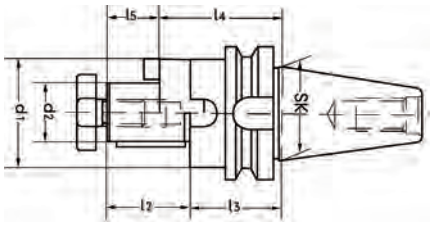
Applications
With key for cutters with longitudinal grooves such as DIN 841, and driver ring for cutters with lateral groove DIN 1880 and blade heads DIN 1830.

Note:
For pull studs, see art. no. 21737–21739. For driving rings, see art. no. 21655. For retaining screws, see art. no. 21656 and 21659.
Retaining screw no. 21657.

21651



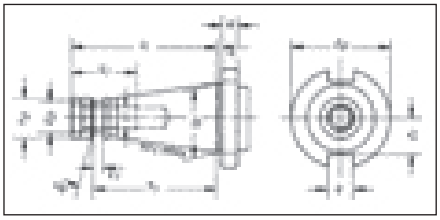
Taper MAS-BT	d_2 mm	l_4 mm	l_3 mm	d_1 mm	l_5 mm	l_2 mm	21651	...
40	16	55	45	32	17	27		**302**
40	22	55	43	40	19	31		**303**
40	27	55	43	48	21	33		**304**
40	32	60	46	58	24	38		**305**
40	40	60	46	70	27	41		**306**
50	22	70	58	40	19	31		**403**
50	27	70	58	48	21	33		**404**
50	32	70	56	58	24	38		**405**
50	40	70	56	70	27	41		**406**



Info Tool holders according to DIN 2080

Steep taper shafts SK 30 - SK 50 with female thread
Manual clamping and ring groove for automatic clamping DIN 2080.

Version
Alloyed case hardening steel min. tensile strength 950 N/mm² .
Taper angle tolerance more accurate than AT3.
Case-hardened 60-2 HRC.
Functional surfaces ground.



SK	d1 mm	a mm	b mm	k mm	g	d2 mm	d3 mm	d4 mm	l1 mm	l2 mm	l3 mm	l4 mm	l5 mm
30	31.75	1.6	16.1	8	M 12	50.0	-	17.1	68.4	16.2	-	-	24
40	44.45	1.6	16.1	10	M 16	63.0	21.1	25.0	93.4	22.5	7	82	32
50	69.85	3.2	25.7	12	M 24	97.5	32.0	39.3	126.8	35.3	13	115	47

21184 Short drill chuck AKL 1–16 mm

DIN 2080 | Vorgew. 7000 1/min | ≤30µm

ALBRECHT
Präzisions Spannfutter

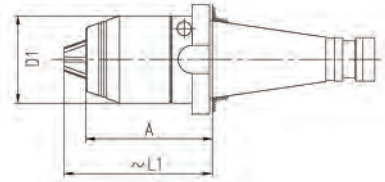
Design
- 100% concentricity checked, based on DIN ISO 10888
- Worm gear for high retention forces

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
Suitable for clockwise/anti-clockwise rotation and fast-braking spindles.

Note:
Other balancing grades available on request.

21184



Taper SK	Clamping range mm	A mm	D1 mm	L1 mm	21184	...
40	1–16	73	50	85		**301**

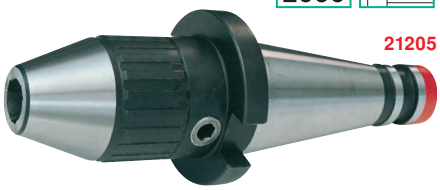
21205 Short drill chuck

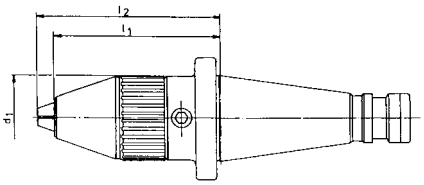
DIN 2080 | ≤30µm

Design
- Short, robust and slim design
- Gear ratio generates high gripping forces
- High precision and concentricity

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.





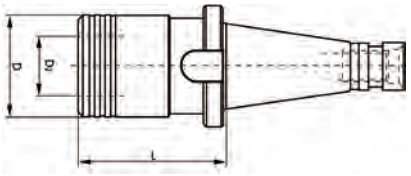
Taper SK	Clamping range mm	l_1 mm	d_1 mm	l_2 mm	21205	...
40	1.0–13	80.0	43	88.0		101
40	2.5–16	97.0	56	102.0		102

21455 Quick-change tapping chuck

DIN 2080

Design
- With length compensation under compression and tension

Note:
For quick-change inserts, see art. no. 21459–21460.
For pull studs, see art. no. 21733–21740.



Taper SK	For screw tap	Suitable inserts/size	Length compensation Pressure/tension mm	L mm	D mm	D_2 mm	21455	...
40	M 3–M 12	1	9.0/9.0	53	38	19		201
40	M 6–M 20	2	15.0/15.0	77	55	31		202
50	M 6–M 20	2	15.0/15.0	79	55	31		205

21510 ER collet chuck set

DIN 2080 | ≤3µm

21510 101

	Set contents
1	**High-performance drilling and milling chuck, type ER 40, clamping range 3–26 mm**
13	**Collet chucks, type 472 E, slotted on both sides,** Diameter 4/5/6/8/10/12/14/16/18/20/22/24/25 mm
1	**Spanner**

	Set contents	Shank	Version	21510	...
Collet chuck set	15 pieces	SK 40	In plastic case		101
Plastic box	-	-	Empty		107

21511 ER collet chuck

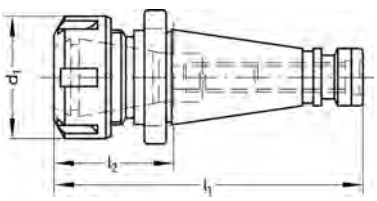
DIN 2080 | ≤3µm

Design
- Precision design
- High concentricity

Applications
For clamping tools with straight shanks in collet chucks DIN 6499 shape A and B.

Note:
For collet chuck sets, see art. no. 21519.
For collet chucks, see art. no. 21520–21525 and 21534–21539.

21511



Taper SK	Clamping range mm	Size	Collet chucks Type	l_2 mm	l_1 mm	d_1 mm	21511	...
30	2–20	ER 32	ER 32/470 E	50	118.4	50		102
40	2–20	ER 32	ER 32/470 E	50	143.4	50		107
40	4–26	ER 40	ER 40/472 E	80	173.4	63		108

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21542 OZ collet chuck

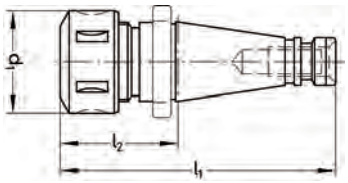
DIN 2080 ≤3µm

Design
Ball-bearing union nut

Scope of delivery:
Includes clamping nut

Applications
For clamping tools with straight shanks in collet chucks in line with DIN 6388.

Note:
For collet chucks, see art. no. 21552–21554.



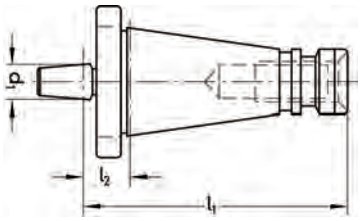
Taper SK	Clamping range mm	For collet chucks type	l_2 mm	d_1 mm	21542	...
30	2–16	415 E	50	43		101
40	2–25	462 E	66	60		103
40	4–32	467 E	95	72		104
50	2–25	462 E	71	60		105
50	4–32	467 E	73	72		106

21600 Tool chucks for drill chucks

DIN 2080 ≤5µm

Design
- Precision design

Applications
For mounting drill chucks on milling machines.



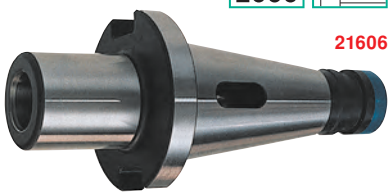
Taper SK	Mount d_1 DIN 238	l_2 mm	l_1 mm	21600	...
40	B 16	18	110.4		101
50	B 16	22	146.8		103

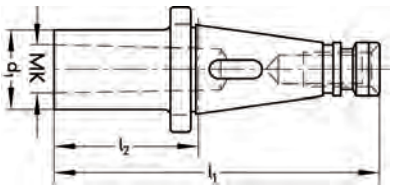
21606 Taper sleeves

DIN 2080 ≤8µm

Design
- Precision design

Applications
For mounting tools with MK shanks and flat tangs.





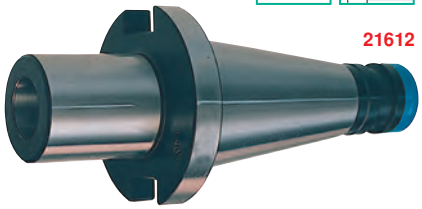
Outer taper SK	Inner taper MK	l_2 mm	l_1 mm	d_1 mm	21606	...
30	2	50	118.4	32		101
40	1	50	143.4	25		102
40	2	50	143.4	32		103
40	3	65	158.4	40		105
40	4	95	188.4	48		107
50	1	45	171.8	25		109
50	2	60	186.8	32		110
50	3	65	191.8	40		112
50	4	70	196.8	48		114
50	5	105	231.8	63		116

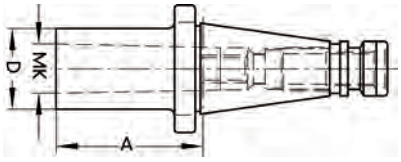
21612 Milling bit holders

DIN 2080 ≤8µm

Design
- Precision design
- Built-in retaining screw

Applications
For mounting tools with MK shanks and clamping threads.





Outer taper SK	Inner taper MK	Clamping thread Internal	A mm	D mm	21612	...
40	2	M 10	50	32		102
40	3	M 12	65	40		103
40	4	M 16	95	48		104

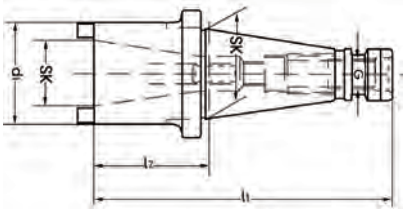
21617 Spacer sleeve

DIN 2080 | ≤8µm

Design
- Precision design
- Built-in retaining screw

Applications
For mounting and extending SK shanks.

21617



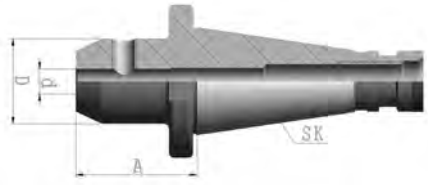
Outer taper SK	Inner taper SK	Clamping thread Outer	Clamping thread Internal	l_2 mm	l_1 mm	d_1 mm	21617	...
50	40	M 24	M 16	50	176.8	70		**203**

21630 Milling cutter holders

DIN 2080 | ≤3µm

Design
- Precision design
- Bore tolerance < 0.004 mm

Applications
For clamping tools with side driving surfaces in accordance with DIN 1835 B and DIN 6535 HB.



21630

Taper SK	For milling shank Ø d mm	A mm	D mm	21630	...
40	6	50	25		**201**
40	8	50	28		**202**
40	10	50	35		**203**
40	12	50	42		**204**
40	14	50	44		**205**
40	16	63	48		**206**
40	18	63	50		**207**
40	20	63	52		**208**
40	25	80	63		**210**
40	32	80	72		**211**

Taper SK	For milling shank Ø d mm	A mm	D mm	21630	...
50	6	63	25		**401**
50	8	63	28		**402**
50	10	63	35		**403**
50	12	63	42		**404**
50	14	63	44		**405**
50	16	63	48		**406**
50	18	63	50		**407**
50	20	63	52		**408**
50	25	80	63		**410**
50	32	80	72		**411**
50	40	90	80		**412**

21649 Combination mill arbors

DIN 2080 | ≤5µm

Design
- Precision design
- Face-ground contact surfaces (accuracy < 0.003 mm)

Scope of delivery:
Including key, driver ring and retaining screws.

Applications
With key for cutters with longitudinal grooves such as DIN 841, and driver ring for cutters with lateral groove DIN 1880 and blade heads DIN 1830.

Note:
For driving rings, see art. no. 21655.
For retaining screws, see art. no. 21656 and 21659.
Retaining screw no. 21657.

21649

Taper SK	d mm	A mm	D mm	l mm	21649	...
30	16	35	32	17		**302**
30	22	35	40	19		**303**
30	27	35	48	21		**304**
40	16	52	32	17		**307**
40	22	52	40	19		**308**
40	27	52	48	21		**309**
40	32	52	58	24		**310**

Taper SK	d mm	A mm	D mm	l mm	21649	...
40	40	52	70	27		**311**
50	16	55	32	17		**402**
50	22	55	40	19		**403**
50	27	55	48	21		**404**
50	32	55	58	24		**405**
50	40	55	70	27		**406**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21670 Blade head supports

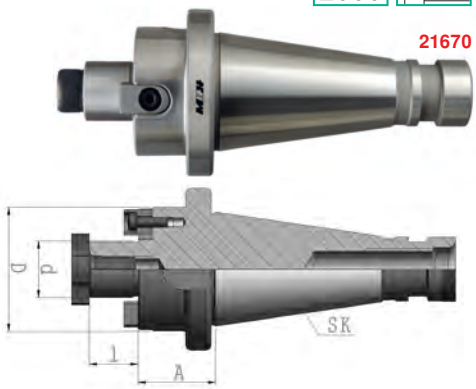
DIN 2080 | ≤5µm

Design
- Precision version with enlarged and face-ground contact surfaces
- Short overhang for greater stability

Scope of delivery:
Includes retaining screw.

Applications
For face milling cutter heads and cutters with lateral grooves.

Note:
d = 40 mm also has 4 threaded holes for direct mounting.
For retaining screws, see art. no. 21656 and 21659.
Retaining screw no. 21657.

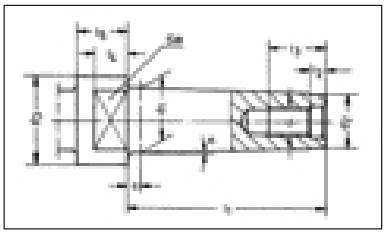


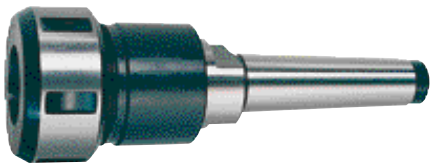
Taper SK	d mm	A mm	D mm	l mm	21670	...
40	22	30	48	19		305
40	27	30	58	21		306
40	32	30	78	24		307
40	40	30	88	27		308

Taper SK	d mm	A mm	D mm	l mm	21670	...
50	27	35	58	21		403
50	32	40	78	24		404
50	40	33	88	27		405

Info Tool holder according to DIN 228

Morse taper shanks MK 3 - MK 5 DIN 228 Part 1 Shape A with synchronisation DIN 2207.





MK	l1 mm	d1 mm	g	a mm	d2 mm	d3 mm	l2 mm	l3 mm	l4 mm	l5 mm	SW	A Degrees/Minutes/Seconds
3	86	23.825	M 12	5.0	19.0	36	5.5	24	12	18	24	1/26/16
4	109	31.267	M 16	6.5	25.0	43	8.2	32	15	23	32	1/29/15
5	136	44.399	M 20	6.5	35.7	60	10.0	40	18	28	45	1/30/26

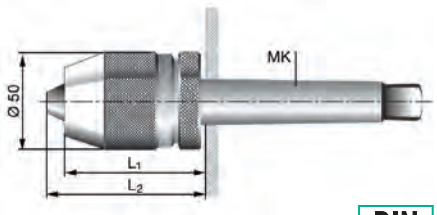
21180 High-performance three-jaw drill chuck SBF-plus

DIN 228

ALBRECHT
Präzisions Spannfutter

Design
Drill chuck with integrated MK shank. Keyless clamping, automatic reclamping, high degree of concentricity. Optimal stability thanks to compact design.

Applications
Only for clockwise rotation.



Clamping range mm	Drive arbor	D mm	L_1 mm	21180	...
1–13	MK 2	50	85.0		101
1–13	MK 3	50	85.0		102
1–13	MK 4	50	86.5		103
1–13	Diameter 16	50	79.0		104
3–16	MK 3	56	89.0		105
3–16	MK 4	56	90.0		106

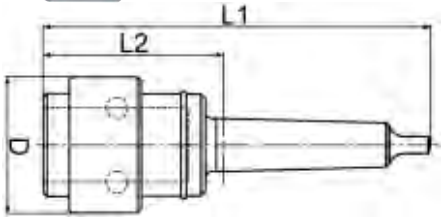
21321 Quick-change chuck

DIN 228

FAHRION® PRÄZISION

Design
Precise quick-change chuck.
Applications
For drills and drilling machines.

Note:
For quick-change inserts, see art. no. 21323 and 21325.



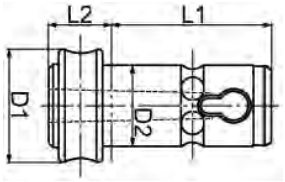
Size	Shank MK	For holes in steel Ø mm	L1 mm	L2 mm	D mm	For insert sleeve Ø mm	21321	...
2	3	32	176	82	61	34		104
3	4	50	222	104	86	46		105

21323 Morse taper insert sleeves

FAHRION® PRAZISION

Applications
For quick-change chuck no. 21321. For mounting tools with Morse taper shanks and flat tangs in accordance with DIN 228 B and clamping sleeves in accordance with DIN 6329 no. 22711 (for tools with straight shanks).

21323



For chuck size	For tools with MK	D2 sleeve Ø mm	L1 mm	L2 mm	D1 mm	21323	...
2	1	34	65	22	46		105
2	2	34	65	26	46		106
2	3	34	65	43	46		107
3	1	46	82	23	58		108
3	2	46	82	23	58		109
3	3	46	82	27	58		110
3	4	46	82	53	58		111

21406 Tapping chucks

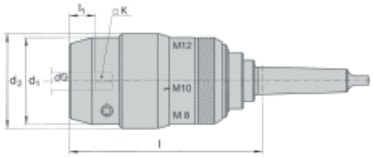
DIN 228

bilz

Design
Double chuck, clamps shank, square. Adjustable safety slip coupling prevents tool breakage. Pendulum device compensates for misalignment between the machine and the workpiece. Elastic length compensation under compression and tension.
Scope of delivery:
Includes spanner.

Applications
For cutting internal threads on reversible drills, lathes and milling machines. Can be used horizontally and vertically.

21406



Shank MK	Ø d mm	□ K mm	Metric thread	Whitworth thread	Whitworth pipe thread	Pendulum mm	Length compensation pressure/tension mm	d_1 mm	d_2 mm	l mm	l_1 mm	21406	...
2	2.5–10	0.0–8	M 3–12	1/8–1/2 inch	THD 1/8 inch	1.0	10/20	53	58	135	18–20		101
3	2.5–10	0.0–8	M 3–12	1/8–1/2 inch	THD 1/8 inch	1.0	10/20	53	58	135	18–20		102
3	6.0–16	4.7–12	M 8–20	1/4–13/16 inch	THD 1/8–1/2 inch	1.5	10/20	76	83	170	23–28		103
4	6.0–16	4.7–12	M 8–20	1/4–13/16 inch	THD 1/8–1/2 inch	1.5	10/20	76	83	171	23–28		104
4	11.0–23	0.0–18	M 14–30	9/16–1.1/8 inch	THD 1/4–7/8 inch	2.0	10/30	100	106	230	25–34		105

21408 Thread-cutting devices

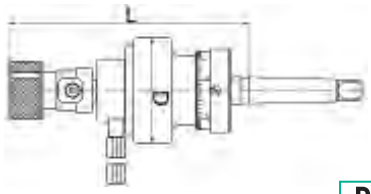
DIN 228

FAHRION® PRAZISION

Design
With infinitely adjustable clamping jaws. Integrated reverse 2:1. Adjustable safety slip coupling prevents tool breakage. Direction of rotation reverses immediately when the feed direction is changed.

Applications
For cutting female threads on table and pillar drills that rotate clockwise.

21408



Shank MK	Cutting range	Clamping range drill shank mm	Rotation speed max. rpm	D mm	L mm	21408	...
2	M 3–M 10	2.5–10.0	600	69	158		102
3	M 6–M 16	4.5–12.5	400	82	183		104
3	M 14–M 27	11.0–22.4	250	105	244		105

21410 Thread-cutting devices

DIN 228

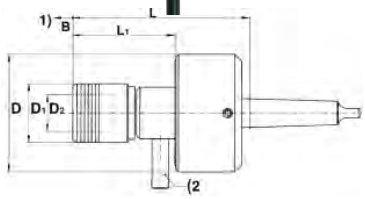
bilz

Design
With Morse taper shank in accordance with DIN 228 B with a length compensation under tension.
Applications
For machine thread cutting on drills with manual feed and with non-reversing spindles. Maintenance free and suitable for both right-hand and left-hand threads.

Note:
For quick-change inserts, see art. no. 21459–21460. Thread-cutting devices with other shafts deliverable on request.

1) Notch
2) Torque support

21410



Size	Type	For screw tap	n max. rpm	B mm	L mm	L_1 mm	D mm	D_1 mm	D_2 mm	21410	...
1	TA 12/MK 2	M 3–M 12	1200	6	140	60	80	32	19		102
1	TA 12/MK 3	M 3–M 12	1200	6	140	60	80	32	19		103
2	TA 20/MK 3	M 8–M 20	500	8	170	86	100	50	31		104

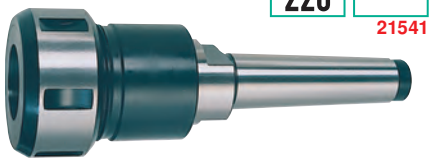
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21541 OZ collet chucks

DIN 228 A

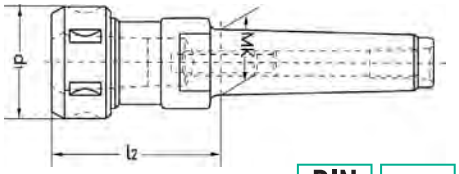
Design
Morse taper with inner clamping threads.
With clamping nut.

Note:
For collet chucks, see art. no. 21552–21554.



21541

Taper MK/ Clamping thread	Clamping range mm	For collet chuck type	l_2 mm	d_1 mm	21541	...
2/M 10	2–16	415 E	62	43		100
3/M 12	2–25	462 E	70	60		101
4/M 16	2–25	462 E	70	60		102



21648 Combination mill arbors

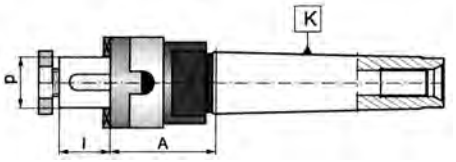
DIN 228 A

Design
Morse taper shank with inner clamping thread.

Applications
With key for cutters with longitudinal grooves such as DIN 841, and driver ring for cutters with lateral groove DIN 1880 and blade heads DIN 1830.

21648

Taper MK	d mm	A mm	l mm	21648	...
3	16	48	17		101
3	22	48	19		102
3	27	48	21		103
4	22	55	19		106
4	27	55	21		107



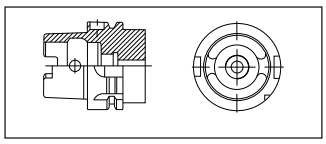
Info Tool chucks in accordance with DIN 69893

Design
Alloyed case-hardening steel, min. tensile strength of 950 N/mm². Taper tolerance lower than AT3 in accordance with DIN 7187 and DIN 2080.
The operating hardness and depth are adapted to the respective chuck.
To prevent the risk of breaking or cracking, thin-walled HSK chucks are not fully hardened.

Various shapes of hollow shank taper in line with DIN 69893:

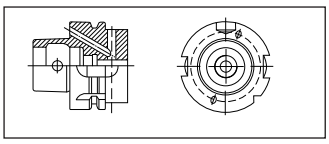
Hollow shank taper HSK for automatic tool changes with gripper groove.

Type A



- Machining centre applications with automatic tool changes.
- Central coolant supply via coolant tube.

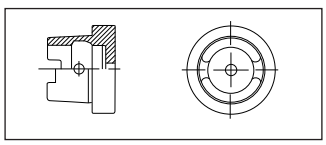
Type B



- Machining centre and lathe applications with automatic tool changes.
- Extended contact flange.
- Coolant supply via flange or central coolant tube.

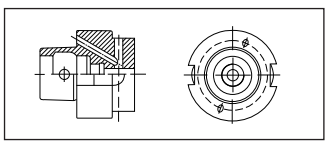
HSK hollow shank taper for manual tool changes without gripper groove.

Type C



- Primarily for applications in transfer lines and special machines with manual tool changes.
- Central coolant supply.

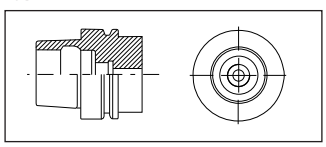
Type D



- Suitable for machining applications that require good support from a flat face.
- Manual tool change.
- Extended contact flange.
- Coolant supply via flange or central coolant tube.

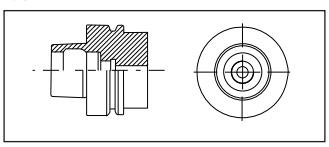
HSK hollow shank taper for high rotation speeds in high-speed cutting (HSC) with gripper groove.

Type E



- HSC machining applications.
- Symmetrical without driver slots.
- Central coolant supply possible via coolant tube.

Type F



- Extended contact flange.
- Central coolant supply possible via coolant tube.

21803 Shrink-fit chuck, 3°

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm

ATORN®

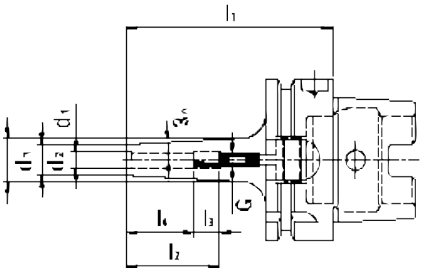
Design
- Slim design
- High transmittable torques
- High concentricity
- Balluf chip bore

Scope of delivery:
- Built-in stop screw

Applications
For shrinking HSS and cemented-carbide tools with a shaft tolerance of h6 and more precise.

Quality
Made of special high-strength heat-resistant steel.

21803



Short

Taper HSK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	21803	...
63	3	80	9	14	28	16	12	M 6		103
63	4	80	10	15	28	12	16	M 6		104
63	5	80	11	16	30	10	20	M 6		105
63	6	80	12	17	36	10	26	M 5		106
63	8	80	14	19	36	10	26	M 6		108
63	10	85	16	21	41	10	31	M 8 x 1		110
63	12	90	18	23	47	10	37	M 10 x 1		112
63	14	90	20	26	47	10	37	M 10 x 1		114
63	16	95	22	28	50	10	40	M 12 x 1		116
63	18	95	24	30	50	10	40	M 12 x 1		118
63	20	100	26	32	52	10	42	M 16 x 1		120

Medium length

Taper HSK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	21803	...
63	3	120	9	16	-	-	12	M 6		203
63	4	120	10	17	-	-	16	M 6		204
63	5	120	11	18	-	-	20	M 6		205
63	6	120	12	22	36	10	26	M 5		206
63	8	120	14	24	36	10	26	M 6		208
63	10	120	16	26	41	10	31	M 8 x 1		210
63	12	120	18	28	47	10	37	M 10 x 1		212
63	14	120	20	30	47	10	37	M 10 x 1		214
63	16	120	22	32	50	10	40	M 12 x 1		216
63	18	120	24	34	50	10	40	M 12 x 1		218
63	20	120	26	36	52	10	42	M 16 x 1		220

Long

Taper HSK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	21803	...
63	3	160	9	19	-	-	12	M 6		303
63	4	160	10	20	-	-	16	M 6		304
63	5	160	11	21	-	-	20	M 6		305
63	6	160	12	24	36	10	26	M 5		306
63	8	160	14	26	36	10	26	M 6		308
63	10	160	16	28	41	10	31	M 8 x 1		310
63	12	160	18	30	47	10	37	M 10 x 1		312
63	14	160	20	32	47	10	37	M 10 x 1		314
63	16	160	22	34	50	10	40	M 12 x 1		316
63	18	160	24	36	50	10	40	M 12 x 1		318
63	20	160	26	38	52	10	42	M 16 x 1		320

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21807 - 21808 Shrink-fit chuck, 4.5°

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm

ATORN®

Design
- Slim design
- Made of special high-strength heat-resistant steel
- Additional threads on the circumference
- For subsequent balancing
- Balluf chip bore
- Made in Germany

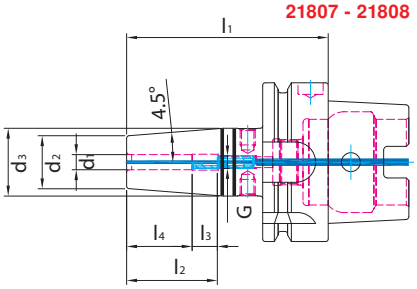
Scope of delivery:
- Built-in stop screw

Applications
For inductive shrinking of HSS and cemented-carbide tools with a shaft tolerance of h6 and more precise.

21807
- With central coolant supply

21808
- With central coolant supply and additional resealable cooling channels

21807 - 21808



21807 101-112

Short

Taper HSK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21807	...	With KKB 21808	...
63	3	80	10	15	28	16	12	M 6		101		101
63	4	80	15	22	28	12	16	M 6		102		102
63	5	80	15	22	30	10	20	M 6		103		103
63	6	80	21	27	36	10	26	M 5		104		104
63	8	80	21	27	36	10	26	M 6		105		105
63	10	85	24	32	41	10	31	M 8 x 1		106		106
63	12	90	24	32	47	10	37	M 10 x 1		107		107
63	14	90	27	34	47	10	37	M 10 x 1		108		108
63	16	90	27	34	50	10	40	M 12 x 1		109		109
63	18	95	33	42	50	10	40	M 12 x 1		110		110
63	20	100	33	42	52	10	42	M 16 x 1		111		111
63	25	115	44	53	58	10	48	M 16 x 1		112		112

21807 201-211

Medium length

Taper HSK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21807	...	With KKB 21808	...
63	3	120	10	20	-	-	12	-		201		201
63	4	120	15	22	-	-	16	-		202		202
63	5	120	15	22	-	-	20	-		203		203
63	6	120	21	27	36	10	26	M 5		204		204
63	8	120	21	27	36	10	26	M 6		205		205
63	10	120	24	32	41	10	31	M 8 x 1		206		206
63	12	120	24	32	47	10	37	M 10 x 1		207		207
63	14	120	27	34	47	10	37	M 10 x 1		208		208
63	16	120	27	34	50	10	40	M 12 x 1		209		209
63	18	120	33	42	50	10	40	M 12 x 1		210		210
63	20	120	33	42	52	10	42	M 16 x 1		211		211

21807 301-311

Long

Taper HSK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21807	...
63	3	160	10	20	-	-	12	-		301
63	4	160	15	22	-	-	16	-		302
63	5	160	15	22	-	-	20	-		303
63	6	160	21	27	36	10	26	M 5		304
63	8	160	21	27	36	10	26	M 6		305
63	10	160	24	32	41	10	31	M 8 x 1		306
63	12	160	24	32	47	10	37	M 10 x 1		307
63	14	160	27	34	47	10	37	M 10 x 1		308
63	16	160	27	34	50	10	40	M 12 x 1		309
63	18	160	33	42	50	10	40	M 12 x 1		310
63	20	160	33	42	52	10	42	M 16 x 1		311

21807 404-411

Extra long

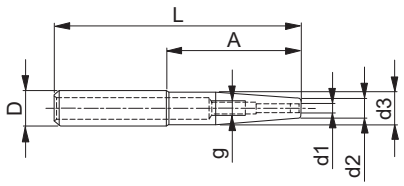
Taper HSK	d_1 mm	l_1 mm	d_2 mm	d_3 mm	l_2 mm	l_3 mm	l_4 mm	THD	Without KKB 21807	...
63	6	200	21	27	36	10	26	M 5		404
63	8	200	21	27	36	10	26	M 6		405
63	10	200	24	32	41	10	31	M 8 x 1		406
63	12	200	24	32	47	10	37	M 10 x 1		407
63	14	200	27	34	47	10	37	M 10 x 1		408
63	16	200	27	34	50	10	40	M 12 x 1		409
63	18	200	33	42	50	10	40	M 12 x 1		410
63	20	200	33	42	52	10	42	M 16 x 1		411

21598 Shrink-fit chucks extension/reduction

diebold

Applications
For extending and reducing to smaller shank diameters.

Note:
Other sizes deliverable on request.



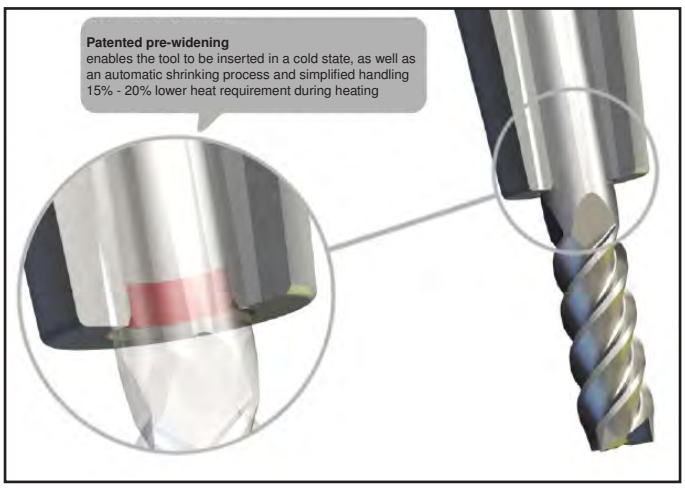
21598

D mm	d1 mm	d2 mm	d3 mm	A mm	L mm	g	21598	...
12	3	9	11.8	63	110	-		**101**
12	4	10	11.8	63	110	-		**102**
12	5	11	11.8	63	110	-		**103**
12	6	12	17	63	110	M 5		**104**
12	8	14	19	63	110	M 6		**105**
16	3	9	13	60	110	M 6		**201**
16	4	10	14	60	110	M 6		**202**
16	5	11	15	58	110	M 6		**203**
16	6	12	15.8	60	110	M 5		**204**
16	8	14	19	60	110	M 6		**205**
20	3	9	13	58	110	M 6		**301**
20	4	10	14	58	110	M 6		**302**
20	5	11	15	58	110	M 6		**303**

D mm	d1 mm	d2 mm	d3 mm	A mm	L mm	g	21598	...
20	6	12	16	58	110	M 5		**304**
20	8	14	19	58	110	M 6		**305**
20	10	16	19.8	58	110	M 8 x 1		**306**
20	12	18	19.8	58	110	M 10 x 1		**307**
16	3	9	16	150	200	-		**405**
16	4	10	16	150	200	-		**406**
16	5	11	16	150	200	-		**407**
16	6	12	16	150	200	M 5		**408**
20	6	12	20	198	250	M 5		**501**
20	8	14	20	198	250	M 6		**502**
20	10	16	20	198	250	M 8 x 1		**503**
25	12	18	25	193	250	M 10 x 1		**601**
25	16	22	25	193	250	M 12 x 1		**602**

Intelligent shrink technology thanks to patented pre-widening (shrink-fit chucks art.-no. 21597 and 21599)

• Striking **• Simple** **• Extremely effective**



The patented pre-widening is used for automatic pre-centring of the tool and means more precision during the shrinking process without annoying tilting during the joining process. The shrinking process can take place automatically and without any assistance.

diebold

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

DIN 69893 | A | G 2,5 24000 1/min | ≤3µm | HSC | HPC

diebold

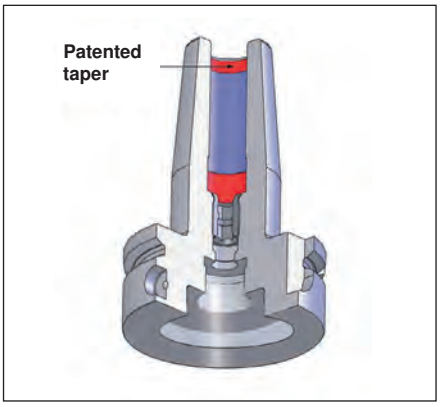
Design
- **Highest level of concentricity** and taper tolerance
- Made in air-conditioned production

Advantages:
- High retention forces and long service life thanks to the use of **high-quality heat-resistant steels** and special heat treatment processes
- **Patented taper** allows automatic shrink processes and simplified handling

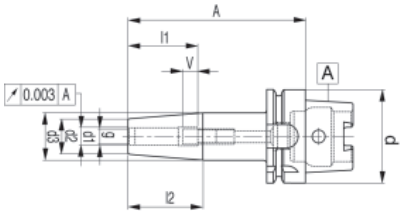
Use
For clamping of cemented carbide, HSS and steel shafts with a tolerance of h6.

Note:
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.
For shrinking equipment, see art. no. 21588–21595.

21597 501-525
- Slim, **stainless coated**

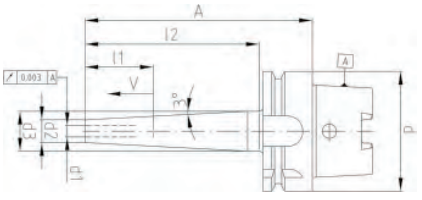


21597 101-310



HSK	d1 mm	d2 mm	d3 mm	l1 mm	l2 mm	A mm	V mm	g	21597	...
63	3	15	20	20	30	90	5	M 6		**101**
63	4	15	20	20	30	90	5	M 6		**102**
63	5	15	20	25	30	90	5	M 6		**103**
63	6	21	27	36	45	80	10	M 5		**104**
63	8	21	27	36	45	80	10	M 6		**105**
63	10	24	32	42	50	90	10	M 8 x 1		**106**
63	12	24	32	47	50	90	10	M 10 x 1		**107**
63	14	27	34	47	50	90	10	M 10 x 1		**108**
63	16	27	34	50	50	95	10	M 12 x 1		**109**
63	18	33	42	50	57	95	10	M 12 x 1		**110**
63	20	33	42	52	57	100	10	M 16 x 1		**111**
63	25	44	53	58	57	115	10	M 16 x 1		**112**
63	32	44	53	62	57	120	10	M 16 x 1		**113**
63 L	6	21	27	36	45	**120**	10	M 5		**201**
63 L	8	21	27	36	45	**120**	10	M 6		**202**
63 L	10	24	32	42	50	**120**	10	M 8 x 1		**203**
63 L	12	24	32	47	50	**120**	10	M 10 x 1		**204**
63 L	14	27	34	47	50	**120**	10	M 10 x 1		**205**
63 L	16	27	34	50	50	**120**	10	M 12 x 1		**206**
63 L	18	33	42	50	57	**120**	10	M 12 x 1		**207**
63 L	20	33	42	52	57	**120**	10	M 16 x 1		**208**
63 XL	6	21	32	36	45	**160**	10	M 5		**301**
63 XL	8	21	32	36	45	**160**	10	M 6		**302**
63 XL	10	24	34	42	50	**160**	10	M 8 x 1		**303**
63 XL	12	24	34	47	50	**160**	10	M 10 x 1		**304**
63 XL	14	27	42	47	50	**160**	10	M 10 x 1		**305**
63 XL	16	27	42	50	50	**160**	10	M 12 x 1		**306**
63 XL	18	33	51	50	57	**160**	10	M 12 x 1		**307**
63 XL	20	33	51	52	57	**160**	10	M 16 x 1		**308**
63 XL	25	44	53	58	57	**160**	10	M 16 x 1		**309**
63 XL	32	44	53	62	57	**160**	10	M 16 x 1		**310**

21597 501-525



HSK	d1 mm	d2 mm	d3 mm	l1 mm	l2 mm	A mm	V mm	g	slim 21597	...
63	3	9	13	20	40	70	5	M 6		**501**
63	4	10	14	20	40	70	5	M 6		**502**
63	6	12	18	36	60	90	5	M 5		**503**
63	8	14	20	36	60	90	5	M 6		**504**
63	10	16	22	42	60	90	5	M 8 x 1		**505**
63	12	18	24	47	60	90	5	M 10 x 1		**506**
63	16	22	28	50	60	90	5	M 12 x 1		**507**
63 L	3	9	16	20	70	**100**	5	m 6		**510**
63 L	4	10	17	20	70	**100**	5	M 6		**511**
63 L	6	12	21	36	90	**120**	5	M 5		**512**
63 L	8	14	23	36	90	**120**	5	M 6		**513**
63 L	10	16	25	42	90	**120**	5	M 8 x 1		**514**
63 L	12	18	27	47	90	**120**	5	M 10 x 1		**515**
63 L	16	22	31	50	90	**120**	5	M 12 x 1		**516**
63 XL	3	9	19	20	100	**130**	5	m 6		**519**
63 XL	4	10	20	20	100	**130**	5	M 6		**520**
63 XL	6	12	24	36	120	**150**	5	M 5		**521**
63 XL	8	14	26	36	120	**150**	5	M 6		**522**
63 XL	10	16	28	42	120	**150**	5	M 8 x 1		**523**
63 XL	12	18	30	47	120	**150**	5	M 10 x 1		**524**
63 XL	16	22	34	50	120	**150**	5	M 12 x 1		**525**

21599 Shrink-fit chucks

DIN 69893 | E | G 2,5 42000 1/min | ≤3µm | HSC | HPC

diebold

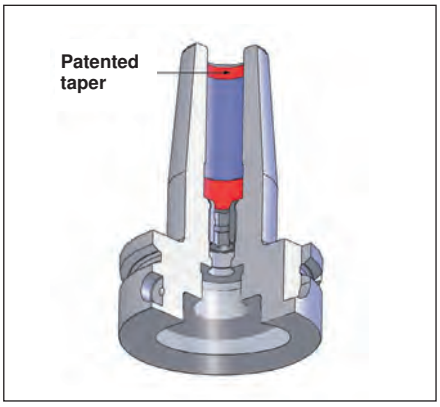
Design
- **Highest level of concentricity** and taper tolerance
- Made in air-conditioned production

Advantages:
- High retention forces and long service life thanks to the use of **high-quality heat-resistant steels** and special heat treatment processes
- **Patented taper** allows automatic shrink processes and simplified handling

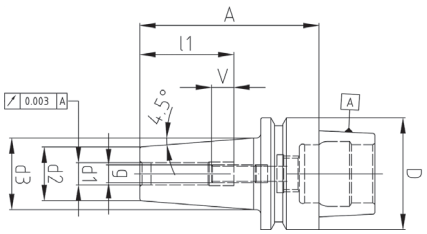
Applications
For clamping of cemented carbide, HSS and steel shafts with a tolerance of h6.

Note:
For shrinking equipment, see art. no. 21588 to 21595.

21599 201-223
Design
- Slim, **stainless coated**

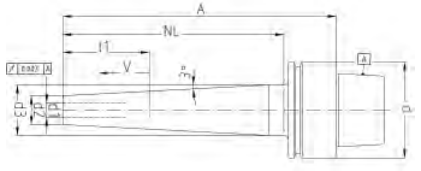


21599 101-128



HSK	d1 mm	d2 mm	d3 mm	l1 mm	A mm	V mm	g	21599 ...
40	3	15	20	20	60	5	M 6	**101**
40	4	15	20	20	60	5	M 6	**102**
40	5	15	20	25	60	5	M 6	**103**
40	6	21	27	36	65	-	-	**104**
40	8	21	27	36	65	-	-	**105**
40	10	24	30	42	65	-	-	**106**
40	12	24	30	47	65	-	-	**107**
40	14	27	34	47	65	-	-	**108**
40	16	27	34	50	65	-	-	**109**
40 L	3	15	20	20	**80**	5	m 6	**110**
40 L	4	15	20	20	**80**	5	m 6	**111**
40 L	5	15	20	25	**80**	5	M 6	**112**
40 L	6	21	27	36	**80**	10	M 5	**113**
40 L	8	21	27	36	**80**	10	M 6	**114**
40 L	10	24	32	42	**80**	10	M 8 x 1	**115**
40 L	12	24	32	47	**90**	10	M 10 x 1	**116**
40 L	14	27	34	47	**90**	10	M 10 x 1	**118**
40 L	16	27	34	50	**90**	10	M 12 x 1	**119**
40 XL	3	15	20	20	**120**	5	M 6	**120**
40 XL	4	15	20	20	**120**	5	M 6	**121**
40 XL	5	15	20	25	**120**	5	M 6	**122**
40 XL	6	21	27	36	**120**	10	M 5	**123**
40 XL	8	21	27	36	**120**	10	M 6	**124**
40 XL	10	24	32	42	**120**	10	M 8 x 1	**125**
40 XL	12	24	32	47	**120**	10	M 10 x 1	**126**
40 XL	14	27	34	47	**120**	10	M 10 x 1	**127**
40 XL	16	27	34	44	**120**	10	M 12 x 1	**128**

21599 201-223



HSK	d1 mm	d2 mm	d3 mm	l1 mm	NL mm	A mm	V mm	g	slim 21599 ...
40	3	9	12	20	24	50	5	M 6	**201**
40	4	10	13	20	24	50	5	M 6	**202**
40	6	12	15	34	24	50	-	-	**203**
40	6	12	16	36	38	60	-	-	**204**
40	8	14	18	36	38	60	-	-	**205**
40	10	16	20	42	38	60	-	-	**206**
40	12	18	22	42	38	60	-	-	**207**
40 L	3	9	13	20	40	**64**	5	M 6	**208**
40 L	4	10	14	20	40	**64**	5	M 6	**209**
40 L	6	12	18	36	60	**84**	5	M 5	**210**
40 L	8	14	20	36	60	**84**	5	M 6	**211**
40 L	10	16	22	42	60	**84**	5	M 8 x 1	**212**
40 L	12	18	24	47	60	**84**	5	M 10 x 1	**213**
40 XL	3	9	16	20	70	**94**	5	M 6	**214**
40 XL	4	10	17	20	70	**94**	5	M 6	**215**
40 XL	6	12	21	36	90	**114**	5	M 5	**216**
40 XL	8	14	23	36	90	**114**	5	M 6	**217**
40 XL	10	16	25	42	90	**114**	5	M 8 x 1	**218**
40 XL	12	18	27	47	90	**114**	5	M 10 x 1	**219**
40 XXL	6	12	24	36	120	**144**	5	M 5	**220**
40 XXL	8	14	26	36	120	**144**	5	M 6	**221**
40 XXL	10	16	28	42	120	**144**	5	M 8 x 1	**222**
40 XXL	12	18	30	47	120	**144**	5	M 10 x 1	**223**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21829 Short drill chuck

DIN 69893 | A | G 6,3 12000 1/min | ≤30µm

ATORN®

Design
- Short model
- Wear parts hardened and ground
- Clamped via worm gear

Scope of delivery:
Includes spanner with T-handle for high traction.

Applications
For clockwise/anti-clockwise rotation.

21829

HSK	Clamping range mm	A mm	D mm	21829	...
63	1–16	100	50		201

21830 CNC precision drill chuck

DIN 69893 | G 6,3 25000 1/min | ≤20µm

HW

Design
- Concentricity less than or equal to 20 µm
- High clamping force
- Very short design
- Max. rotation speed finely balanced 35,000 rpm
- Balluf chip bore

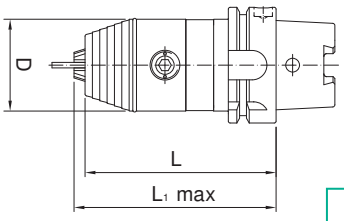
Scope of delivery:
- Delivered with hexagon key with T-handle SW 6 mm

Applications
Suitable for clockwise/anti-clockwise rotation.

21830 201-202
Design
- **Incl. sealing washers** for the entire clamping range (1x installed, 1x in scope of delivery)

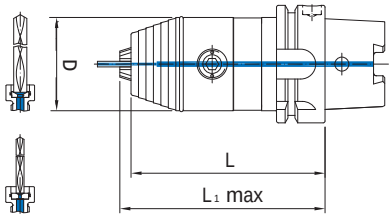
A

21830 101-102



AD

21830 201-202



Taper HSK	Clamping range mm	D mm	L mm	L_1 Max. mm	Torque Nm	Retention force N	Weight kg	HSK-A 63 21830	...	HSK-A 63 with ICS 21830	...
63	0.5–13	50	104	110	20	80	1.7		101		
63	2.5–16	57	109	115	20	90	1.9		102		
63	0.5–13	50	104	110	20	80	1.7				201
63	2.5–16	57	109	115	20	90	1.9				202

21838 Quick-change tapping chuck

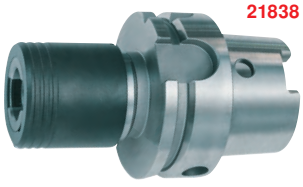
DIN 69893 | A

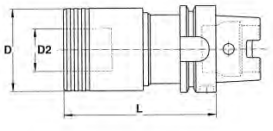
HW

Design
- Precision version with length compensation under compression and tension

Note:
For quick-change inserts, see art. no. 21459–21460.

21838





HSK	For screw tap	Suitable inserts/size	Length compensation pressure/tension mm	L mm	D Ø mm	D_2diameter mm	21838	...
63	M 3–M 12	1	7.5/7.5	72	41	19		101
63	M 6–M 20	2	10/10	110	60	31		102

21837 Quick-change tapping chuck for synchronous spindles

DIN 69893 | A

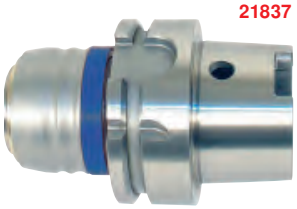
ATORN®

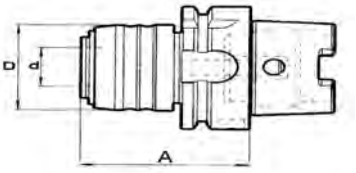
Design
- Minimum length compensation applied by damping element
- Secure clamping in quick-change inserts for ER collets
- Clamping screws to prevent rotation of the clamped screw tap

Applications
For use on drilling and machining centres with synchronous spindles.

Note:
For quick-change inserts, see art. no. 21465.

21837





HSK-A	d mm	D mm	A mm	Length compensation Pressure/tension mm	For screw tap	21837	...
63	20	43	64	0.2/1.0	M 3–M 12		101
63	32	60	97	0.2/1.0	M 6–M 20		102

21840 Hydraulic expansion chuck, short, heavy-duty design

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm

ATORN®

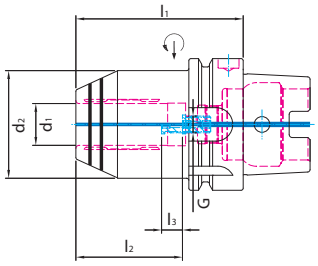
Design
- High degree of concentricity and maximum torque transmission
- Vibration-damping tool clamping
- Easy to use
- High positioning accuracy and repetition accuracy
- Made in Germany

Applications
For finish, drilling and reaming.
Can clamp all common shanks.

Note:
For reducing sleeves, see art. no. 21581.
For pull studs, see art. no. 21733–21740.
Key for coolant tube, see art. no. 21865.

Scope of delivery:
- Incl. hexagonal T-handle key

21840



HSK	d_1 mm	d_2 mm	l_1 mm	l_2 mm	l_3 mm	THD	SW mm	21840	...
63	20	52	80	51	10	M 8 x 1	3		050

21866 Ultra-slim hydraulic expansion chuck 3°

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm | HSC

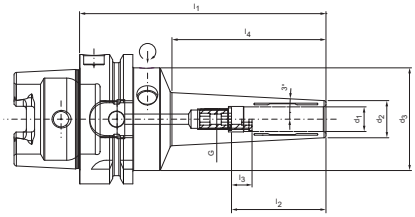
ATORN®

Design
- Newly developed, **ultra-slim** hydraulic expansion chuck with 3° incline
- Increased clamping force
- For tight interference contours
- Very high temperature resistance up to 180 °C

Advantages:
- Near-contour machining
- Expensive shrink-fit device no longer required

Applications
For drilling, reaming and milling.

21866



Taper HSK	d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	THD	SW mm	21866	...
63	3	9	50	120	28	16	73	M 3	1.5		098
63	4	10	50	120	28	12	73	M 3	1.5		099
63	5	11	50	120	28	8	73	M 3	1.5		100
63	6	12	50	120	37	10	73	M 5	2.5		101
63	8	14	50	120	37	10	74	M 6	3.0		102
63	10	16	50	120	41	10	74	M 8 x 1	3.0		103
63	12	18	50	120	46	10	75	M 10 x 1	5.0		104

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21847 HHD hydraulic expansion roughing chuck

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm

ATORN®

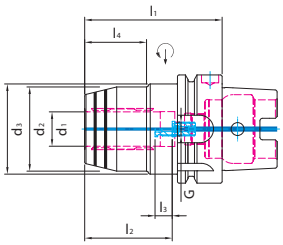
Design
- Further development of the standard expansion chuck
- Best torque transmission
- High damping properties
- High temperature resistance

Advantage:
- Can clamp all common shanks

Applications
For heavy-duty machining in HSC, HPC and TF milling applications.

Note:
For reducing sleeves, see art. no. 21581.

21847



HSK	d_1 mm	d_2 mm	d_3 mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	THD mm	SW mm	21847	...
63	12	42	52.5	80	46	10	34	M 8 x 1	3		101
63	20	49	52.5	80	51	10	36	M 8 x 1	3		102

21841 Mill arbors for screw-on mill cutters

DIN 69893 | A | G 2,5 25000 1/min | ≤8µm | HSC

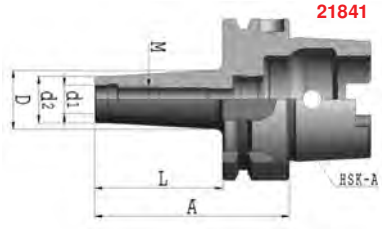
HHW

Design
- Precision design
- Ground outer taper and fitting surface
- Balluf chip bore

Applications
For mounting threaded screw-in mill cutters.

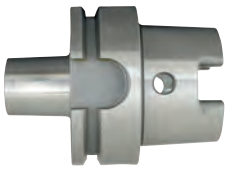
Note:
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

21841



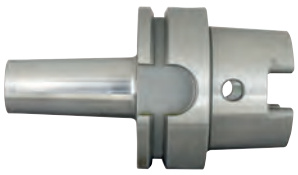
Extra short

HSK	d_1 mm	d_2 mm	D mm	A mm	L mm	M	21841	...
63	6.5	10	13	51	25	6		101
63	8.5	13	15	51	25	8		102
63	10.5	18	20	51	25	10		105
63	12.5	21	24	51	25	12		109
63	17.0	29	29	51	25	16		114



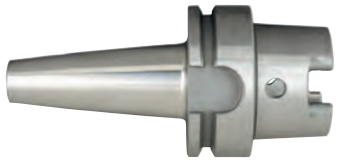
Short

HSK	d_1 mm	d_2 mm	D mm	A mm	L mm	M	21841	...
63	8.5	13	23	76	50	8		103
63	10.5	18	23	76	50	10		106
63	12.5	21	24	76	50	12		110
63	17.0	29	34	76	50	16		115



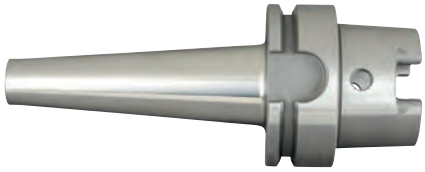
Medium length

HSK	d_1 mm	d_2 mm	D mm	A mm	L mm	M	21841	...
63	8.5	13	23	101	75	8		104
63	12.5	21	31	101	75	12		111
63	17.0	29	34	101	75	16		116



Long

HSK	d_1 mm	d_2 mm	D mm	A mm	L mm	M	21841	...
63	10.5	18	32	126	100	10		107
63	12.5	21	33	126	100	12		112
63	17.0	29	36	126	100	16		117



Extra long

HSK	d_1 mm	d_2 mm	D mm	A mm	L mm	M	21841	...
63	10.5	18	36.5	176	150	10		108
63	12.5	21	40.0	176	150	12		113
63	17.0	29	42.5	176	150	16		118

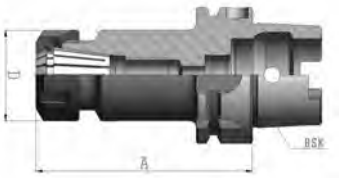
21843 ER collet chuck

DIN 69893 | A | G 2,5 25000 1/min | ≤5µm

Design
- Precision design
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Size ER 16 with hexagonal nut
- Balluf chip bore
- Max. concentricity < 0.005 mm

Note:
For collet chuck sets, see art. no. 21519.
For collet chucks, see art. no. 21520–21525 and 21534–21539.
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

21843



Applications
For clamping tools with straight shanks in collet chucks in accordance with DIN 6499, shape A and B.

NEW

Medium length

HSK - ER	Clamping range mm	Collet chucks type	A mm	D Ø mm	21843	...
63 - 16	1–10	ER 16	100	32		101
63 - 25	2–16	ER 25	100	42		103
63 - 32	2–20	ER 32	100	50		105
63 - 40	3–26	ER 40	120	63		107

Long

HSK - ER	Clamping range mm	Collet chucks type	A mm	D Ø mm	21843	...
63 - 16	1–10	ER 16	160	32		102
63 - 25	2–16	ER 25	160	42		104
63 - 32	2–20	ER 32	160	50		106
63 - 40	3–26	ER 40	160	63		108

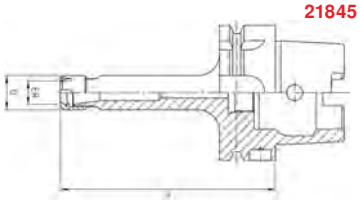
21845 ER collet chuck, slim

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm | HSC

Design
- Finely balanced clamping nut for HSC
- Drilled ER11 through hole
- Hard-turned shank
- Balluf chip bore

Note:
For collet chuck sets, see art. no. 21519.
For collet chucks, see art. no. 21520–21525 and 21534–21539.
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

21845



Applications
For clamping tools with straight shanks in collet chucks in accordance with DIN 6499, shape A and B.

Medium length

HSK - ER	Clamping range mm	Collet chucks type	A mm	D Ø mm	21845	...
63 - 11	1–7	ER 11	100	16		101
63 - 16	1–10	ER 16	100	22		103
63 - 25	1–16	ER 25	100	35		105

Long

HSK - ER	Clamping range mm	Collet chucks type	A mm	D Ø mm	21845	...
63 - 11	1–7	ER 11	160	16		102
63 - 16	1–10	ER 16	160	22		104
63 - 25	1–16	ER 25	160	35		106

21842 Precision collet chuck

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm

ATORN®

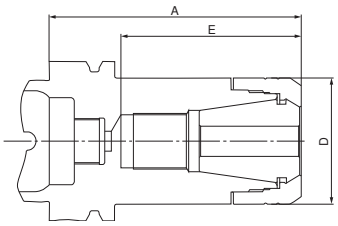
Design
- Highly accurate, **patented** precision chuck with the highest concentricity and repeatability
- High retention forces
- High rigidity
- Extremely robust
- Large tool aperture

Scope of delivery:
Incl. clamping nut.

Applications
For high-precision clamping during roughing and finishing, drilling, reaming, countersinking, thread cutting etc.

Caution:
Also suitable for HPC/HSC milling up to approx. 200 °C.

Note:
For spanner, see art. no. 21509.
For GERC-HP collet chucks, see art. no. 21546–21551.
For GERC-B collet chucks, see art. no. 21534–21539.
For replacement clamping nuts, see art. no. 21518.



21842

Short

Taper HSK	Clamping range mm	Collect chucks type	Dimension D mm	Dimension A mm	Max. insertion depth E without stop mm	Suitable clamping nut	Tightening torque of clamping nut Nm	21842	...
63	1–10	GERC 16	30	55	32	AER 16	55		**101**
63	2–20	GERC 32	50	70	46	AER 32	140		**109**

Medium length

Taper HSK	Clamping range mm	Collect chucks type	Dimension D mm	Dimension A mm	Max. insertion depth E without stop mm	Suitable clamping nut	Tightening torque of clamping nut Nm	21842	...
63	1–10	GERC 16	30	100	71	AER 16	55		**102**
63	1–16	GERC 25	40	100	70	AER 25	85		**106**
63	2–20	GERC 32	50	100	71	AER 32	140		**110**

Long

Taper HSK	Clamping range mm	Collect chucks type	Dimension D mm	Dimension A mm	Max. insertion depth E without stop mm	Suitable clamping nut	Tightening torque of clamping nut Nm	21842	...
63	1–10	GERC 16	30	160	106	AER 16	55		**103**
63	1–16	GERC 25	40	160	128	AER 25	85		**107**
63	2–20	GERC 32	50	160	129	AER 32	140		**111**

21844 Precision collet chuck CENTRO|P mini and tapered

FAHRION® PRAZISION

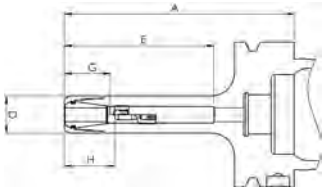
Design
- Ground inner and outer taper
- Concentricity and repeatability 0.003 mm (with GERC-HP collet chucks)
- **Supplied without clamping nut**

Applications
For precision clamping of tools with straight shanks without any loss of concentricity or gripping force up to a shaft tolerance of h10.

Note:
Collet chucks with square drives for screw taps cannot be used.
For clamping nuts and spanners, see art. no. 21509.
GERC-HP/HPD collet chucks, see art. no. 21546 to 21566.
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm | HSC | HPC

21844 101-102
Design
Extremely slim design.

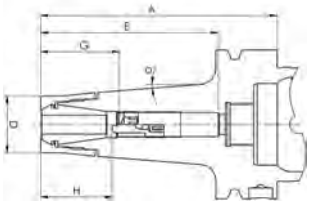


21844 101-102

slim

HSK	Clamping range mm	Size	Collet chucks type	Dim. D mm	Dim. A mm	Insertion depth E mm	21844	...
63	1–7	CP 11 M	GERC 11/4008 E	16	100	78		101
63	1–7	CP 11 M	GERC 11/4008 E	16	160	138		102

21844 201-202
Design
Tapered design.



21844 201-202

conical

HSK	Clamping range mm	Size	Collet chucks type	Dim. D mm	Dim. A mm	Insertion depth E mm	21844	...
63	1–10	CPC16	GERC 16/426 E	24	100	75		201
63	1–10	CPC16	GERC 16/426 E	24	160	105		202

21862 CENTRO|P precision collet chuck

FAHRION® PRAZISION

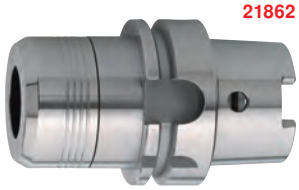
Design
- Ground inner and outer taper
- Concentricity and repeatability 0.003 mm (with GERC-HP collet chucks)
- **Supplied without clamping nut**

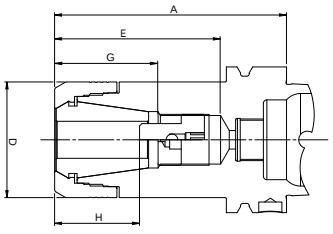
Applications
For precision clamping of tools with straight shanks without any loss of concentricity or gripping force up to a shaft tolerance of h10.

Note:
Collet chucks with square drives for screw taps cannot be used.
For clamping nuts and spanners, see art. no. 21509.
For sealing washers, see art. no. 21513 (only available online).
GERC-HP/HPD/HPDD collet chucks, see art. no. 21546 to 21569.
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm | HSC | HPC

21862





HSK	Clamping range mm	Size	Collet chucks type	Dim. D mm	Dim. A mm	Insertion depth E mm	21862	...
63	1–10	CP 16	GERC 16/426 E	30	100	71		101
63	1–10	CP 16	GERC 16/426 E	30	160	106		102
63	2–16	CP 25	GERC 25/430 E	40	100	70		104
63	2–16	CP 25	GERC 25/430 E	40	160	128		105
63	2–20	CP 32	GERC 32/470 E	50	70	46		107
63	2–20	CP 32	GERC 32/470 E	50	100	71		108
63	2–20	CP 32	GERC 32/470 E	50	160	129		109

21846 Taper sleeves

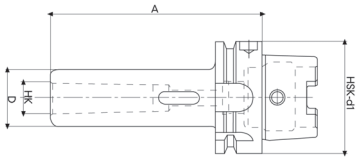
DIN 69893 | A | G 2,5 25000 1/min | ≤8µm

Design
- Precision design
- Balluf chip bore

Applications
For mounting tools with MK shanks and flat tangs.

Note:
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

21846



Taper HSK	MK	A mm	D Ø mm	21846	...
63	1	100	25		101
63	2	120	32		102
63	3	140	40		103
63	4	160	48		104

21848 HG collet chucks

DIN 69893 | A | G 6,3 15000 1/min | ≤3µm | HSC

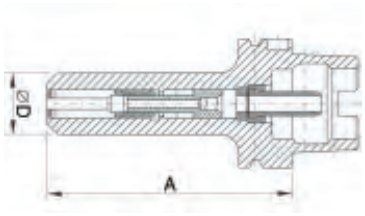
Haimer
Design
- Highly accurate and precise chuck
- Stable tension
- High concentricity

Scope of delivery:
Including retaining screw and extractor hook.

Applications
Ideal for high-speed machining. For clamping tools with straight shanks.

Note:
For HG collets, see art. no. 21627.
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

21848



Taper HSK	Size	A mm	Ø D mm	For clamping Ø mm	21848	...
63	1	120	30	2/3/4/5/6/8		201
63	2	120	35	10/12/14		202
63	3	120	48	16/18/20		203

21849 Milling cutter holders

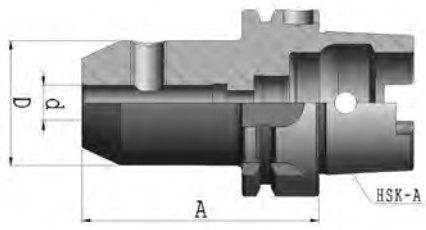
DIN 69893 | A | G 2,5 25000 1/min | ≤5µm

Design
- Inner cooling, AD version
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Balluf chip bore
- Max. concentricity < 0.005 mm

Applications
For clamping tools with side driving surfaces in accordance with DIN 1835 B and DIN 6535 HB.

Note:
Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.
For spare screws, see art. no. 21635.

21849



Short

Taper HSK	d mm	D mm	A mm	21849	...
63	6	25	65		401
63	8	28	65		404
63	10	35	65		407
63	12	42	80		410
63	14	44	80		413
63	16	48	80		416
63	18	50	80		419
63	20	52	80		422
63	25	63	110		425
63	32	72	110		427
63	40	80	125		429

Medium length

Taper HSK	d mm	D mm	A mm	21849	...
63	6	25	100		402
63	8	28	100		405
63	10	35	100		408
63	12	42	100		411 NEW

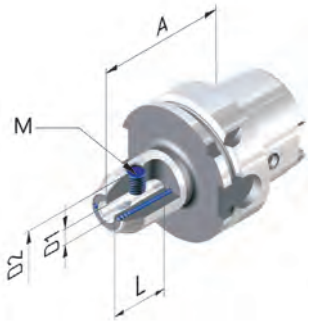
Long

Taper HSK	d mm	D mm	A mm	21849	...
63	6	25	160		403
63	8	28	160		406
63	10	35	160		409
63	12	42	160		412
63	14	44	160		415
63	16	48	160		418
63	18	50	160		421
63	20	52	160		424

21851 Milling cutter holders with KKB

DIN 69893 | A | G 2,5 25000 1/min | ≤3µm | HSC | HPC

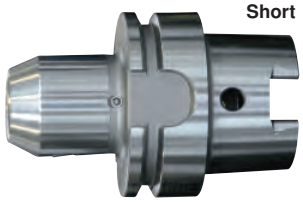
Design
- Hard-turned shank
- Balluf chip bore
- With two coolant channel bores (= KKB)
- With clamping screw and bolts to close the KKB if necessary



Short

Taper HSK	D1 mm	A mm	D2 mm	L mm	M	21851 ...
63	6	65	25	35	M 6	101
63	8	65	28	35	M 8	102
63	10	65	35	41	M 10	103
63	12	80	42	48	M 12	104
63	14	80	42	48	M 12	105
63	16	80	48	51	M 14	106
63	18	80	48	51	M 14	108
63	20	80	52	53	M 16	109
63	25	110	65	60	M 18 x 2	110
63	32	110	72	64	M 20 x 2	111

21851 Short



Long

Taper HSK	D1 mm	A mm	D2 mm	L mm	M	21851 ...
63	6	120	25	35	M 6	201
63	8	120	28	35	M 8	202
63	10	120	35	41	M 10	203
63	12	120	42	48	M 12	204
63	14	120	42	48	M 12	205
63	16	120	48	51	M 14	206
63	18	120	48	51	M 14	207
63	20	120	52	53	M 16	208

21851 Long

21855 Combination mill arbors

DIN 69893 | A | G 2,5 25000 1/min | ≤5µm

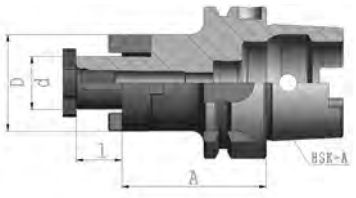
Design
- Precision design
- Face-ground contact surface (< 0.003 mm)
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Balluf chip bore

Scope of delivery:
Including key, driver ring and retaining screws.

Applications
With key for cutters with longitudinal grooves such as DIN 841, and driver ring for cutters with lateral groove DIN 1880 and blade heads DIN 1830.

Note:
For driving rings, see art. no. 21655.
For retaining screws, see art. no. 21656 and 21659.
Retaining screw no. 21657. Coolant tube, see art. no. 21864.
Key for coolant tube, see art. no. 21865.

21855



Short

Taper HSK	d mm	D mm	A mm	l mm	21855 ...
63	16	32	60	17	401
63	22	40	60	19	403
63	27	48	60	21	405
63	32	58	60	24	407
63	40	70	70	27	409

Medium length

Taper HSK	d mm	D mm	A mm	l mm	21855 ...
63	16	32	100	17	402
63	22	40	100	19	404
63	27	48	100	21	406
63	32	58	100	24	408
63	40	70	100	27	410

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21858 Blade head supports

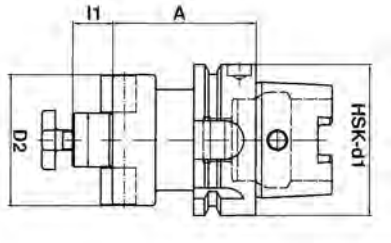
DIN 69893 | A | G 2,5 25000 1/min | ≤6µm

Design
- Precision version with enlarged and face-ground contact surfaces
- Short overhang for greater stability
- **Precision-balanced, grade 2.5 at 25,000 rpm**
- Balluf chip bore
- With KKB/coolant channel bore

Scope of delivery:
Includes retaining screw.

Applications
For face milling cutter heads and cutters with lateral grooves.

Note:
d = 40 and 60 mm also have 4 threaded holes for direct mounting.
For retaining screws, see art. no. 21656 and 21659. Retaining screw no. 21657. Coolant tube, see art. no. 21864. Key for coolant tube, see art. no. 21865.



Short with KKB

Taper HSK	D1 mm	A mm	D2 mm	l1 mm	21858	...
63	16	50	38	17		401
63	22	50	48	19		403
63	27	60	58	21		405
63	32	60	78	24		407
63	40	60	88	27		409

21858
Short

Medium length with KKB

Taper HSK	D1 mm	A mm	D2 mm	l1 mm	21858	...
63	16	100	38	17		402
63	22	100	48	19		404
63	27	100	58	21		406
63	32	100	78	24		408
63	40	100	88	27		410

21858
Medium length

Long with KKB

Taper HSK	D1 mm	A mm	D2 mm	l1 mm	21858	...
63	16	160	38	17		411 NEW
63	22	160	48	19		412 NEW
63	27	160	58	21		413 NEW
63	32	160	78	24		414 NEW
63	40	160	88	27		415 NEW

21858
Long

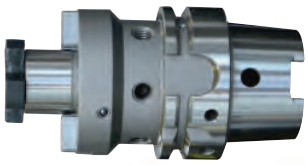
21859 Blade head supports with KKB

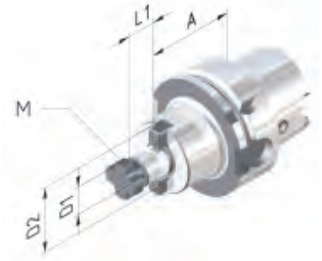
DIN 69893 | A | G 2,5 25000 1/min | ≤6µm | HPC

Design
- Ground taper shank, mounting spigot and contact surface
- Hard-turned shank
- Balluf chip bore
- With coolant channel bores (KKB)

Scope of delivery:
Cutter retaining screw.

21859





Taper HSK	D1 mm	A mm	D2 mm	L1 mm	21859	...
63	16	50	38	17		101
63	22	50	48	19		102
63	27	60	60	21		103
63	32	60	78	24		104

21864 Coolant tubes

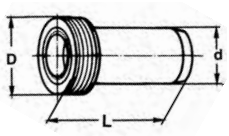
DIN 69893

ATORN®

Applications
To optimise central coolant supply in hollow shank tapers in accordance with DIN 69893-HSK-A/E.

NEW

21864



HSK	D	d mm	L mm	21864 ...
32	M10 x 1	6	25.7	201
40	M12 x 1	8	29.2	202
50	M16 x 1	10	32.7	203
63	M18 x 1	12	36.2	204
80	M20 x 1.5	14	39.7	205
100	M24 x 1.5	16	43.6	206

21865 Key for coolant tubes

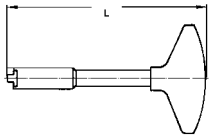
DIN 69893

ATORN®

Applications
For coolant tube art. no. 21864.

NEW

21865



HSK	L mm	21865 ...
32	115	201
40	115	202
50	115	203
63	122	204
80	136	205
100	141	206

Info Multi-spindle heads for drilling, thread cutting, countersinking, reaming, milling, turning etc.

Multi-spindle drilling heads with a fixed drill pattern for machining centres with or without automatic tool changes. For the use of solid carbide tools with speeds up to 12,000 rpm with or without coolant supply.

Type SMSK 6/15
With 6 spindles and a maximum drilling capacity of 15 mm per spindle. Spindle head in accordance with DIN 55058 for adjustment sleeve size 20. Special holder with collet chuck holder for high rotation speeds when using solid-carbide drills or solid-carbide tools. Multi-spindle head mount, steep taper 50 with grip lock for machining centres.

Type SMSK 2/15
Steep taper mount 40 with continuous coolant supply, tapping chuck with length compensation under compression and tension.

Type KE
Characterised by simple and quick adjustment. Very sturdy construction, large adjustment range, narrowest spindle intervals, low weight, long service life, also suitable for smaller series in a medium tolerance range. Multi-spindle heads with drill patterns adjustable by replacing the spindle mount plate (matrix).

Type SMSK 4/15
Drilling performance of 15 mm per spindle or thread cutting performance of M 12. Spindle head in accordance with DIN 55058 for adjustment sleeve size 20. Quick-change thread-cutting chuck with tension and compression length compensation and spring-mounted countersink sleeve for chamfering the bore. Multi-spindle head mount, steep taper 50 with grip lock for machining centres. Multi-spindle head, easily adjustable, deliverable with two, three or four spindles, max. drilling performance per spindle of 3 mm to 32 mm depending on type.

Type KR
Featuring jointed spindles with high concentricity, good bearing stability and minimal spindle intervals. Simple alteration of drilling patterns and absolute dimensional accuracy thanks to spindle mount plates (matrices) produced in the co-ordinate system, large adjustment range of individual types up to 530 mm, max drilling capacity up to 40 mm in steel.

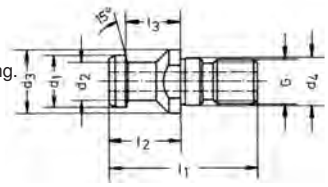
Please contact us! For the best possible advice, please add a dimensioned drawing of the drilling patterns.

21733 - 21734 Pull stud in accordance with DIN 69872

ATORN®

21733
Design
Shape A with bore and O-ring.
Gripping collar angle **15°.**

21734
Design
Shape B without bore, with O-ring.
Gripping collar angle **15°**.



21733

21734

For SK	d_1 mm	d_2 mm	d_3 mm	d_4 mm	THD	l_1 mm	l_2 mm	l_3 mm	21733	...	21734	...
40	19	14	23	17	M 16	54	26	20		101		101
50	28	21	36	25	M 24	74	34	25		102		102

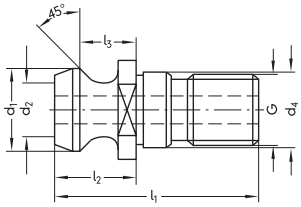
21735 Pull stud ISO 7388/2 shape B

ATORN®

Design
Gripping collar angle **45°.**

21735 101-102
Design
With bore and O-ring.

21735 201-202
Design
Without bore, with O-ring.



21735 101-102

21735 201-202

For SK	d_1 mm	d_2 mm	d_4 mm	THD	l_1 mm	l_2 mm	l_3 mm	21735	...	21735	...
40	18.95	12.95	17	M 16	44.5	16.4	11.15		101		201
50	29.10	19.6	25	M 24	65.5	25.55	17.95		102		202

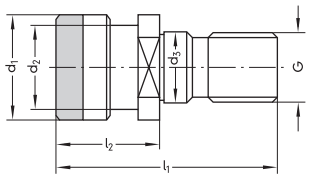
21736 Pull stud

ATORN®

Design
With **ring groove (Ott clamping groove),** gripping collar angle **15°**.

21736 301-302
Head made of solid material.

21736 303-304
With female thread.



21736 301-302

21736 303-304

For SK	d_1 mm	d_2 mm	d_3 mm	THD	l_1 mm	l_2 mm	21736	...
40	25.0	21.1	17	M 16	53	25		301
50	39.6	32.0	25	M 24	65	25		302
40	25.0	21.1	17	M 16	53	25		303
50	39.6	32.0	25	M 24	65	25		304

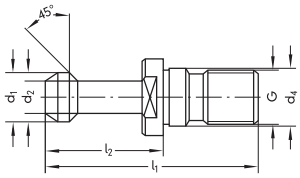
21737 - 21739 Pull stud MAS 403-BT/JIS B 6339

ATORN®

21737
Design
Gripping collar angle **45°.**

21738
Design
Gripping collar angle **60°** (also for OKUMA machining centres).

21739
Design
Gripping collar angle **90°.**



21737

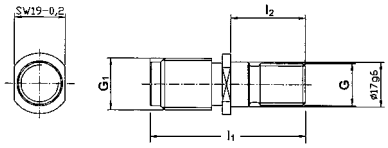
21738

21739

For BT	d_1 mm	d_2 mm	d_4 mm	THD	l_1 mm	l_2 mm	45° 21737	...	60° 21738	...	90° 21739	...
40	15	10	17	M 16	60	35		402		402		402
50	23	17	25	M 24	85	45		403		403		403

21740 Pull stud with buttress thread

ATORN®



21740

For SK	THD_1	THD	l_1 mm	l_2 mm	21740	...
40	S 20 x 2	M 16	56	28		101

Clamping technology

21431 Thread-cutting devices

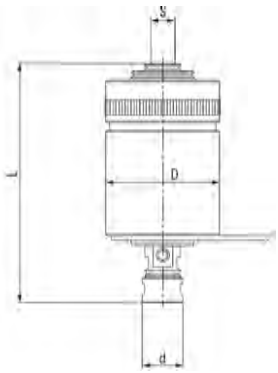
TAPMATIC

Design
Adjustable safety slip coupling, length compensation under compression and tension, automatic quick reverse 1.75:1. With inner taper for interchangeable shanks.

Scope of delivery:
Includes stop arm.

Applications
For thread cutting on machines with clockwise running working spindles. Can be used vertically and horizontally.

Note:
Plug-in pins, see art. no. 21170.
Rubber flex collet chucks, see art. no. 21447.



21431

Type	Mount S inner taper	Cutting area (steel)	Rotation speed max. rpm	Length extension T mm	For rubber collet chucks	D mm	d mm	L mm	21431	...
30 X	B 16	M 1.4–M 7	2000	3.5	J116/J117	48	19	113		**102**
50 X	B 16	M 3.0–M 12	1500	6.0	J421/J422	70	27	153		**103**

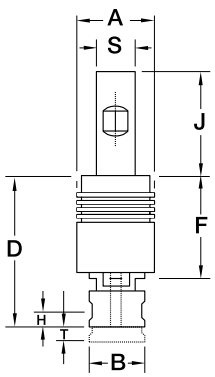
21445 Tapping chucks

TAPMATIC

Design
With initial cut pressure booster and length compensation under tension and pressure, cutting suspension, for vertical and horizontal applications. Mount for straight shanks with driver faces in accordance with DIN 1835 B, for suitable chucks,
see art. No. 21630–21632.

Applications
For use with NC, CNC machines, lathes, machines with reversible directions of rotation. For right-hand or left-hand threads.

Note:
Rubber flex collet chucks, see art. no. 21447.



21445

Type	Cutting area (steel)	Straight shank Ø diameter	Length compensation pressure (H)/tension (T) mm	Rubber collet chucks	D mm	d mm	L1 mm	L2 mm	L3 mm	21445	...
SM2 - 020	M 1.4–M 7	20	5.0/4.5	J116/J117	27	19	50	53	26		**101**
SM4 - 020	M 3.0–M 12	20	7.0/7.0	J421/J422	38	27	48	71	36		**102**

21447 Rubber collet chucks DIN 6345

RUBBER-FLEX

Applications
For Tapmatic thread-cutting devices,
see art. no. 21431/21445.

21447

Type	Clamping range mm	21447	...
J 115	1.0–2.5		**101**
J 116	2.5 - 4.5		**102**
J 117	4.5 - 6.5		**103**
J 423	2.0 - 4.5		**104**

Type	Clamping range mm	21447	...
J 421	3.5 - 6.5		**105**
J 420	4.5 - 8.0		**106**
J 422	6.5 - 10.0		**107**
J 443	2.8 - 7.0		**108**

Type	Clamping range mm	21447	...
J 441	4.5 - 10.0		**109**
J 440	7.0 - 13.0		**110**
J 445	9.0 - 15.0		**111**

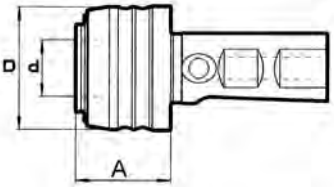
21453 Quick-change tapping chuck for synchronous spindles

ATORN®

Design
- **Minimum length compensation** applied by damping element
- Secure clamping in quick-change inserts for ER collets
- Clamping screws to prevent rotation of the clamped screw tap
- Straight shank similar to DIN 1835 B+E

Applications
For use on drilling and machining centres with synchronous spindles.

Note:
For quick-change inserts, see art. no. 21465.



21453

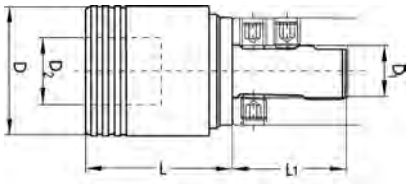
Shank Ø mm	d mm	D mm	A mm	Length compensation mm pressure/tension	For screw tap	21453	...
25	20	43	34	0.2/1.0	M 3–M 12		**101**
25	32	60	56	0.2/1.0	M 6–M 20		**102**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21452 Quick-change tapping chuck

bilz

Design
Type WFLC/MS. Precision version with length compensation under compression and tension. Straight-shank mount with side clamping surface similar to DIN 1835 B/E.
Note:
For quick-change inserts, see art no. 21459–21460.



21452

For screw tap	Suitable inserts/size	Length compensation tension/pressure	D Ø mm	D_1 Ø mm	D_2 Ø mm	L mm	L_1 mm	21452	...
M 3–M 12	1	7.5/7.5	39	25	19	45	53		101
M 6–M 20	2	10.0/10.0	60	25	31	68	53		102

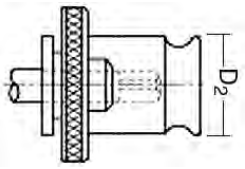
21459 Quick-change inserts without safety slip coupling

HHW

Design
Type WE. Inserts **without safety coupling.**

Applications
For right-hand or left-hand threads.

21459



For chuck size	Shank Ø mm	ShankT mm	DIN 352	DIN 371	DIN 374/376	DIN 5157	D_2 mm	21459	...
1	3.5	2.7	M 3	M 3	M 5	-	19		115
1	4.0	3.0	M 3.5	M 3.5	-	-	19		116
1	4.5	3.4	M 4	M 4	M 6	-	19		118
1	6.0	4.9	M 5–M 8	M 5 + M 6	M 8	-	19		121
1	7.0	5.5	M 10	-	M 10	THD 1/8	19		123
1	8.0	6.2	-	M 8	-	-	19		124
1	9.0	7.0	M 12	-	M 12	-	19		125
1	10.0	8.0	-	M 10	-	-	19		126
2	6.0	4.9	M 5–M 8	M 5 + M 6	M 8	-	31		129
2	7.0	5.5	M 10	-	M 10	-	31		130
2	8.0	6.2	-	M 8	-	-	31		131
2	9.0	7.0	M 12	-	M 12	-	31		132
2	10.0	8.0	-	M 10	-	-	31		133
2	11.0	9.0	M 14	-	M 14	THD 1/4	31		135
2	12.0	9.0	M 16	-	M 16	THD 3/8	31		137
2	14.0	11.0	M 18	-	M 18	-	31		138
2	16.0	12.0	M 20	-	M 20	THD 1/2	31		140
3	11.0	9.0	M 14	-	M 14	-	48		141
3	12.0	9.0	M 16	-	M 16	-	48		142
3	14.0	11.0	M 18	-	M 18	-	48		143
3	16.0	12.0	M 20	-	M 20	-	48		144
3	18.0	14.5	M 22 + M 24	-	M 22 + M 24	THD 5/8	48		146
3	20.0	16.0	M 27 + M 28	-	M 27 + M 28	THD 3/4	48		148
3	22.0	18.0	M 30	-	M 30	THD 7/8	48		150
3	25.0	20.0	M 33	-	M 33	THD 1	48		152

21460 Quick-change inserts with safety slip coupling

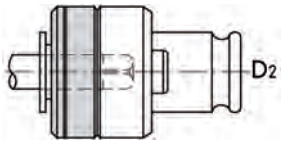
HHW

Design
Type WES/B, inserts **with safety coupling.**

Applications
For right-hand threads.

Note:
Inserts for left-hand threads deliverable on request.

21460



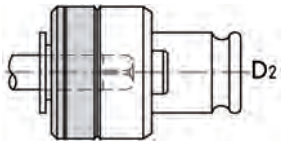
For chuck size	Shank Ø mm	ShankT mm	DIN 352	DIN 371	DIN 374/376	DIN 5157	D_2 mm	21460	...
1	3.5	2.7	M 3	M 3	-	-	19		315
1	4.0	3.0	M 3.5	M 3.5	-	-	19		317
1	4.5	3.4	M 4	M 4	-	-	19		318
1	4.5	3.4	-	-	M 6	-	19		319
1	6.0	4.9	M 5	M 5	-	-	19		320
1	6.0	4.9	M 6	M 6	-	-	19		321
1	6.0	4.9	M 8	-	M 8	-	19		322
1	7.0	5.5	M 10	-	M 10	-	19		323
1	8.0	6.2	-	M 8	-	-	19		325
1	9.0	7.0	M 12	-	M 12	-	19		326
1	10.0	8.0	-	M 10	-	-	19		327

Continued

Continued

For chuck size	Shank Ø mm	ShankT mm	DIN 352	DIN 371	DIN 374/376	DIN 5157	D2 mm	21460	...
2	6.0	4.9	M 6	M 6	-	-	31		329
2	6.0	4.9	M 8	-	M 8	-	31		330
2	7.0	5.5	M 10	-	M 10	-	31		331
2	8.0	6.2	-	M 8	-	-	31		332
2	9.0	7.0	M 12	-	M 12	-	31		333
2	10.0	8.0	-	M 10	-	-	31		334
2	11.0	9.0	M 14	-	M 14	-	31		335
2	12.0	9.0	M 16	-	M 16	-	31		337
2	14.0	11.0	M 18	-	M 18	-	31		339
2	16.0	12.0	M 20	-	M 20	-	31		340
3	11.0	9.0	M 14	-	M 14	-	48		342
3	12.0	9.0	M 16	-	M 16	-	48		343
3	14.0	11.0	M 18	-	M 18	-	48		344
3	16.0	12.0	M 20	-	M 20	-	48		345
3	18.0	14.5	M 22	-	M 22	THD 5/8	48		346
3	18.0	14.5	M 24	-	M 24	-	48		347
3	20.0	16.0	M 27 + 28	-	M 27 + 28	-	48		348
3	22.0	18.0	M 30	-	M 30	-	48		350
3	25.0	20.0	M 33	-	M 33	-	48		352

21460



21465 - 21466 Quick-change inserts for synchronous collet

ATORN®

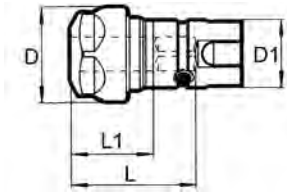
21465 101-102
Design
One piece.

21465 201-202
Design
Two pieces.

Note:
For quick-change thread-cutting chucks no. 21453, 21457 and 21837.

21466
Extensions for quick-change inserts (two pieces) no. 21465 201–202.

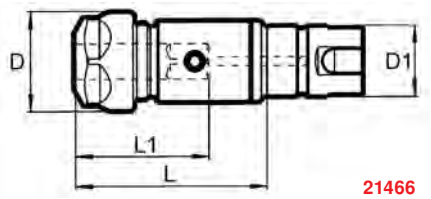
21465 101-102



One piece

For collet chucks ER	L mm	L1 mm	D mm	D1 mm	For thread M	21465	...
16	37	24	28	20	3 - 12		101
25	52	28	42	32	6 - 20		102

21465 201-202



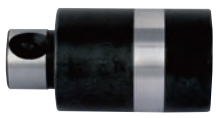
Two pieces

For collet chucks ER	L mm	L1 mm	D mm	D1 mm	For thread M	21465	...
16	55	38	28	20	3–12		201
25	86	50	42	32	6–20		202

Extensions for two-piece quick-change inserts

L mm	D mm	For thread M	21466	...
25	22	3–12		101
50	22	3–12		102
50	34	6–20		103
100	34	6–20		104

21466

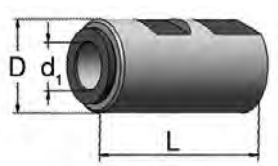


21641 Clamping sleeves for screw taps

Applications
For direct mounting of screw taps in milling cutter holders (Weldon) without length compensation.

Note:
Cost-effective alternative to synchronous spindles.

21641



D mm	d_1 x T mm	L mm	21641	...
16	3.5 x 2.7	56		101
16	4.0 x 3.0	56		102
20	6.0 x 4.9	58		103
20	7.0 x 5.5	58		104
20	8.0 x 6.2	58		105
20	9.0 x 7.0	58		106

D mm	d_1 x T mm	L mm	21641	...
20	10.0 x 8.0	58		107
25	11.0 x 9.0	66		108
25	12.0 x 9.0	66		109
32	14.0 x 11.0	70		110
32	16.0 x 12.0	70		111
32	18.0 x 14.5	70		112

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

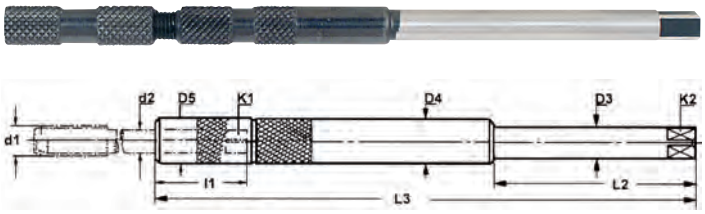
23110 Extensions for machine taps

Design
- Extension with DIN shank
- Clamping via chuck and collet chuck

Advantages:
- No costly screw taps in special lengths
- No replacement parts required

Applications
For thread cutting in inaccessible places.
Can also be used on all CNC machines

23110



Short Type	Screw tap dimensions Thread nominal Ø d mm DIN 371	DIN 374/376	Shank Ø d2 mm	Square K1 mm	Clamping length l1 mm	Extension dimensions Ø D3 mm	K2 mm	D4/D5 mm	L3 mm	23110 ...
TE1	M 2–M 2.6	M 4	2.8	2.1	22	6	4.9	6.1	130	101
TE2	M 3	M 4.5–M 5	3.5	2.7	23	6	4.9	7.5	130	103
TE3	M 4	M 6	4.5	3.4	23	6	4.9	8.4	130	105
TE4	M 4.5–M 6	M 8	6.0	4.9	26	7	5.5	12.1	130	107
TE5	M 7	M 9–M 10	7.0	5.5	26	7	5.5	12.1	130	109
TE6	M 8	M 11	8.0	6.2	30	8	6.2	13.0	130	111
TE7	M 9	M 12	9.0	7.0	31	9	7.0	15.0	130	113
TE8	M 10	-	10.0	8.0	33	10	8.0	15.0	130	115
TE9	-	M 14	11.0	9.0	36	11	9.0	18.0	130	117
TE10	-	M 16	12.0	9.0	36	12	9.0	18.0	130	119
TE11	-	M 18	14.0	11.0	42	14	11.0	22.0	200	121
TE12	-	M 20	16.0	12.0	42	16	12.0	22.0	200	123
TE13	-	M22–M 24	18.0	14.5	43	18	14.5	26.0	200	125
TE14	-	M 27	20.0	16.0	48	20	16.0	28.0	200	127
TE15	-	M 30	22.0	18.5	53	22	18.0	30.0	200	129
TE16	-	M 33	25.0	20.0	62	25	20.0	40.0	200	131
TE17	-	M 36	28.0	22.0	64	28	22.0	40.0	200	133
TE18	-	M 39–M 42	32.0	24.0	69	32	24.0	43.0	200	135

Long Type	Screw tap dimensions Thread nominal Ø d mm DIN 371	DIN 374/376	Shank Ø d2 mm	Square K1 mm	Clamping length l1 mm	Extension dimensions Ø D3 mm	K2 mm	D4/D5 mm	L3 mm	23110 ...
TE1 L	M 2–M 2.6	M 4	2.8	2.1	22	6	4.9	6.1	230	102
TE2 L	M 3	M 4.5–M 5	3.5	2.7	23	6	4.9	7.5	230	104
TE3 L	M 4	M 6	4.5	3.4	23	6	4.9	8.4	230	106
TE4 L	M 4.5–M 6	M 8	6.0	4.9	26	7	5.5	12.1	230	108
TE5 L	M 7	M 9–M 10	7.0	5.5	26	7	5.5	12.1	230	110
TE6 L	M 8	M 11	8.0	6.2	30	8	6.2	13.0	230	112
TE7 L	M 9	M 12	9.0	7.0	31	9	7.0	15.0	230	114
TE8 L	M 10	-	10.0	8.0	33	10	8.0	15.0	230	116
TE9 L	-	M 14	11.0	9.0	36	11	9.0	18.0	230	118
TE10 L	-	M 16	12.0	9.0	36	12	9.0	18.0	230	120
TE11 L	-	M 18	14.0	11.0	42	14	11.0	22.0	330	122
TE12 L	-	M 20	16.0	12.0	42	16	12.0	22.0	330	124
TE13 L	-	M22–M 24	18.0	14.5	43	18	14.5	26.0	330	126
TE14 L	-	M 27	20.0	16.0	48	20	16.0	28.0	330	128
TE15 L	-	M 30	22.0	18.5	53	22	18.0	30.0	330	130
TE16 L	-	M 33	25.0	20.0	62	25	20.0	40.0	330	132
TE17 L	-	M 36	28.0	22.0	64	28	22.0	40.0	330	134
TE18 L	-	M 39–M 42	32.0	24.0	69	32	24.0	43.0	330	136

21698 - 21699 Chuck extensions AMC and clamping sleeves

ALBRECHT
Präzisions Spannfutter

21698
Clamping chuck extensions AMC
Design
- Very slim for hard-to-reach machining areas
- Concentricity accuracy below 0.008 mm
- Operated using the supplied hexagon key

Applications
Can be clamped in all precision chucks.
For clamping the smallest of tools.

21699
Clamping sleeves
Design
- Hardened
- Ground
- Coated

Applications
For clamping chuck extensions AMC, no. 21698.

21698

21699

Continued ▶

Collets

Continued

Clamping range mm	Shank Ø mm	Length mm	Mount	Chuck extensions 21698	...
1–6	14 h6	100	DIN 6535-HA straight shank		101
1–6	14 h6	150	DIN 6535-HA straight shank		102
1–6	20 h6	100	DIN 6535-HB Weldon		104
1–6	20 h6	150	DIN 6535-HB Weldon		105

Clamping sleeve Ø mm	Clamping sleeves 21699	...
1		101
2		102
3		103
4		104
5		105
6		106

21519 - 21525 ER collets

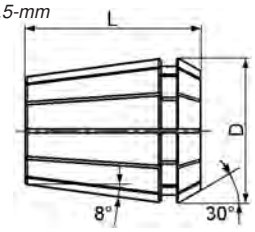
DIN 6499 | B | ≤15µm

Design
- Fully hardened and ground
- Ground, concentricity accuracy 0.015 mm

Applications
In standard collet chucks.

21519
Set in plastic case

Note:
The clamping bridge is up to 1 mm smaller, e.g. 9–8 mm, except in the case of 1-mm and 1.5-mm collet chucks (then only 0.5 mm). Plastic collet chuck box, see AQURADO bearing system HHW catalogue Volume 2 (tools + machines) art. no. 84134.



21520 - 21525

Individual parts	Type ER 11/4008 E D x L 11.5 x 18mm		Type ER 16/426 E D x L 17 x 27.5 mm		Type ER 20/428 E D x L 21 x 31.5 mm		Type ER 25/430 E D x L 26 x 34 mm		Type ER 32/470 E D x L 33 x 40 mm		Type ER 40/472 E D x L 41 x 46 mm	
Clamping diameter mm	21520	...	21521	...	21522	...	21523	...	21524	...	21525	...
1.0		101		101								
1.5		102		102								
2.0		103		103		103		103				
2.5		104		104								
3.0		105		105		105		105		105		
3.5		106										
4.0		107		107		107		107		107		107
4.5		108										
5.0		109		109		109		109		109		109
5.5		110										
6.0		111		111		111		111		111		111
6.5		112										
7.0		113		113		113		113		113		113
8.0				114		114		114		114		114
9.0				115		115		115		115		115
10.0				116		116		116		116		116
11.0						117		117		117		117
12.0						118		118		118		118
13.0						119		119		119		119
14.0								120		120		120
15.0								121		121		121
16.0								122		122		122
17.0										123		123
18.0										124		124
19.0										125		125
20.0										126		126
21.0												127
22.0												128
23.0												129
24.0												130
25.0												131
26.0												132

Set

Type	D x L mm	Contents	Clamping range mm	Increasing by mm	21519	...
ER 11/4008 E	11.5 x 18.0	13 pieces	1–7	0.5		100
ER 16/426 E	17.0 x 27.5	10 pieces	1–10	1.0		101
ER 20/428 E	21.0 x 31.5	12 pieces	2–13	1.0		105
ER 25/430 E	26.0 x 34.0	15 pieces	2–16	1.0		102
ER 32/470 E	33.0 x 40.0	18 pieces	3–20	1.0		103
ER 40/472 E	41.0 x 46.0	23 pieces	4–26	1.0		104

21519 103

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

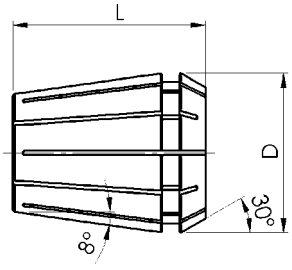
DIN 6499 B ≤5µm

FAHRION® PRAZISION

Design
- Fully hardened and ground
- **Protective coating for longer precision and quality,** concentric accuracy 0.005 mm

Applications
In standard collet chucks.

Note:
The clamping bridge is up to 1 mm smaller, e.g. 9–8 mm, except in the case of 1-mm and 1.5-mm collet chucks (then only 0.5 mm).
Plastic collet chuck box, see AQURADO bearing system HHW catalogue Volume 2 (tools + machines) art. no. 84134.



21534 - 21539

Individual parts	Type GERC 11-B/4008 E D x L 11.3 x 18.0 mm		Type GERC 16-B/426 E D x L 17 x 27.5 mm		Type GERC 20-B/428 E D x L 21 x 31.5 mm		Type GERC 25-B/430 E D x L 26 x 34 mm		Type GERC 32-B/470 E D x L 33 x 40 mm		Type GERC 40-B/472 E D x L 41 x 46 mm	
Clamping diameter mm	21534	...	21535	...	21536	...	21537	...	21538	...	21539	...
1.0		201		201								
1.5		202		202								
2.0		203		203		203		203				
2.5		204		204								
3.0		205		205		205		205		205		207
3.5		206										
4.0		207		207		207		207		207		208
4.5		208										
5.0		209		209		209		209		209		209
5.5		210										
6.0		211		211		211		211		211		211
6.5		212										
7.0		213		213		213		213		213		213
8.0				214		214		214		214		214
9.0				215		215		215		215		215
10.0				216		216		216		216		216
11.0						217		217		217		217
12.0						218		218		218		218
13.0						219		219		219		219
14.0								220		220		220
15.0								221		221		221
16.0								222		222		222
17.0										223		223
18.0										224		224
19.0										225		225
20.0										226		226
21.0												227
22.0												228
23.0												229
24.0												230
25.0												231
26.0												232

21519
Set supplied in wooden case

21519 205

Set Type	D x L mm	Contents	Clamping range mm	Increasing by mm	21519	...
GERC 11-B/4008 E	11.3 x 18.0	13 pieces	1–7	0.5		201
GERC 16-B/426 E	17.0 x 27.5	10 pieces	1–10	1.0		202
GERC 20-B/428 E	21.0 x 31.5	12 pieces	2–13	1.0		203
GERC 25-B/430 E	26.0 x 34.0	15 pieces	2–16	1.0		204
GERC 32-B/470 E	33.0 x 40.0	18 pieces	3–20	1.0		205
GERC 40-B/472 E	41.0 x 46.0	23 pieces	4–26	1.0		206

21546 - 21550 GERC-HP precision collet chucks

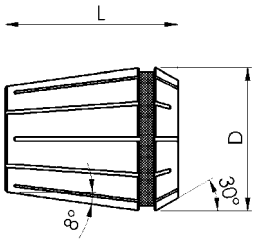
DIN 6499 | B | ≤2µm

FAHRION® PRAZISION

Design
- Fully hardened and ground
- **Protective coating for longer precision and quality,** concentric accuracy 0.002 mm
- System accuracy and repeatability in conjunction with CENTRO|P 0.003 mm
- Without clamping bridge

Applications
For CENTRO|P collet chucks and ATORN precision collet chucks.

Note:
For sealing washers, see art. no. 21513 (only available online).
Plastic collet chuck box, see AQURADO bearing system HHW catalogue Volume 2 (tools + machines) art. no. 84134.



21546 - 21550

	Type GERC 11-HP/4008 E D x L 11.3 x 18mm	Type GERC 16-HP/426 E D x L 17 x 27.5 mm	Type GERC 25-HP/430 E D x L 26 x 34 mm	Type GERC 32-HP/470 E D x L 33 x 40 mm
Clamping Ø mm	21546 ...	21547 ...	21549 ...	21550 ...
1.0	201	201		
1.5	202	202		
2.0	203	203	203	
2.5	204	204		
3.0	205	205	205	205
3.5	206			
4.0	207	207	207	207
4.5	208			
5.0	209	209	209	209
5.5	210			
6.0	211	211	211	211
6.5	212			
7.0	213	213	213	213
8.0		214	214	214
9.0		215	215	215
10.0		216	216	216
11.0			217	217
12.0			218	218
13.0			219	219
14.0			220	220
15.0			221	221
16.0			222	222
17.0				223
18.0				224
19.0				225
20.0				226

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21561 - 21566 GERC-HPD sealed precision collet chucks for CENTRO|P

≤2µm

FAHRION® PRAZISION

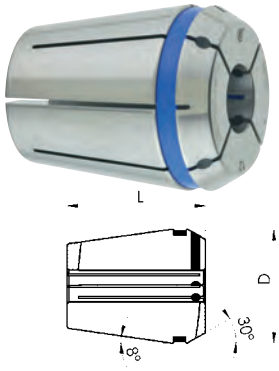
Design
- **Protective coating for longer precision and quality,** fully hardened, ground and sealed
- Concentricity 0.002 mm
- Without clamping bridge

Applications
For internally cooled tools in CENTRO|P collet chuck and ATORN precision collet chuck.

Note:
Plastic collet chuck box, see AQURADO bearing system HHW catalogue Volume 2 (tools + machines) art. no. 84134.

21566 120

21561 - 21566



Individual	Type GERC11-HPD/4008 E D x L 11.3 x 18.0 mm	Type GERC16-HPD/425 E D x L 17 x 27.5 mm	Type GERC25-HPD/429 E D x L 26 x 34 mm	Type GERC32-HPD/469 E D x L 33 x 40 mm
Clamping Ø mm	21561 ...	21563 ...	21565 ...	21566 ...
3	101	101		
4	102	102	101	101
5	103	103	102	102
6	104	104	103	103
7		105	104	104
8		106	105	105
9		107	106	106
10		108	107	107
11			108	108
12			109	109
13			110	110
14			111	111
15			112	112
16			113	113
17				114
18				115
19				116
20				117

Set Contents	Clamping Ø mm	Type GERC16-HPD/425 E D x L 17 x 27.5 mm 21563 ...	Type GERC25-HPD/429 E D x L 26 x 34 mm 21565 ...	Type GERC32-HPD/469 E D x L 33 x 40 mm 21566 ...
Six pieces	3 - 4 - 5 - 6 - 8 - 10	120		
Seven pieces	4 - 6 - 8 - 10 - 12 - 14 - 16		120	
Eight pieces	4 - 6 - 8 - 10 - 12 - 14 - 16 - 20			120

21567 - 21569 GERC-HPDD sealed precision collet chucks with spray nozzle for CENTRO|P

≤2µm

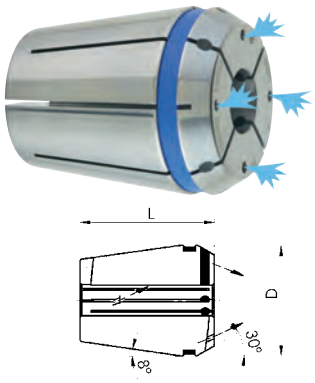
FAHRION® PRAZISION

Design
- **Protective coating for longer precision and quality,** completely hardened and ground, **sealed with spray nozzle**
- Concentricity 0.002 mm
- Without clamping bridge

Applications
For tools without internal cooling in CENTRO|P collet chuck and ATORN precision collet chuck.

Note:
Plastic collet chuck box, see AQURADO bearing system HHW catalogue Volume 2 (tools + machines) art. no. 84134.

21567 - 21569



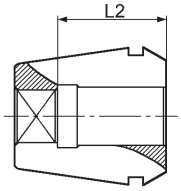
Clamping Ø mm	Type GERC16-HPDD/425 E D x L 17.0 x 27.5 mm 21567 ...	Type GERC25-HPDD/429 E D x L 26 x 34 mm 21567 ...	Type GERC32-HPDD/469 E D x L 33 x 40 mm 21569 ...
4	201	101	101
6	202	102	102
8	203	103	103
10		104	104
12		105	105
14		106	106
16			107
18			108
20			109

21526 - 21528 ER collet chucks for thread cutting

Design
Square drive for driving the screw tap. Without length compensation.

Applications
For clamping screw taps in collet chucks. Use only on synchronous machines.

Note:
Plastic collet chuck box, see AQURADO bearing system HHW catalogue Volume 2 (tools + machines) art. no. 84134.



Shank diameter mm	Square mm	L2 mm	ER 16/4031 E 21526	...	ER 25/4282 E 21527	...	ER 32/4537 E 21528	...
3.5	2.7	18		201		201		
4.5	3.4	18		202		202		202
5.5	4.3	18		203		203		203
6.0	4.9	18		204		204		204
7.0	5.5	18		205		205		205
8.0	6.2	22		206		206		206
9.0	7.0	22		207		207		207
10.0	8.0	25		208		208		208
11.0	9.0	25				209		209
12.0	9.0	25				210		210
14.0	11.0	25				211		211
16.0	12.0	25				212		212

21552 - 21554 OZ collets

DIN 6388

Design
- Spring steel, completely hardened and ground
- Through hole to increase the clamping force

Advantages:
- Improved concentricity
- Higher clamping force due to increased contact ratio
- Higher system rigidity and tool life

Note:
Plastic collet chuck box, see AQURADO bearing system HHW catalogue Volume 2 (tools + machines) art. no. 84134.

21552 - 21554

Clamping Ø mm	Type 415 E For chuck size 2–16 mm D x L 25.5 x 40 mm 21552	...	Type 462 E For chuck size 3–25 mm D x L 35.05 x 52 mm 21553	...	Type 467 E For chuck size 4–32 mm D x L 44 x 60 mm 21554	...
2		101				
3		102		102		
4		103		103		103
5		104		104		104
6		105		105		105
7		106		106		106
8		107		107		107
9		108		108		108
10		109		109		109
11		110		110		110
12		111		111		111
13		112		112		112
14		113		113		113

Clamping Ø mm	Type 415 E For chuck size 2–16 mm D x L 25.5 x 40 mm 21552	...	Type 462 E For chuck size 3–25 mm D x L 35.05 x 52 mm 21553	...	Type 467 E For chuck size 4–32 mm D x L 44 x 60 mm 21554	...
15		114		114		114
16		115		115		115
17				116		116
18				117		117
19				118		118
20				119		119
22				120		120
24				121		121
25				122		122
26						123
28						124
30						125
32						126

21581 - 21582 Reducing sleeves

ATORN®

21581

21581
Design
Sealed for hydraulic expansion chucks.

21582

21582
Design
No seal for power chucks.

Suitable in D_1 mm	Reduction to D_2 mm	21581	...	21582	...
12	3		093		
12	4		094		
12	5		095		
12	6		096		
12	8		097		
20	3		098		098
20	4		099		099
20	5		100		100
20	6		101		101
20	8		102		102
20	10		103		103
20	12		104		104
20	14		105		105

Suitable in D_1 mm	Reduction to D_2 mm	21581	...	21582	...
20	16		106		106
32	3				110
32	4				111
32	5				112
32	6		113		113
32	8		114		114
32	10		115		115
32	12		116		116
32	14		117		117
32	16		118		118
32	18		119		119
32	20		120		120
32	25		121		121

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21509 Accessories for CENTRO|P precision collet chuck

FAHRION® PRAZISION

Note:
Clamping nuts CENTRO|P (art. no. 21509 102–106 and 21509 002–006) must only be used in conjunction with roller wrenches (art. no. 21509 200–206) or roller wrench adapters (no. 21509 301–306).

21509 101
Mini clamping nut

21509 102-106
Standard clamping nuts

21509 200-206
Roller wrenches

21509 301-306
Roller torque wrench adapters

21509 101

21509 102+104+106

21509 103

Clamping nuts

Size	For Collet chucks	Ø D mm	21509	...
HPC 11 M	ER 11/4008 E	16		**101**
HPC 16	ER 16/426 E	30		**102**
HPC 16C	ER 16/426 E	24		**103**
HPC 25	ER 25/430 E	40		**104**
HPC 32	ER 32/470 E	50		**106**

21509 200-206

Roller wrenches

Size	For clamping nut	21509	...
RO 16	HPC 11 M		**200**
RO 24	HPC 16C		**201**
RO 30	HPC 16		**202**
RO 40	HPC 25		**204**
RO 50	HPC 32		**206**

21509 301-306

Roller wrench adapters

Size	For clamping nut	Ø mm	Torque max. Nm	Ø mm	Torque max. Nm	Ø mm	Torque max. Nm	Ø mm	Torque max. Nm	Push-fit mount mm	21509	...
DRO 24	HPC 16C	1.0	10	1.5–3.5	15–20	4.0–10.0	25–30	-	-	9 x 12		**301**
DRO 30	HPC 16	1.0	10	1.5–3.5	25–30	4.0–10.0	50–55	-	-	9 x 12		**302**
DRO 40	HPC 25	1.0–3.0	25–30	3.5–6.5	35–40	7.0–10.0	55–60	10.5–16.0	80–90	14 x 18		**304**
DRO 50	HPC 32	2.0–3.0	30–35	3.5–6.5	55–60	7.0–15.5	110–120	16.0–20.0	130–140	14 x 18		**306**

21518 Replacement standard clamping nuts

ATORN®

21518

Clamping range mm	Collet chuck type	Ø D mm	21518	...
1–10	AER 16	30		**101**
1–16	AER 25	40		**102**
2–20	AER 32	50		**103**

21517 Replacement mini clamping nuts

Design
For collet chucks of **type ER.**

21517

Clamping range mm	Outer Ø d mm	Collet chuck type	Thread	21517	...
1–7	16	ER 11/4008 E	M 13 x 0.75		**101**
1–10	22	ER 16/426 E	M 19 x 1		**102**
1–13	28	ER 20/428 E	M 24 x 1		**103**
2–16 of	35	ER 25/430 E	M 30 x 1		**104**

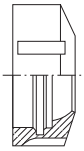
21530 Spare clamping nuts

Applications
For collet chucks of **type ER**.

Note:
Open-ended spanner for nut art. no. 21530 103 see HHW catalogue Volume 2 (tools + machines) art. no. 50113 235.

21530 103

21530



For clamping range mm	For type ER	Nuts Ø mm	21530	...
1–10	16	SW 25/28		103
1–10	16	32		104
1 - 16	25	42		105
2 - 20	32	50		106
3 - 26	40	63		107

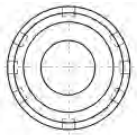
21562 OZ clamping nuts

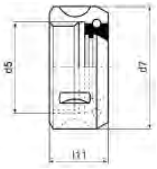
DIN 6388

Design
Ball-bearing union nut.
Applications
For collet chuck no. 21540–21545.

Note:
Spanner, see HHW catalogue Volume 2 (tools + machines) art. no. 50650 et seq.

21562





For clamping range mm	d5	d7 mm	l11 mm	21562	...
2–16	M 33 x 1.5	43	24.0		101
3–25	M 48 x 2.0	60	30.0		102
4–32	M 60 x 2.5	72	33.5		103

21516 Chuck key

Design
Special steel, bronzed, ground upright.

Applications
For collet chucks of **type ER mini.**

21516

For clamping range mm	Collet chuck type	21516	...
1–7	ER 11/4008 E		101
1–10	ER 16/426 E		102
1–13	ER 20/428 E		103
1–16	ER 25/430 E		104

21532 Chuck key

Design
Made from special steel, hardened and bronzed, with hanging hole.

Applications
For collet chucks of **type ER.**

21532

For clamping range mm	For type ER	For nuts Ø mm	Total length mm	21532	...
1–10	16	32	160		103
1 - 16	25	42	203		104
2 - 20	32	50	253		105
3 - 26	40	63	285		106

21570 - 21571 Pressure collet chucks

DIN 6343

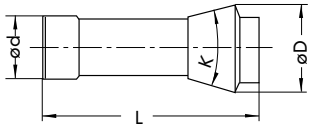
21570
Design
Type 173 E, dimensions: diameter d 48 x diameter D 60 x L 94 mm, K = 30°. **DIN 6343/F48.**

21571
Design
Type 185 E, dimensions: diameter d 66 x diameter D 84 x L110 mm, K = 30°. **DIN 6343/F66.**

Note:
Smooth bore up to 7 mm diameter, with transverse grooves from 8 mm diameter.

Collet chucks with square or hexagonal profiles deliverable on request.

21570



Bore mm	173 E 21570	...	185 E 21571	...
3		101		
4		102		
5		103		103
6		104		104
7		105		105
8		106		106
9		107		107
10		108		108
11		109		109
12		110		110
13		111		111
14		112		112
15		113		113
16		114		114
17		115		115
18		116		116
19		117		117
20		118		118
21		119		119
22		120		120

Bore mm	173 E 21570	...	185 E 21571	...
23		121		121
24		122		122
25		123		123
26		124		124
27		125		125
28		126		126
29		127		127
30		128		128
31		129		129
32		130		130
33		131		131
34		132		132
35		133		133
36		134		134
37		135		135
38		136		136
39		137		137
40		138		138
41		139		139
42		140		140

Bore mm	173 E 21570	...	185 E 21571	...
43				141
44				142
45				143
46				144
47				145
48				146
49				147
50				148
51				149
52				150
53				151
54				152
55				153
56				154
57				155
58				156
59				157
60				158

21572 Emergency pressure collet chucks

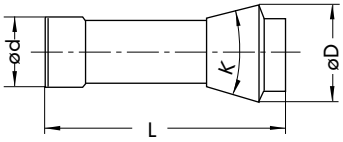
DIN 6343

Design
- Hardened to approx. 45 HRC
- Fully ground

Applications
For self-machining to the desired diameter or stepped bore.

Note:
Can be machined in the chuck using three dowel pins inserted in the face end.

21572

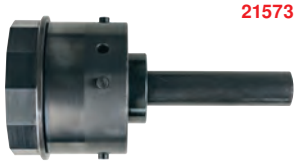


Type	Ø D mm	Ø d mm	L mm	Pre-bored to Ø mm	21572	...
173 E	60	48	94	3		101
185 E	84	66	110	6		102

21573 Interior stops for pressure collet chucks

Applications
For pressure collet chucks in accordance with DIN 6343. As a stop for turned parts. Can also be used for hollow parts. Suitable for round, hexagonal and square collet chucks.

21573



For collet chuck type	21573	...
173 E		101
185 E		102

21590 Inductive shrink devices

diebold

21590 101
HS 1100-P
Design
- Horizontal, high-performance, parameter-controlled or manually controlled inductive shrink-fit device
- Flexible, replaceable tool chucks
- Worn or broken tools can be ejected using a removal tool

Advantage:
- Horizontal design for exact positioning of the tools
- Optional digital length measuring fixture

21590 102
ISG 2430 TLK
Design
- Shrink-fit device with integrated air cooling
- Simple menu navigation of the parameter-controlled or manually controlled shrink process
- Manual coil and cooling control

Advantage:
- No contact with hot shrink-fit chucks
- No overheating of chucks thanks to fixed parameters

21590 104
ISG 2410 WK
Design
- Shrink-fit device with automatic coil control and water cooling
- Chucks are cooled automatically in the heat-shrink position
- Intelligent, programmable parameter control with simple menu navigation

Advantage:
- No contact with hot shrink-fit chucks
- No tool damage caused by cooling adapter
- No overheating of chucks thanks to fixed parameters

21590 101

21590 102

21590 104

Technical data	21590 101	21590 102	21590 104
Type	HS 1100-P	ISG 2430 TLK	ISG 2410 WK
Shrink area cemented carbide	Diameter 3–32 mm	Diameter 3 to 20 mm	Diameter 3 to 20 mm
Shrink area HSS	Diameter 6–32 mm	Diameter 6–20 mm	Diameter 6 to 20 mm
Tool length max.	350 mm	350 mm	400 mm
Cooling method	No cooling	Air cooling with adapter	Automatic water cooling
Tank capacity	-	-	40 l
Cooling length max.	-	350 mm	200 mm
Cooling time	300 s	90 s	20 s
Machine interface	SK 30–50 HSK 40–100	SK 30–50 HSK 32–100	SK 30–50 HSK 32–100
Connection	400V/16A	400V/16A	400V/16A
Output	11 kW	8 kW	8kW
Dimensions (WxDxH)	600 x 451 x 357	780 x 535 x 950	800 x 560 x 1720
Scope of delivery	Device with inductive coil, 5 ferrite discs, Protective gloves	Shrink-fit device with integrated cooling station, 3 ferrite discs Protective gloves	Shrink-fit device: 3 ferrite discs 1 l coolant concentrate, Protective gloves
Required accessories	Tool chuck 21591 -	Cooling adapter 21592 Tool chuck 21593	Tool chuck 21594 -
Optional accessories	Digital length setting 21591 201 Water cooler FKS 04 21590 103	Water cooler FKS 04 21590 103	- -

Type	21590 ...	21590 ...	21590 ...
HS 1100-P	101		
ISG 2430 TLK		102	
ISG 2410 WK			104

See next page for accessories

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21591 Accessories for HS 1100-P

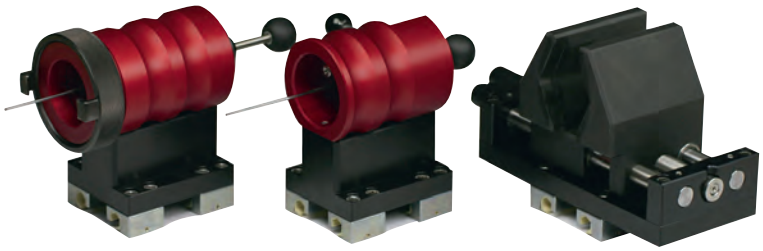
diebold

21591 101-104
Tool chuck
Design
- For clamping different taper shanks in the shrink device

Note:
Other taper sizes deliverable on request.

Size	Shape	21591 ...
HSK 63	A/E	101
SK 40	SK/BT	102
SK 50	SK/BT	103
Universal	Diameter 12–100 mm	104

21591 101-104



21591 201
Digital length setting
Design
- Can be retrofitted
- Accuracy 0.01 mm

Advantage:
- For shrinking exact tool lengths

Type	21591 ...
Digital length setting	201

21591 201

21592 - 21593 Accessories for ISG 2400 TLK

diebold

21592
Cooling adapter
Applications
To minimise the cooling time, aluminium bodies are used that enclose the hot clamping area with a precise fit and then quickly dissipate the heat to the outside via the cooling ribs. The chuck reaches a temperature at which it can be handled again after only 60 seconds.

21593
Tool chucks

21592

21593

Ø mm	SK	HSK-A	Cooling adapter 21592 ...	Tool chuck 21593 ...
3–5 slim	-	-	101	
3–5	-	-	102	
6–9	-	-	103	
9.1–12	-	-	104	
12.1–16	-	-	105	
16.1–22	-	-	106	
-	40	-		103
-	50	-		104
-	-	63		108

21589 Accessories for FKS 04

diebold

21589 204
Coolant concentrate, 1 litre

Type	21589 ...
Coolant concentrate, 1 litre	204

21589 204

21589 301

21589 303

21589 301+303
Tool chucks for FKS 04

Size	Shape	21589 ...
SK 30/40	SK/BT	301
HSK 40/50/63	-	303

21594 Accessories for ISG 2400/3400 WK

diebold

Design
- Tool chucks for clamping tool shanks during the shrink process

21594

Size	Shape	21594 ...
HSK 63	A/E	101
SK 40	SK/BT	102
SK 50	SK/BT	103

21595 Removal tools

diebold

Design
Basic mount with union nut, hexagon key, adjustable pressure pin.

Applications
For removing broken tool shanks from shrink-fit chucks. Adjust the length of the pressure pin, position the device on the shrink-fit device and remove the tool whilst heating using the eccentric turning handle and pressure pin.

21595

For taper	21595 ...
HSK 40	301
HSK 63	302
BT/SK 40	303

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21745 Assembly aids

Design
Swivels for mounting tools without reclamping.

Applications
For mounting and removing steep taper tool chucks.

21745 102

21745 103

Mount taper sizes	21745 ...
SK 40/ISO/DIN/CAT/BT/HSK 63	102
SK 50/ISO/DIN/CAT/BT	103

21746 Assembly supports

diebold

Design
Cast aluminium housing with easily accessible back. Vertical taper mount for tool-side mounting. Horizontal mount for mounting pull studs, coolant pipes etc.

Applications
Accident-proof mounting and removal of cutting tools and mounts.

21746

For taper	For size	For shape	21746 ...
SK/MAS-BT	30	-	101
SK/MAS-BT	40	-	102
SK/MAS-BT	50	-	103
VDI	20	-	104
VDI	30	-	105
VDI	40	-	106
VDI	50	-	107

For taper	For size	For shape	21746 ...
HSK	32	A/C/E/F	108
HSK	40	A/C/E/F	109
HSK	50	A/C/E/F	110
HSK	63	A/C/E/F	111
HSK	80	A/C	112
HSK	100	A/C	113

21748 Solid-clamp assembly aids

ATORN®

21748 101
Solid-clamp basic body
Design
Aluminium basic body for interchangeable tool chucks. 4 x 90° indexable mounts. Low force application thanks to optimum ergonomics.
Applications
Accident-proof mounting and removal of cutting tools and mounts.

21748 103-113
Solid-clamp tool chucks

21748 101

21748 103-105

Type	For taper	For size	21748 ...
Basic body	-	-	101
Tool chuck	SK/MAS-BT/CAT	30	103
Tool chuck	SK/MAS-BT/CAT	40	104
Tool chuck	SK/MAS-BT/CAT	50	105
Tool chuck	HSK-A	40	106
Tool chuck	HSK-A	50	107
Tool chuck	HSK-A	63	108
Tool chuck	HSK-A	80	109
Tool chuck	HSK-A	100	110
Tool chuck	VDI	30	111
Tool chuck	VDI	40	112
Tool chuck	VDI	50	113

39385 Tool presetters ATORN IC basic

Design
The ImageController basic is a professional entry model to the world of tool presetters. The table-top unit with ImageController basic is simple to operate and returns precise measurement results thanks to thorough checks and high-quality brand components. Pressing the unique EZclick rotary/push-button starts standard measuring functions such as length, diameter, concentricity and axial runout.
Delivery does not include a workbench.

Advantages and benefits for you:
- Speedy familiarisation with minimal training thanks to easy operation
- High-precision spindle SK 50 with integrated calibration balls
- Fast measurement, setting and testing of tools (length and diameter)
- EZmax software function for easy creation of tool contours
- Various measurement programs make it incredibly easy to measure variables such as concentricity and axial runout on the tool blades
- Quick and convenient printing of measurement results on labels (optional)
- One-handed control button for fast, simultaneous positioning of the Z and X axes
- Data output via RS232 interface

Note:
Cardboard packaging (no. 39385 411) is mandatory when ordering a tool presetter.
For accessories, see art. no. 39388–39389.

39385 501-503

39385 405

39385 412

Type	Measuring range Z axis mm	Measuring range X axis mm	Spindle	39385 ...
ATORN IC basic 350	350	320	SK 50	501
ATORN IC basic 420	420	420	SK 50	502
ATORN IC basic 600	600	420	SK 50	503
Workbench for IC basic	-	-	-	505 NEW

Accessories	39385 ...
Pneumatic spindle brake	403
Pneumatic spindle indexer	404
Software extension, tool memory	407
Software extension, measurement programs	408
Blade inspection with LED incident light	405

Accessories	39385 ...
Software extension, measurement values	406
Thermal printer for IC basic	412 NEW
Roll of labels, matt white 25 x 75 mm (950 pieces)	413 NEW
Spindle cover for IC basic	410 NEW
Carton packaging for ATORN IC basic 350, 420 and 600	411

39384 Tool presetters ATORN IC 1

Design
The ImageController 1 is a professional entry-level model that functions as an excellent introduction to the world of tool presetters. This tool presetter with ImageController 1 is simple to operate, without the need for extensive training, and provides rapid and precise measurement results. It has been manufactured using high-quality brand components and subjected to stringent inspections. Standard measuring functions such as length, diameter, radius, two blade angles, concentricity and axial runout can be selected and performed quickly and easily using the 13.3-inch touchscreen monitor.
Delivery includes a workbench.

Advantages and benefits for you:
- Speedy familiarisation with minimal training thanks to easy operation
- High-precision spindle SK 50 with integrated calibration balls **including** spindle indexer and spindle brake
- Fast measurement, setting and testing of tool blades (length, diameter, radius, two angles)
- EZmax software function for easy creation of tool contours
- Various measurement programmes, e.g. to measure concentricity and axial runout on the tool blades with µm accuracy
- Fast and convenient printing of measurement results on labels
- One-handed control button for fast, simultaneous positioning of the Z and X axes

Note:
Carton packaging (art. no. 39388 207) is mandatory when ordering a tool presetter.
For accessories, see art. no. 39388–39389.

EZstart:
- Fast and user-independent measurement of multiple parameters on different tool types: Selection of 16 tool types
- Graphic menu for selecting the tool type

39384 501-504

Type	Measuring range Z axis mm	Measuring range X axis mm	Spindle	Snap gauge mm	39384 ...
ATORN IC 1 350	350	320	SK 50	0	501
ATORN IC 1 420	420	420	SK 50	100	502
ATORN IC 1 600	600	420	SK 50	100	503
ATORN IC 1 600/570	600	570	SK 50	0	504

Design
The ImageController 2 measures, stores and documents tool blades in a matter of seconds. It is also possible to save multi-step tools. Image processing using the 13.3 or 24-inch touchscreen monitor of the Image Controller2 is intuitive and guarantees fast and simple measurement procedures.
Delivery includes a workbench.

Advantages and benefits for you:
- Speedy familiarisation with minimal training thanks to easy operation
- High-precision spindle SK 50 with integrated calibration balls including spindle indexer and spindle brake
- Fast measurement, setting and testing of tool blades
- EZmax software function for easy creation of tool contours
- Various measurement programmes, e.g. to measure concentricity and axial runout on the tool blades with µm accuracy
- Fast and convenient printing of measurement results on labels
- One-hand control button for fast, simultaneous positioning of the Z and X axes
- Optional rotation centre camera and automatic focus (art. no. 39387 403)
- Optional data output package (art. no. 39388 206)

Note:
Cardboard packaging (no. 39388 207)
is mandatory when ordering a tool presetter.
For accessories, see art. no. 39388–39389.

39386 501-504

39386 501-504
Design
With 13.3-inch touchscreen

NEW 39386 601-604

39386 601-604
Design
With 24-inch touchscreen

Type	Measuring range Z axis mm	Measuring range X axis mm	Spindle	Snap gauge mm	13.3 inch 39386 ...	24 inch 39386 ...
ATORN IC 2 350	350	320	SK 50	0	501	601 NEW
ATORN IC 2 420	420	420	SK 50	100	502	602 NEW
ATORN IC 2 600	600	420	SK 50	100	503	603 NEW
ATORN IC 2 600/570	600	570	SK 50	0	504	604 NEW

39387 403
Auto focus CNC drive for IC 2 spindle
Design
- Automatic focus on the tool blade via CNC rotation of the spindle to the highest point of the tool blade

39387 403

Accessories	39387 ...
Automatic-focus CNC drive for spindle for ATORN IC 2	403

39388 Accessories for tool presetters

ATORN®

Note:
Further accessories deliverable on request.

Accessories	39388 ...
Optional vacuum clamping device	202
Uni spindle for power-driven tool clamping	217 NEW
Rotation centre measurement camera for ATORN IC 1/IC 2	205
Data output package format generator for ATORN IC 2	206
Post-processor for ATORN IC 2	211
Barcode printer zidCode	214 NEW
Tool identification with fixed scanner	215 NEW
Tool identification with hand-held scanner	216 NEW
Conditioning unit NL1-G 1/8 inch with pressure reducer	203
Q-check device maintenance incl. certificate	213 NEW
Cover	212
Cleaning agent	210
Work surface with keyboard and mouse	218 NEW
Commissioning/training daily rate in Germany	209
Carton packaging for ATORN IC1/IC 2	207
Shipping within Germany	208

39388 202

39388 205

39388 206

39389 Adapter for SK 50 tool presetters

ATORN®

Note:
Other adapters (e.g. Capto) deliverable on request.

39389 201-202
Adapter SK 50/steep taper SK
- For mounting tool shanks with steep taper DIN 69871-1
- Integrated calibration balls

39389 203-209
Adapter SK 50/VDI straight shank with manual tool holder clamp
- For mounting tools with VDI straight shanks DIN 69880
- Integrated calibration balls

39389 210-216
Adapter SK 50/hollow shank taper HSK with manual offset clamp
- For mounting tool shanks with hollow shaft taper DIN 69893 and with and without cooling tubes
- Flat contact surface for HSK tool chuck
- Integrated calibration balls

39389 217-220
Adapter SK 50/hollow shank taper HSK without tool clamp
- For mounting tool shanks with hollow shaft taper DIN 69893
- Flat contact surface for HSK tool chuck
- Integrated calibration balls

Size	39389 ...
SK 30	201
SK 40	202
VDI 16	203
VDI 20	204
VDI 25	205
VDI 30	206
VDI 40	207
VDI 50	208
VDI 60	209
HSK A25-F32	210
HSK A32-F40	211
HSK A40-F50	212
HSK A50-F63	213
HSK A63-F80	214
HSK A80-F100	215
HSK A100-F125	216
HSK A32-F40	217 NEW
HSK A40-F50	218 NEW
HSK A50-F63	219 NEW
HSK A63-F80	220 NEW

39389 201-202

39389 203-209

39389 210-216

39389 217-220

21195 Label holders

HHW

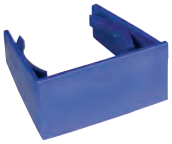
Design
- Clear arrangement in tool cabinet
- Avoid mistakes when selecting tools
- Prevent additional measuring work
- Reduce set-up time

Applications
For SK 40/HSK 63 chucks. Affix with a label or write directly on it.

Type	Colour		21195 ...
SK 40/HSK 63	Green	10 pieces	101
SK 40/HSK 63	Blue	10 pieces	102
SK 40/HSK 63	Red	10 pieces	103
SK 40/HSK 63	Yellow	10 pieces	104
SK 40/HSK 63	Black	10 pieces	105
SK 40/HSK 63	White	10 pieces	106

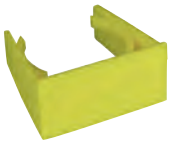
21195 101

21195 102



21195 103

21195 104



21195 105

21195 106

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21766 Zero point sensor

Design
Define the reference point in the axial direction of the machine spindle (e.g. for milling) quickly and easily. Place the device on the workpiece and move the tool (e.g. cutter) on the sprung sensor surface until both dial gauge needles point to 0. The lower edge of the tool will now be exactly 50 +/- 0.01 mm above the surface of the workpiece. The dimension 50 mm is entered into the machine control unit. The basic body and the sensor insert of the instrument are case-hardened HRC 60 +/- 1. **Supplied with test log in a wooden case.**

21766

Resolution of the dial gauge mm	Height of the sprung sensor surface mm	Sensor surface Ø mm	Housing Ø mm	21766	...
0.01	49.5–50	47	65		**101**

21764 Test arbors (check mandrels)

diebold

Design
- Taper shank more accurate than AT3
- Case-hardening steel (56+4 HRC); ground
- **Delivered in wooden case**

Applications
For aligning and checking tool spindles.

21764

Taper	Shank version	Ø D mm	Effective measuring length L mm	Concentricity and Ø tolerance mm	21764	...
SK 40	DIN 69871	40	320	0.003		**301**
SK 50	DIN 69871/BT	40	320	0.003		**302**
HSK 63	DIN 69893	40	346	0.003		**303**

21767 JCP1 edge finder

RENISHAW

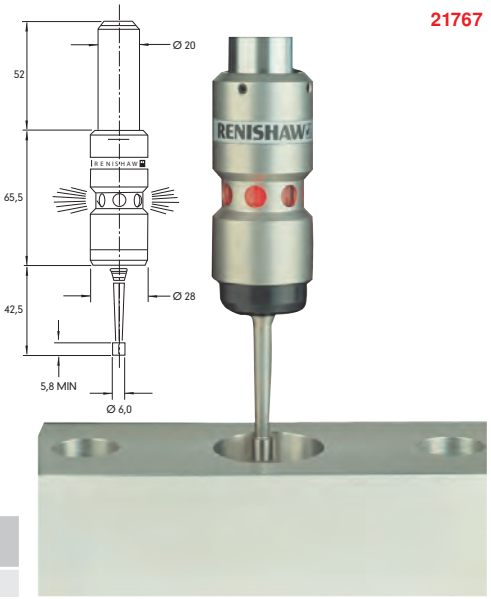
Design
The battery-powered edge finder made by Renishaw is placed in the collet chuck or milling cutter holder. As soon as the stylus touches a workpiece, the red lamp lights up.

Applications
Only conductive materials can be detected. The edge finder can be used to measure different criteria and determine zero points of workpieces on all manual and CNC-controlled machine tools.

Criteria: Measuring the inside or outside, determining bore centre points centred on the work spindle, measuring reference edges, measuring height and depth. Repeat accuracy 0.001 mm. Overrun X, Y:15 mm, Z: 5 mm. Degree of protection: IP 44.

Note:
For replacement batteries, see HHW catalogue Volume 2 (tools + machines) art.-no. 39900.

21767



	21767	...
		101

21768 Universal 3D sensors

IP 67

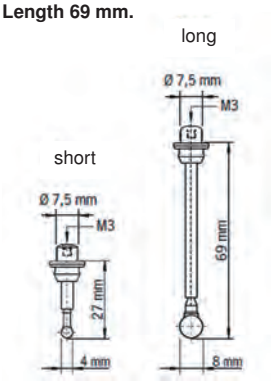
ATORN®

21768 101
Universal 3D sensors
Design
Proven mechanics in metal design, compact construction, dust-proof and watertight, convenient concentricity adjustment, scale for radial and axial sensing.
Technical data:
Clamping shank: 20 mm,
Reading accuracy: 0.01 mm,
Sensor ball diameter: 4 mm.
Scope of delivery:
Includes short probe insert.
Applications
For determining workpiece zero points, measuring lengths, bores, bore centres and reference edges.

Note:
Milling cutter holder, extra short DIN 69871 AD (ISO 7388-1), diameter 20 mm, A = 35 mm, see art. no. 21632 132.

21768 102
Probe insert, short, diameter 4 mm, Length 27 mm.

21768 103
Probe insert, long, diameter 8 mm, Length 69 mm.



	21768	...
3D sensor		101
Probe insert, short		102
Probe insert, long		103

21765 3D small edge finder ZERO MASKER

IP 67

HAIMER
Design
- Small compact design
- Accuracy 0.01 mm
- Incl. short probe insert
- Suitable for use in confined spaces or for small HSK or SK 30 spindles

Applications
Sensing edges and bores.
Setting zero points.

Note:
Replacement probe, see art. no. 21768 102–103.

Total length mm	Length without clamp shaft mm	Clamping shaft Ø mm	Housing Ø mm	Reading mm	21765	...
120.8	96	10	49	40		101

21769 Digital 3D probe

IP 67

Design
A further development of the proven mechanical 3D probe. The approach process can be accurately monitored on the digital dial. The dial has a 0.001-mm display with large digits and mm/inch changeover and is dust-proof and splash-proof.

Note:
Milling cutter holder, extra short, DIN 69871 AD, diameter 20 mm, A = 35 mm, see art. no. 21631 206. Suitable probe inserts. see art. no. 21768 102+103.

Measuring accuracy mm	Clamping shaft Ø mm	Housing diameter mm	21769	...
0.005	20	65		201

21770 - 21771 Edge finders

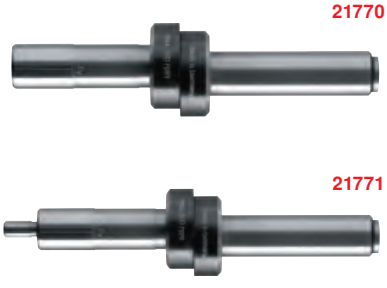
Design
All parts are hardened, clamping and functional surfaces are ground, partly lapped. The probe head is flexibly connected to the clamp shaft by a tension spring.

Applications
For determining zero lines.

21770 203
Design
With a **single** probe head.

21771 205
Design
With a **dual** probe head.

21771 500
Spare spring
Applications
For art no. 21770–21771.



	Probe head Ø mm	Straight shank Ø mm	Package = unit	21770	...	21771	...	21771	...
Edge finder, single	10	10	-		203				
Edge finder, dual	10 + 4	10	-				205		
Spare spring	-	-	10						500

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21772 Electric edge finder 2D/3D

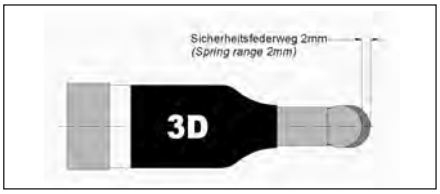
Design
- With all-round illuminated display
- The ball is spring-mounted and pushes away when passing the reference edge
- Accuracy +/- 0.01 mm
- Standard equipment: Edge finder with battery

Applications
For determining the spindle centre for a workpiece.
For internal and external centring.

Note:
Spare batteries, see HHW catalogue Volume 2 (tools and machinery) art. no. 39900 215.

21772 101

21772 102



Type	Shank Ø mm	Total length mm	Ball Ø mm	Battery V	21772	...
2D	20	160	10	1 x 12.0		101
3D	20	108	10	1 x 12.0		102

21773 Centring device DIACATOR

DIACATOR

21773

Design
- With built-in, upright dial gauge and rotating probe
- Max. centring error 0.006–0.01mm depending on the probe
- Built-in overload clutch to prevent damage
- Mounted on removable Morse taper shank MK 1 (use reducers if the inner taper is larger) or on cylindrical shank (8 mm diameter)
- Includes swivelling probe for smaller bores, two angled probe inserts (25 and 48 mm), one reducing sleeve MK 1, three screw-on spacer sleeves (10, 12 and 16 mm), one stop (160 mm) and dial, in a wooden case

Applications
For the exact central alignment of bores and shafts on the working spindle on milling machines, drilling machines and drills.

Note:
Special probes in the lengths 100, 125, 150 and 200 mm are deliverable on request.

Measuring range for inner Ø mm	Measuring range for outer Ø mm	21773	...
1.5–120	5.0–110		101

21774 Centring device CENTRO

21774 101
Design
- Highly accurate centring device with upright dial gauge
- Centring accuracy 0.003 mm
- For use with probe insert no. 21774 102.

Applications
For aligning bores.

Note:
The spindle speed should not exceed 150 rpm. Concentricity errors in the spindle and clamping will be compensated.

21774 102
Probe insert
- Straight
- With ball diameter 5 mm

21774 103
Probe insert
- Bent
- With ball diameter 5 mm

21774 104
Probe insert
- Straight
- With ball diameter 2 mm

Applications
For small bores.

21774 101

21774 102

21774 103

Type	Measuring range inner Ø mm	Measuring range outer Ø mm	Shank diameter mm	21774	...
CENTRO	3–125	0–125	16		101
Probe insert, straight, ball Ø 5 mm	-	-	-		102
Probe insert bent, ball diameter 5 mm	-	-	-		103
Probe insert, straight, ball Ø 2 mm	-	-	-		104

21775 Precision centring device Centricator

Centricator

Applications
For centring, positioning, aligning, adjusting, checking, probing flat surfaces and edge finding with a working accuracy of 2 µm. The high-precision mechanics with circumferential probe and stationary dial gauge form the heart of the device.

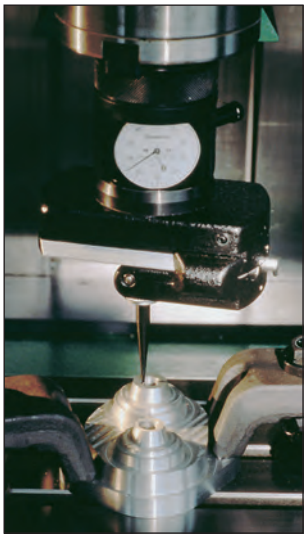
Note:
Deliverable with interchangeable straight shanks on request.

21775 201
Precision centring device CO-S
Design
- Fixed clamping shank, 16 mm diameter
- Dial gauge with 0.005 mm reading accuracy
- 1 probe insert ball, diameter 5 mm (for bores)
- 1 bent probe insert, ball diameter 5 mm (for shafts)
- In case

21775 204
Precision centring device C III-S
Design
- Fixed clamping shank, 16 mm diameter
- Dial gauge with 0.005 mm reading accuracy
- 1 probe insert ball, diameter 5 mm (for bores)
- 1 x hexagonal screwdriver SW 3
- Vial of watch oil no. 5
- In wooden device case

21775 201

21775 204



Type	Dial gauge reading accuracy mm	Sensing range inner diameter mm	Sensing range outer diameter mm	Flat faces mm	Probe depth inner diameter mm	Probe depth outer diameter mm	21775 ...
CO-S	0.005	6–125	0–125	120–160	55	20	201
C III-S	0.005	2–400	0–300	0 - 480	150	150	204

21776 Individual accessory

Applications
For art. no. 21775.

21776 102
Edge finder
Applications
For positioning the working spindle axis using workpiece edges or corners.

21776 103
Probe insert
Design
Straight, ball diameter 1.6 mm.
Applications
For centring bores smaller than 6 mm.

	21776 ...
Edge finder	102
Probe insert	103

21776 102

21776 103

21777 Accessory set

Design
Comprising:
- **Probe insert,** ball diameter 1.6 mm for centring bores smaller than 6 mm
- **Angle probe insert,** ball diameter 2.5 mm for aligning surfaces from 90 mm to 280 mm diameter
- **Extensions** to enlarge the working area
- **Flat face probe,** ball diameter 5.0 mm

Applications
For **Type C III-S** no. 21775 204 and 205.

	21777 ...
	101

21777

21780 Articulated measuring stand

Design
Mechanical central clamping for all joints, infinitely adjustable clamping force, any position within the action radius can be achieved. Dial gauge mount with 8-mm shank diameter, length = 40 mm for direct mounting in the machine (collet chuck!).
Applications
For lever gauge measuring instruments. Used for: workpiece positioning, centring bores/pins, aligning workpieces, hard-to-reach places.

Note:
Lever gauge probes, see HHW catalogue Volume 2 (tools + machines) art. no. 33245 et seq.

21780

Action radius approx. mm	21780 ...
150	201

21635 Replacement screws for Weldon

DIN 1835 B

21635

Thread	For diameter mm	21635 ...
M 6	6	601
M 8	8	602
M 10	10	603

Thread	For diameter mm	21635 ...
M 12	12+14	604
M 14	16+18	605
M 16	20	606

Thread	For diameter mm	21635 ...
M 18 x 2	25	607
M 20 x 2	32+40	608

21636 Saw blade mounts

Design
With straight shank for mounting on surface chucks, high degree of concentricity.
Applications
For mounting saw blades with diameters of 20–100 mm and saw blade thickness of 0.2–6 mm (see art. no. 17002–17008 and 17030–17031).

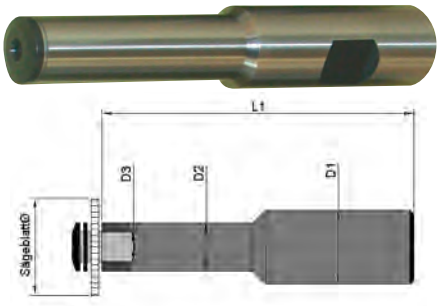
Note:
Saw blade not included in delivery.

21636 300
Design
Set, six pieces, consisting of all sizes of art. no. 21636 301–306, incl. case.

21636 301-308
Design
Individual.

21636 300

21636 301-308



Set contents	Mount Ø mm	Set 21636 ...
Six pieces	20/25/32/40/50/63	300

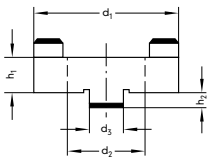
For saw blade Ø mm	L1 mm	Ø D1 mm	Ø D2 mm	Ø D3 mm	Individual 21636 ...
20	94	20	10.0	5	301
25	104	20	13.0	8	302
32	110	20	16.0	8	303
40	114	20	19.5	10	304
50	141	25	24.5	13	305
63	141	25	24.5	16	306
80	160	25	34.0	22	307
100	160	25	39.5	22	308

21655 Driving rings

DIN 6366

Applications
For combined mill arbors, art. no. 21648–21650.

21655



For mill arbor Ø d_2 mm	h_1 mm	d_3 mm	h_2 mm	d_1 mm	21655 ...
16	10	8	5.0	32	202
22	12	10	5.6	40	203
27	12	12	6.3	48	204
32	14	14	7.0	58	205
40	14	16	9.0	70	206

21656 Cutter retaining screws

DIN 6367

Design
Without bore.

Applications
For combination mill arbors, blade head supports and cutters with lateral grooves.

21656

For mill arbors with pin Ø mm	Retaining screw thread	21656 ...
10	M 5	101
13	M 6	102
16	M 8	103
22	M 10	104
27	M 12	105
32	M 16	106
40	M 20	107

21657 Key for cutter retaining screws

DIN 6368

Design
Hardened special steel with burnished finish.

Applications
For tightening cutter retaining screws DIN 6367.

21657

For mill arbors with pin Ø mm	21657 ...
13	102
16	103
22	104
27	105
32	106
40	107

21659 Cutter retaining screws

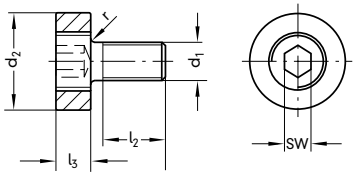
Design
Consisting of a stud bolt with hexagon socket (operated using a hexagonal T-handle wrench and screwed-on threaded ring).

Applications
For mill arbors, blade head supports and cutters with lateral grooves.

Note:
A huge clamping force is generated due to the different pitches of the two threads on the stud bolt.

During the clamping phase, the threaded ring pushes against the face of the mill and no longer rotates with the stud bolt. Prevents damage to the mill and improves concentricity and axial runout accuracy!

21659



For mill arbors with pin Ø mm	Retaining screw thread (d_1)	Thread length (l_2) MM	Hexagon socket SW mm	Threaded ring Ø x thickness (d_2 x l_3) mm	21659 ...
16	M 8	13.0	5	20 x 7	101
22	M 10	14.4	6	28 x 8	102
27	M 12	17.5	8	35 x 9	103
32	M 16	20.5	10	42 x 10	104
40	M 20	24.0	12	52 x 11	105

21667 Mill arbor rings

DIN 2084 B

Design
Turned in steel, hardened, ground flat and lapped.
Keyway DIN 138.

21667

Bore	16 mm		22 mm		27 mm		32 mm		40 mm		50 mm	
Ring width mm	21667	...	21667	...	21667	...	21667	...	21667	...	21667	...
2		111		121		131		141		151		161
3		112		122		132		142		152		162
4		113		123		133		143		153		163
5		114		124		134		144		154		164
6		115		125		135		145		155		165
10		116		126		136		146		156		166
20		117		127		137		147		157		167
30		118		128		138		148		158		168

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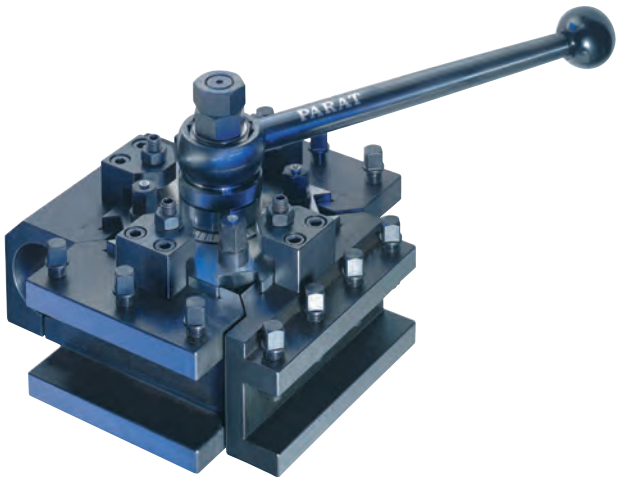
21870 4x turret head (RD)

Design
- Precision manufacture thanks to the high repeatability and turning accuracy (0.005 mm)

No cassette changes:
- Inner and outer adjustment in one clamping position
- Quick clamping device. Type RD has 9° graduations and 40 positions
- Deliverable in four sizes depending on the application
- Up to four tool holders can be clamped at the same time



Applications
For manufacturing high-precision turned parts with a highly accurate tool change system that is easy to use.

Note:
Quick-change holders, see art. no. 21871–21876.

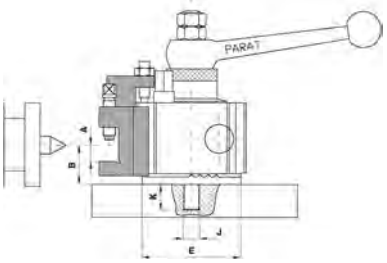
21870 101-104
Parat 4x turret head type RD
Design
- Holds up to 4 tool holders
- Manual swivel
- 9° graduations = 40 engage positions

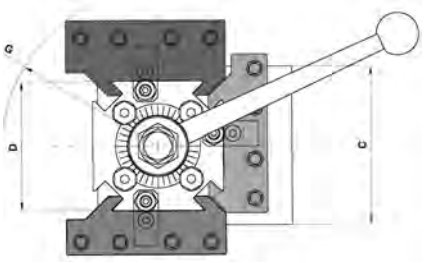
Scope of delivery:
- Spanner
- Cranked box spanner
- Socket wrench

21870 101-104

21870 201-204
Parat 4x turret head with internal cooling type RD/IC
Design
- Holds up to 4 tool holders
- Manual swivel
- 9° graduations = 40 engage positions

Scope of delivery:
- Spanner
- Cranked box spanner
- Socket wrench
- Clamping screw with inner bore
- Cooling hose
- Connecting piece
- Angled piece
- Sealing plug





Technical data for sizing		21870 101+201	21870 102+202	21870 103+203	21870 104+204
Size		**1**	**2**	**3**	**4**
Max. lathe drive power	**KW**	3.7	7.4	14.7	22
Max. lathe chisel cross-section	**A**	20	25	40	50
Cutting edge height	**B**	30	40	60	80
Min. tool carriage width	**C**	90–100	110–150	150–180	200–250
Turret head (square basic body)	**D**	84	106	134	154
Indexing disc with protective ring Ø	**E**	80	102	133	150
Turning circle with tool holder Ø	**G**	180	240	300	350
Clamping screw in support	**J**	M 14 x 2	M 16 x 2	M 20 x 2.5	M 24 x 3
Thread length mm	**K**	21	25	30	35
Approx. weight (without tool holder)	**kg**	3.5	6.5	15	22

	Type RD		Type RD/IC	
Size	**21870**	**...**	**21870**	**...**
1		**101**		**201**
2		**102**		**202**
3		**103**		**203**
4		**104**		**204**

21871 - 21876 Quick-change holders

PARAT

Applications
Accessories for art. no. 21870.

21871
Quick-change holder type WD
Applications
For internal and external machining.

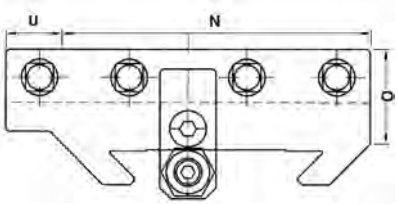
21872
Quick-change holder type WDL
Applications
For internal machining.

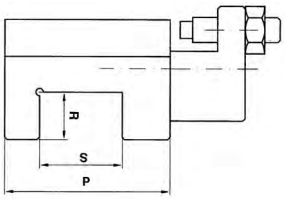
21873
Quick-change holder type WDR
Applications
For external machining.

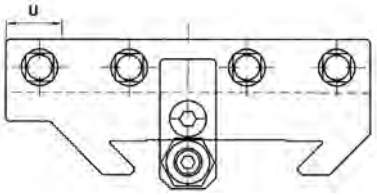
21874
Quick-change holder type WDPL
Applications
For boring bars.

21875
Quick-change holder type WB
Applications
For mounting clamping sleeves (see art. no. 21877–21878).

21876
Quick-change holder type WBW (blank)
Applications
With soft, unfinished clamping side for fitting special tools.

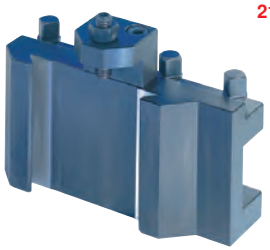






21871

21872

21873


21874

21875

21876

Type	Size	N	O	P	R	S	U	kg
WD	1/12	84	24	47	14	22	-	0.7
WDL/WDR	1/12	100	24	47	14	22	16	0.8
WD	1/20	84	33	52	20	22	-	0.8
WDL/WDR	1/20	100	33	52	20	22	16	0.9
WDPL	1/12	100	28	47	16	22	16	0.9
WB/WBW	1/30	84	39	47	30	-	-	0.8
WD	2/25	110	36	66	19	33	-	1.9
WDL/WDR	2/25	130	36	66	19	33	20	2.1
WDPL	2/25	130	50	62	31	33	20	2.3
WB/WBW	2/40	110	51	63	40	-	-	1.8
WD	3/32	140	44	76	25	33	-	3.0
WDL/WDR	3/32	165	44	76	25	33	25	3.4
WDPL	3/32	165	53	66	31	33	25	3.6
WD	3/40	140	44	76	25	43	-	3.1
WDL/WDR	3/40	165	44	76	25	43	25	3.4
WB/WBW	3/40	140	53	66	40	-	-	2.7
WB/WBW	3/50	140	63	76	50	-	-	3.5
WD	4/40	160	53	96	30	44	-	5.0
WDL/WDR	4/40	190	53	96	30	44	30	5.8
WDPL	4/40	190	63	96	40	52	30	6.5
WD	4/50	160	63	96	40	54	-	5.5
WDL/WDR	4/50	190	63	96	40	54	30	6.0
WB/WBW	4/60	160	77	96	60	-	-	6.0

		Type WD		Type WDL		Type WDR		Type WDPL	
Size	for Turret head/size	21871	...	21872	...	21873	...	21874	...
1/12	Type RD/1 and type UD/1			101		101		101	101
1/20	Type RD/1 and type UD/1			102		102		102	
2/25	Type RD/2 and type UD/2			103		103		103	102
3/32	Type RD/3 and type UD/3			104		104		104	103
3/40	Type RD/3 and type UD/3			105		105		105	
4/40	Type RD/4 and type UD/4			106		106		106	105
4/50	Type RD/4 and type UD/4			107		107		107	

		Type WB		Type WBW	
Size	for Turret head/size	21875	...	21876	...
1/30	Type RD/1 and type UD/1			101	101
2/40	Type RD/2 and type UD/2			102	102
3/40	Type RD/3 and type UD/3			103	103
3/50	Type RD/3 and type UD/3			104	104
4/60	Type RD/4 and type UD/4			105	105

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

21877 - 21878 Clamping sleeves

21877
Design
Clamping sleeves for quick-change holder type WB (see art. no. 21875).

Applications
For mounting tools with an MK shanks.

For Quick-change holder	MK	21877 ...
Type WB 1/30	1	101
Type WB 1/30	2	102
Type WB 2+ 3/40	3	103
Type WB 2+ 3/40	4	104

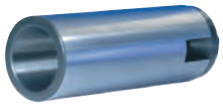
For Quick-change holder	MK	21877 ...
Type WB 3/50	3	105
Type WB 3/50	4	106
Type WB 4/60	4	107
Type WB 4/60	5	108

21878
Design
Clamping sleeves, slotted for quick-change holder type WB (see art. no. 21875).

Applications
For mounting tools with straight shanks.

For Quick-change holder	Inner Ø mm	21878 ...
Type WB 1/30	8	101
Type WB 1/30	10	102
Type WB 1/30	12	103
Type WB 1/30	15	104
Type WB 1/30	16	105
Type WB 1/30	20	106
Type WB 1/30	25	107
Type WB 2+ 3/40	10	109
Type WB 2+ 3/40	12	110
Type WB 2+ 3/40	15	111
Type WB 2+ 3/40	16	112
Type WB 2+ 3/40	20	113
Type WB 2+ 3/40	25	114
Type WB 2+ 3/40	32	115
Type WB 3/50	20	117
Type WB 3/50	25	118
Type WB 3/50	32	119
Type WB 3/50	40	120
Type WB 4/60	25	123
Type WB 4/60	32	124
Type WB 4/60	40	125

21877



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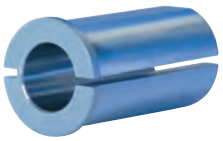


22950 - 22955 Wiper

Design
- Made from impact-resistant plastic with fleece lining inserted in grooves and thus secured against rotation
- Excellent resistance to oil and grease
- High tolerance conformity

Applications
For fast and thorough cleaning of tool chucks.

22950
For Morse tapers.

22951
For steep tapers.

22955
For HSK tool chucks.

22950

22951

22955

For taper MK	22950 ...
1	301
2	302
3	303
4	304
5	305

For taper SK	22951 ...
30	201
40	202
50	203

For taper HSK	22955 ...
40	102
50	103
63	104
80	105
100	106

Info — Quick-change steel holder cat. no. 21880 - 21898

ATORN®

Steel holder head and replacement holder, profile-ground. Height adjustment of the steel by knurled screw on the steel holder without underlaying of support shims. Repeat accuracy 0.01 mm. Easy release and locking of the respective tool holder by eccentric clamping lever. 40 possible angle settings of the tools. Simple operation – short set-up times!

Assembly on the lathe:
The steel holder head with ground toothing is secured with the support screw. To do this, the centring disc must be unscrewed to the dimension (fit not required) of the support screw. It is recommended that the steel holder head is aligned with the the clamped boring bar holder and the boring bar at right angles to the face plate. The steel holder head is secured by 2 dowel pins in the support. The mark is then set to 0 and the nut of the support screw is tightened accordingly.

When selecting the size, please note:
1. Drive power of the lathe.
2. Required minimum dimension x.
3. The length of the replacement holder l should correspond as far as possible to the width z of the top support.
4. The steel height h to be used. Together with the steel height y and the space remaining below it, this gives the required dimension x (see table).

Example of size selection:

Drive power of the machine		KW	6
Turning diameter of the machine		mm	500
Slide width	z	mm	145
Steel height	h	mm	30
Cutting edge height	x	mm	45

Required:

Steel holder head	Size B	(Cat. no. 21880 104)
Replacement holder	Type B D 32 x 140	(Cat. no. 21882 211)
Replacement holder	Type B H 30 x 130	(Cat. no. 21884 204)
Replacement holder	Type B J 40 x 120	(Cat. no. 21886 205)
Replacement holder	Type BA-A2a	(Cat. no. 21896 203)

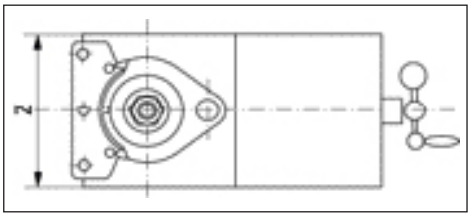
Required minimum dimension x for steel height h:

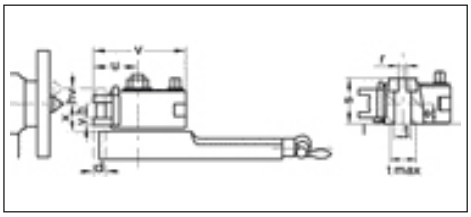
The hole in the centring disc must be increased to the dimension of the clamping screw.

Size	Aa	A		E		B		C			D 1		
Steel height	x	x		x		x		x			x		
h mm	D 12	D 16	D 20	D 20	D 25	D 25	D 32	D 32	D 40	D 45	D 40	D 50	D 63
6	12												
8	14	18											
10	16	20	20	20	22								
12	18	22	22	22	24	24	25						
16		26	26	26	28	28	29	31	32.5	32.5			
20				30	32	32	33	35	36.5	36.5			
25					37	37	38	40	41.5	41.5	45		
32							45	47	48.5	48.5	52	52	52
40									56.5	56.5	60	60	60
45										61.5		65	65
50												70	70
63													83

Technical data:

Art. no. 21880...	101	102		103		104		105			106		
Size	Aa	A		E		B		C			D 1		
Replacement holder size	D 12	D 16	D 20	D 20	D 25	D 25	D 32	D 32	D 40	D 45	D 40	D 50	D 63
Drive power of the machine approx. kW	1.2	2.2		5.0		6.6		13.2			22.0		
Turning diameter of the machine mm	120-220	150-300		200-400		300-500		400-700			600-1000		
Slide width max. z mm	80	100		120		150		180			200		
Cutting edge height min. x mm	h + y	h + y		h + y		h + y		h + y			h + y		
Cutting edge height max. mm	x + hv	x + hv		x + hv		x + hv		x + hv			x + hv		
Height adjustability hv mm	8	11		17	15	20	11	40	35	30	35	30	20
Steel support y mm	6.2	9.1	10.1	10.5	12	12	13.5	17	18	18		20.5	
Support width for working steel d mm	10	14	16	16	20	20		21	30.5	30.5	30	34	40
Height of working steel max. h mm	12	16	20	20	25	25	32	32	40	45	40	50	63
Total width max. v mm	70	100		125		150		192	202	202	230	234	242
Total height s mm	32	54		68		75		105			122		
Overhang max. u mm	30	48		60		71		92	102	102	112	117	124
Hole normal t mm	12	20		20		32		40			40		
Hole max. t mm	12	32		42		51		74			82		
Depth of hole max. e mm	-	35		35		45		75			75		
Weight without replacement holder kg	0.34	1.2		3.5		4.5		10.7			18.0		





Clamping technology

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21880 Steel tool holder heads

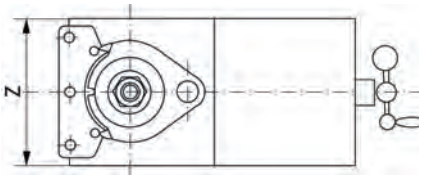
ATORN®

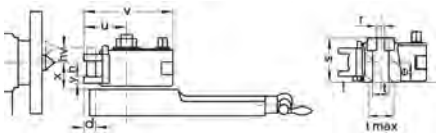
Applications
For mounting tool holders.

Note:
For technical data, see info on quick-change steel tool holder on previous page.
For spare parts, see art. no. 21898.

21880

Size	21880 ...
Aa	101
A	102
E	103
B	104
C	105
D 1	106

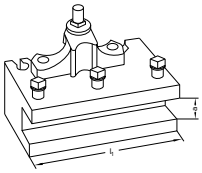




21882 Tool holder D

ATORN®

Applications
For mounting square lathe tools.



21882

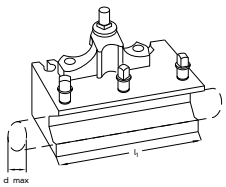
Type	For size	a mm	l_1 mm	21882 ...
Aa D 12 x 50	Aa	12	50	201
A D 20 x 75	A	20	75	204
A D 20 x 90	A	20	90	205
E D 20 x 100	E	20	100	206
E D 25 x 100	E	25	100	207
B D 25 x 120	B	25	120	208
B D 25 x 140	B	25	140	209
B D 32 x 120	B	32	120	210
B D 32 x 140	B	32	140	211

Type	For size	a mm	l_1 mm	21882 ...
C D 32 x 150	C	32	150	212
C D 32 x 170	C	32	170	213
C D 40 x 150	C	40	150	214
C D 40 x 170	C	40	170	215
C D 45 x 170	C	45	170	216
D 1 D 40 x 180	D 1	40	180	217
D 1 D 50 x 180	D 1	50	180	218
D 1 D 63 x 180	D 1	63	180	219

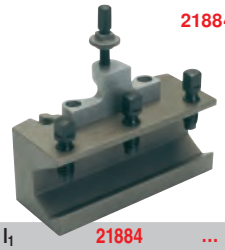
21884 Tool holder H

ATORN®

Applications
For mounting round lathe tools.



21884



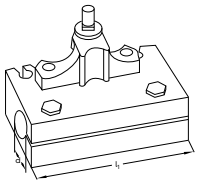
Type	For size	d max mm	l_1 mm	21884 ...
Aa H 12 x 50	Aa	12	50	201
A H 20 x 85	A	20	85	202
E H 30 x 100	E	30	100	203
B H 30 x 130	B	32	130	204

Type	For size	d max mm	l_1 mm	21884 ...
C H 40 x 160	C	40	160	205
C H 50 x 160	C	50	160	206
D 1 H 63 x 180	D 1	63	180	207

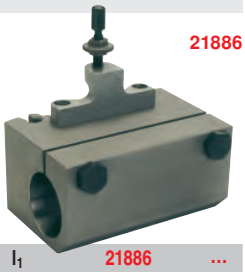
21886 Tool holder J

ATORN®

Applications
For mounting boring bars and round lathe blanks.



21886



Type	For size	Bore d mm	l_1 mm	21886 ...
Aa J 15 x 50	Aa	15	50	201
A J 30 x 80	A	30	80	202
E J 30 x 100	E	30	100	203
E J 40 x 100	E	40	100	204

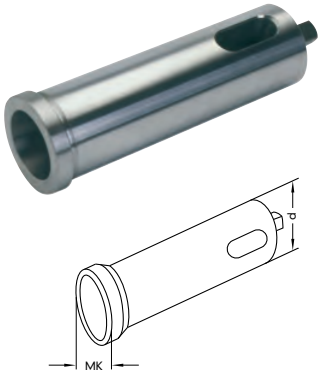
Type	For size	Bore d mm	l_1 mm	21886 ...
B J 40 x 120	B	40	120	205
C J 40 x 160	C	40	160	206
C J 50 x 160	C	50	160	207
D 1 J 63 x 180	d1	63	180	208

21888 Sleeves L

ATORN®

21888

Design
With Inner taper.
Applications
For use in boring bar holder no. 21886.



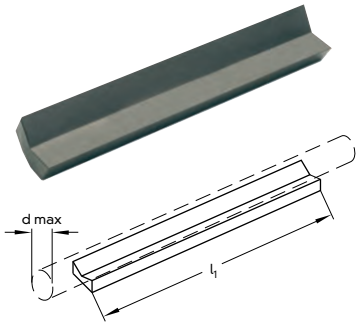
Type	For size	d mm	Taper MK	21888	...
L 30 x 2	A/E	30	2		201
L 40 x 3	E/B/C	40	3		202
L 40 x 4	B/C	40	4		203
L 50 x 3	C	50	3		204
L 50 x 4	C	50	4		205
L 63 x 5	D 1	63	5		206

21894 Prism inserts P

ATORN®

21894

Applications
For tool holder art. no. 21884.



Type	For size	d max. mm	l_1 mm	21894	...
A P 14 x 85	A	14	85		101
E P 14 x 100	E	14	100		102
B P 20 x 130	B	20	130		103
C P 25 x 160	C	25	160		104
C P 32 x 160	C	32	160		105
D 1 P 40 x 180	D 1	40	180		106

21896 Cutting-off tool holder A

ATORN®

21896

Applications
For mounting KOMET cutting-off tools.

Type	For size	COMET size	Cross-section mm	21896	...
AA-AO	A	A0	10 x 2.7		201
EA-AO	E	A0	10 x 2.7		202
BA-A2A	B	A2a	16 x 4/3		203
CA-A3A	C	A3a	18.5 x 5/4		204

21898 Spare parts for steel tool holders

ATORN®

21898

Applications
For art. no. 21880–21886 and 21896.

Description	For steel tool holder type	21898	...
Tension lever SW 8 mm	Aa		201
Tension lever SW 12 mm	A		202
Tension lever SW 17 mm	E/B/C		203
Tension lever SW 22 mm	D 1		204
Square socket screw	Aa		210
Square socket screw	A/E		211
Square socket screw	B		212
Square socket screw	C/D 1		213
Height adjustment screw with nut	Aa		301
Height adjustment screw with nut	A		302
Height adjustment screw with nut	E		306
Height adjustment screw with nut	B		303
Height adjustment screw with nut	C		304
Height adjustment screw with nut	D 1		305

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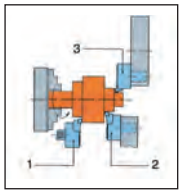
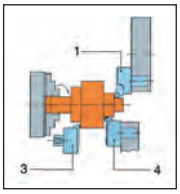
Info — VDI tool chucks in accordance with DIN 69880

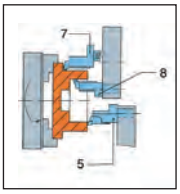
20 MnCr5 hardened to 60 +/- 2 HRC. All functional surfaces ground.
With ball spray nozzle and threaded connection for tube fittings.



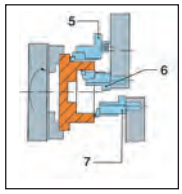
1 shape B1 and B5
2 shape B2 and B6



3 shape B3 and B7
4 shape B4 and B8



5 shape C1
6 shape C2



7 shape C3
8 shape C4

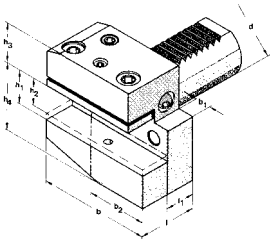
21903 - 21904 — Square traverse mount shape B1/B2

DIN 69880

Design
Short version.
Applications
For external machining. For square tools.

21903
Design
Shape B1, radial, right.

21904
Design
Shape B2, radial, left.



21903

Shank d mm	b mm	b_1 mm	b_2 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	21903	...	21904	...
20	55	7.0	30.0	16	12	25.0	30	30	16		310		110
30	70	10.0	35.0	20	16	28.0	38	40	22		311		111
40	85	12.5	42.5	25	20	32.5	48	44	22		312		112
50	100	16.0	50.0	32	25	35.0	60	55	30		313		113

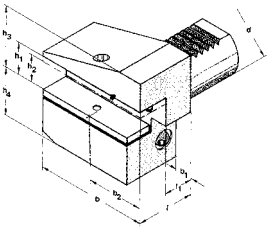
21908 - 21909 — Square traverse mount shape B3/B4

DIN 69880

Design
Short version.
Applications
For overhead work. For square tools.

21908
Design
Shape B3, radial, right.

21909
Design
Shape B4, radial, left.



21908

Shank d mm	b mm	b_1 mm	b_2 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	21908	...	21909	...
20	55	7.0	30.0	16	12	30	25.0	30	16		310		110
30	70	10.0	35.0	20	16	38	35.0	40	22		311		111
40	85	12.5	42.5	25	20	48	42.5	44	22		312		112
50	100	16.0	50.0	32	25	60	50.0	55	30		313		113

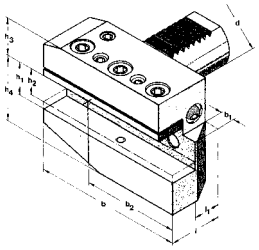
21905 - 21906 — Square traverse mount shape B5/B6

DIN 69880

Design
Long version.
Applications
For external machining. For square tools.

21905
Design
Shape B5, radial, right.

21906
Design
Shape B6, radial, left.



21905

Shank d mm	b mm	b_1 mm	b_2 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	21905	...	21906	...
30	100	15.0	65.0	20	16	28.0	38	40	22		311		111
40	118	12.5	65.5	25	20	32.5	48	44	22		312		112
50	130	16.0	80.0	32	25	35.0	60	55	30		313		113

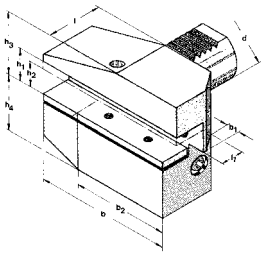
21911 - 21912 Square traverse mount shape B7/B8

DIN 69880

Design
Long version.
Applications
For overhead work. For square tools.

21911
Design
Shape B7, radial, right.

21912
Design
Shape B8, radial, left.



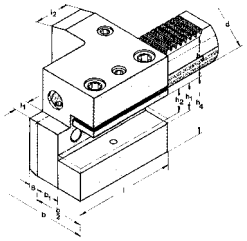
21911

Shank d mm	b mm	b_1 mm	b_2 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	21911 ...	21912 ...
30	100	15.0	65.0	20	16	38	35.0	40	22	**311**	**111**
40	118	12.5	65.5	25	20	48	42.5	44	22	**312**	**112**
50	130	16.0	80.0	32	25	60	50.0	55	30	**313**	**113**

21915 Square longitudinal mount shape C1

DIN 69880

Design
Short version, **shape C1,** axial, right.
Applications
For face recessing. For square tools



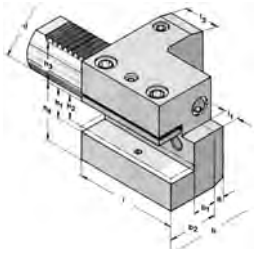
21915

Shank d mm	b mm	b_1 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	l_2 mm	21915 ...
20	52	25.5	16	12	25.0	30	50	-	30	**310**
30	70	17.0	20	16	28.0	38	70	10.0	30	**311**
40	85	20.5	25	20	32.5	48	85	12.5	30	**312**
50	100	25.5	32	25	35.0	60	100	16.0	40	**313**

21916 Square longitudinal mount shape C2

DIN 69880

Design
Short version, **shape C2,** axial, left.
Applications
For face recessing. For square tools.



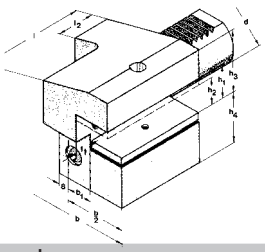
21916

Shank d mm	b mm	b_1 mm	b_2 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	l_2 mm	21916 ...
20	65	26.0	40.0	16	12	25.0	30	50	-	30	**110**
30	76	23.0	41.0	20	16	28.0	38	70	10.0	30	**111**
40	90	25.5	47.5	25	20	32.5	48	85	12.5	30	**112**
50	105	30.5	55.0	32	25	36.0	60	100	16.0	40	**113**

21918 Square longitudinal mount shape C3

DIN 69880

Design
Short version, **shape C3,** axial, right.
Applications
For overhead face recessing. For square tools.



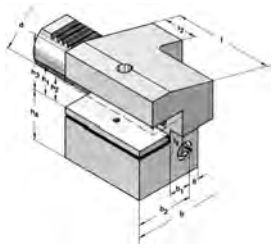
21918

Shank d mm	b mm	b_1 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	21918 ...
20	52	13	16	12	30	25.0	50	-	**310**
30	70	17	20	16	38	35.0	70	10.0	**311**
40	85	21	25	20	48	42.5	85	12.5	**312**
50	100	26	32	25	60	50.0	100	16.0	**313**

21919 Square longitudinal mount shape C4

DIN 69880

Design
Short version, **shape C4,** axial, left.
Applications
For overhead face recessing. For square tools.



21919

Shank d mm	b mm	b_1 mm	b_2 mm	h_1 mm	h_2 mm	h_3 mm	h_4 mm	l mm	l_1 mm	l_2 mm	21919	...
20	65	26.0	43.0	16	12	30	25.0	50	-	30		**110**
30	76	23.0	41.0	20	16	38	35.0	70	10.0	30		**111**
40	90	25.5	47.5	25	20	48	42.5	85	12.5	30		**112**
50	105	30.5	50.0	32	25	60	50.0	100	16.0	40		**113**

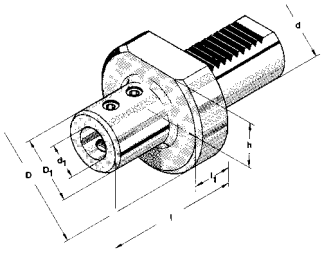
21920 Indexable insert drill mounts shape E1

DIN 69880

Design
With internal coolant supply, **shape E1,** axial.

Applications
For mounting indexable insert drills.

21920

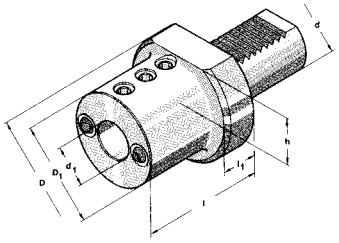


Shank d mm	d_1 mm	D mm	D_1 mm	h mm	l mm	l_1 mm	Bore depth mm	21920	...
20	20	50	40	22.0	60	18	54		**201**
20	25	50	45	22.0	66	18	59		**202**
30	20	68	40	28.0	66	22	54		**203**
30	25	68	45	28.0	71	22	59		**204**
30	32	68	52	28.0	75	22	63		**205**
40	20	83	40	32.5	66	22	54		**206**
40	25	83	45	32.5	71	22	59		**207**
40	32	83	52	32.5	75	22	63		**208**
40	40	83	60	32.5	85	22	73		**209**
50	20	98	40	35.0	66	30	54		**210**
50	25	98	45	35.0	71	30	59		**211**
50	32	98	52	35.0	75	30	63		**212**
50	40	98	60	35.0	85	30	73		**213**

21922 Boring bar mounts shape E2

DIN 69880

Design
With coolant supply via nozzles, **shape E2,** axial.
Applications
For mounting boring bars.



21922

Shank d mm	d_1 mm	D mm	D_1 mm	h mm	l mm	l_1 mm	21922	...
20	8	50	40	25.0	50	15		**101**
20	10	50	40	25.0	50	15		**102**
20	12	50	40	25.0	50	15		**103**
20	16	50	44	25.0	50	15		**104**
20	20	50	49	25.0	50	-		**105**
20	25	50	54	25.0	50	-		**106**
30	8	68	50	28.0	60	21		**107**
30	10	68	50	28.0	60	21		**108**
30	12	68	50	28.0	60	21		**109**
30	16	68	55	28.0	60	21		**110**
30	20	68	55	28.0	60	21		**111**
30	25	68	55	28.0	60	21		**112**
30	32	68	68	28.0	75	-		**113**
40	8	83	50	32.5	75	21		**114**

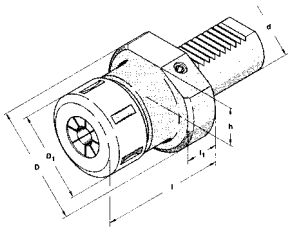
Shank d mm	d_1 mm	D mm	D_1 mm	h mm	l mm	l_1 mm	21922	...
40	10	83	50	32.5	75	21		**115**
40	12	83	50	32.5	75	21		**116**
40	16	83	55	32.5	75	21		**117**
40	20	83	55	32.5	75	21		**118**
40	25	83	60	32.5	75	21		**119**
40	32	83	72	32.5	75	21		**120**
40	40	83	83	32.5	85	-		**121**
50	12	98	56	35.0	90	25		**122**
50	16	98	56	35.0	90	25		**123**
50	20	98	56	35.0	90	25		**124**
50	25	98	65	35.0	90	25		**125**
50	32	98	68	35.0	90	25		**126**
50	40	98	80	35.0	90	25		**127**

21924 OZ collet chucks E3

DIN 69880

Design
Coolant supply via collet chuck, **shape E3,** axial.
Applications
For centring and drilling.

Note:
For OZ collet chucks, see art. no. 21552–21554.



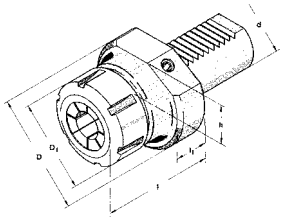
Shank d mm	D mm	D_1 mm	h mm	l mm	l_1 mm	Clamping range Ø mm	For collet chucks type	21924	...
20	50	43	22.0	55	18	2–16	410 E/415 E		**101**
30	68	60	28.0	75	30	2–25	444 E/462 E		**102**
40	83	60	32.5	75	22	2–25	444 E/462 E		**103**
40	83	72	32.5	90	22	4–32	450 E/467 E		**104**
50	98	72	35.0	90	30	4–32	450 E/467 E		**106**

21926 ER collet chucks E4

DIN 69880

Design
Coolant supply via collet chuck, **shape E4,** axial.
Applications
For centring and drilling.

Note:
For ER collet chucks, see art. no. 21519–21528.



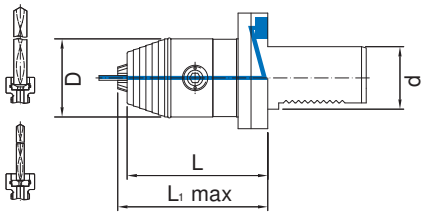
Shank d mm	D mm	D_1 mm	h mm	l mm	l_1 mm	Clamping range Ø mm	For collet chucks type	21926	...
20	50	42	25.0	55	18	1–16	ER/ESX 25/430 E		**201**
30	68	42	28.0	55	22	1–16	ER/ESX 25/430 E		**203**
30	68	50	28.0	55	22	2–20	ER/ESX 32/470 E		**204**
40	83	50	32.5	75	22	2–20	ER/ESX 32/470 E		**205**
40	83	63	32.5	75	22	3–26	ER/ESX 40/472 E		**206**

21948 CNC precision drill chuck

DIN 69880 ≤30µm

Design
- High clamping force
- Cooling via spray nozzles
- Very short design

Scope of delivery:
- Delivered with hexagon key with T-handle SW 6 mm
- **Incl. sealing washers** for the entire clamping range (1x installed, 1x in scope of delivery)



Taper VDI	Clamping range mm	D mm	L mm	L_1 Max. mm	Torque Nm	Retention force N	Weight kg	21948	...
30	0.5–13	50	90	96	20	80	1.8		**101**
30	2.5–16	50	90	96	20	90	1.8		**102**
40	0.5–13	50	90	96	20	80	2.3		**201**
40	2.5–16	50	90	96	20	90	2.3		**202**

21929 Short drill chuck

DIN 69880 ≤30µm

ATORN®

Design
Short design, wear parts hardened and ground, high degree of concentricity.

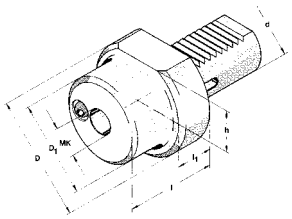
Scope of delivery:
Includes spanner with T-handle for high traction.

Shank d1 mm	Clamping range Ø mm	D mm	A mm	21929	...
30	1–16	50	87		**102**
40	1–16	50	87		**103**

21930 Morse taper mounts, shape F1

DIN 69880

Design
Shape F1, axial.
Applications
For mounting tools with an MK shanks.



Shank d mm	MK	D mm	D_1 mm	h mm	l mm	l_1 mm	21930 ...
20	1	50	50	25.0	22	-	**201**
30	1	68	52	28.0	25	25	**203**
30	2	68	58	28.0	42	25	**204**
30	3	68	68	28.0	66	-	**205**
40	2	83	58	32.5	34	25	**206**

Shank d mm	MK	D mm	D_1 mm	h mm	l mm	l_1 mm	21930 ...
40	3	83	64	32.5	58	25	**207**
40	4	83	72	32.5	86	25	**208**
50	2	98	-	35.0	25	-	**209**
50	3	98	64	35.0	42	25	**210**
50	4	98	72	35.0	71	25	**211**

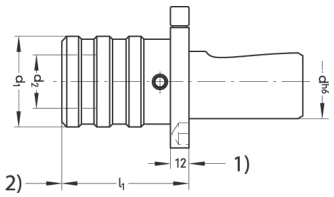
21935 Tapping chucks

DIN 69880

Design
With length compensation under compression and tension.
Applications
For mounting threaded quick-change inserts.

Note:
For quick-change inserts, see art. no. 21459–21460.

1) Clamping ring
2) Insert contact surface



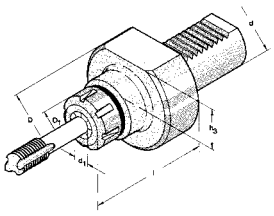
Size	Shank d h_6 mm	For screw tap	l_1 mm	d_1 mm	d_2 mm	Length compensation pressure/tension mm	21935 ...
1	20	M 3–12	55	38	19	9/9	**201**
1	30	M 3–12	55	38	19	9/9	**202**
2	30	M 6–20	77	55	31	15/15	**203**
1	40	M 3–12	55	38	19	9/9	**204**
2	40	M 6–20	77	55	31	15/15	**205**

21937 Tapping chucks

DIN 69880

Design
With length compensation under compression and tension.
Applications
For mounting collet chucks with square drives.

Note:
Collet chucks, see art. no. 21527.



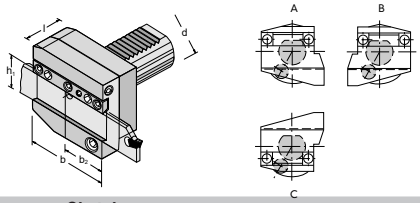
Shank d mm	D mm	D_1 mm	h_3 mm	l mm	d_1 mm	Screw tap	Length compensation mm	21937 ...
30	68	42	28.0	75	1–16	M 4–M 20	15	**201**
40	83	42	32.5	75	1–16	M 4–M 20	15	**202**

21940 Cutting-off tool holder

DIN 69880

Design
With mount for recessing blades.

Note:
For blades, see art. no. 18672 and 18680.

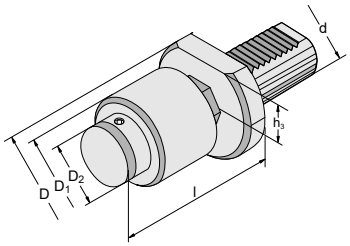


Shank d mm	b mm	b_2 mm	h_1 mm	l mm	Sketch	21940 ...
30	70	35.0	26.0	50	A = right	**101**
30	70	35.0	26.0	50	B = left	**102**
30	70	35.0	26.0	50	C = overhead	**103**
40	85	42.5	32.0	50	A = right	**105**
40	85	42.5	32.0	50	B = left	**106**
40	85	42.5	32.0	50	C = overhead	**107**

21942 Workpiece stops

DIN 69880

Design
Synchronous, length-adjustable, replaceable stop surface.
Applications
For exact positioning of workpieces.



21942

Shank d mm	D mm	D_1 mm	D_2 mm	h_3 mm	l mm	21942 ...
30	68	38	25	28.0	65–100	**101**
40	83	60	40/80	32.5	80–150	**102**

21923 Reducing sleeves

Design
Suitable for indexable insert drill mounts: shape E1, no. 21920. Suitable for boring bar mounts: shape E2, art. no. 21922.
Suitable for internal cooling.
Applications
To reduce for tools with straight shanks, e.g. boring bars, precision lathe tools and indexable insert drills.

21923 Fig. 1

21923 Fig. 2

d_1 mm	d mm	L mm	Fig.	21923 ...
25	6	50	1	**101**
25	8	50	1	**102**
25	10	50	1	**103**
25	12	50	1	**104**
25	14	50	1	**105**
25	16	50	2	**106**
25	20	50	2	**107**

d_1 mm	d mm	L mm	Fig.	21923 ...
32	6	59	1	**108**
32	8	59	1	**109**
32	10	59	1	**110**
32	12	59	1	**111**
32	14	59	1	**112**
32	16	59	1	**113**
32	20	54	2	**114**
32	25	54	2	**115**

d1 mm	d mm	L mm	Fig.	21923 ...
40	6	69	1	**116**
40	8	69	1	**117**
40	10	69	1	**118**
40	12	69	1	**119**
40	14	69	1	**120**
40	16	69	1	**121**
40	20	69	1	**122**
40	25	69	1	**123**
40	32	69	2	**124**

21901 Blanks A2

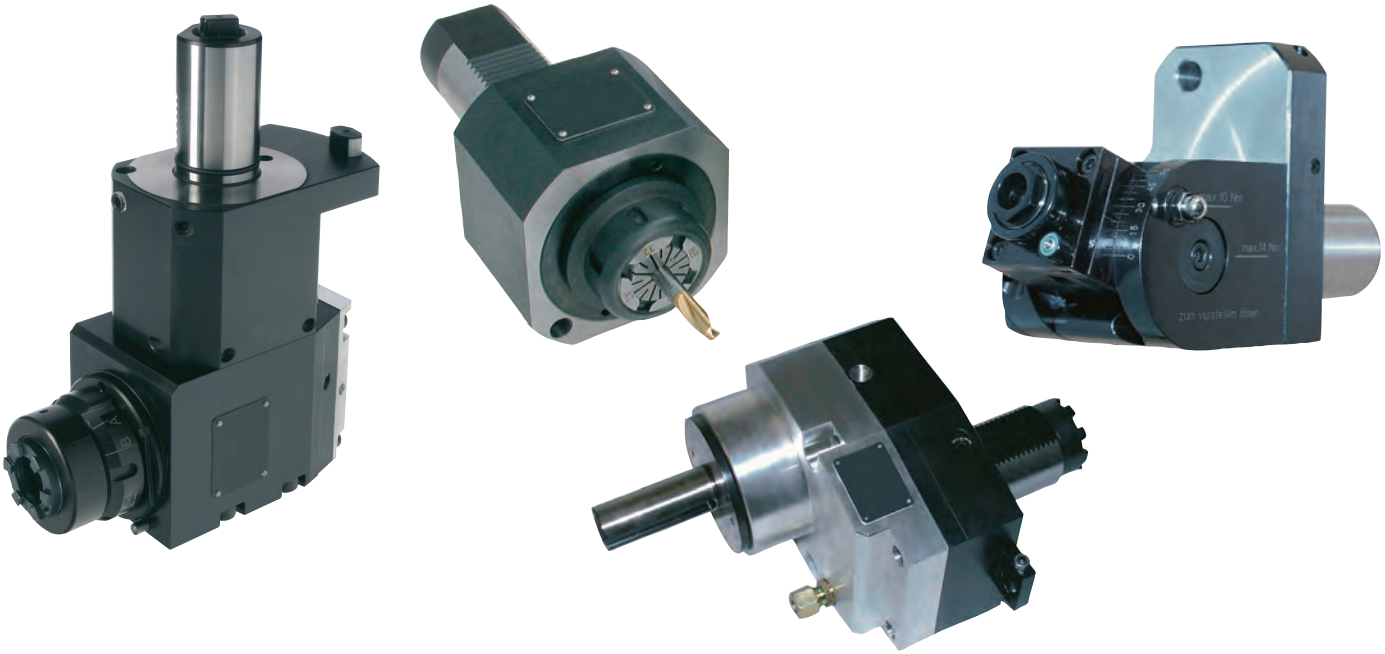
DIN 69880

Design
Round, unhardened, but shank hardened and ground, dimensions in accordance with DIN 69880, Part 2, **shape A2.**

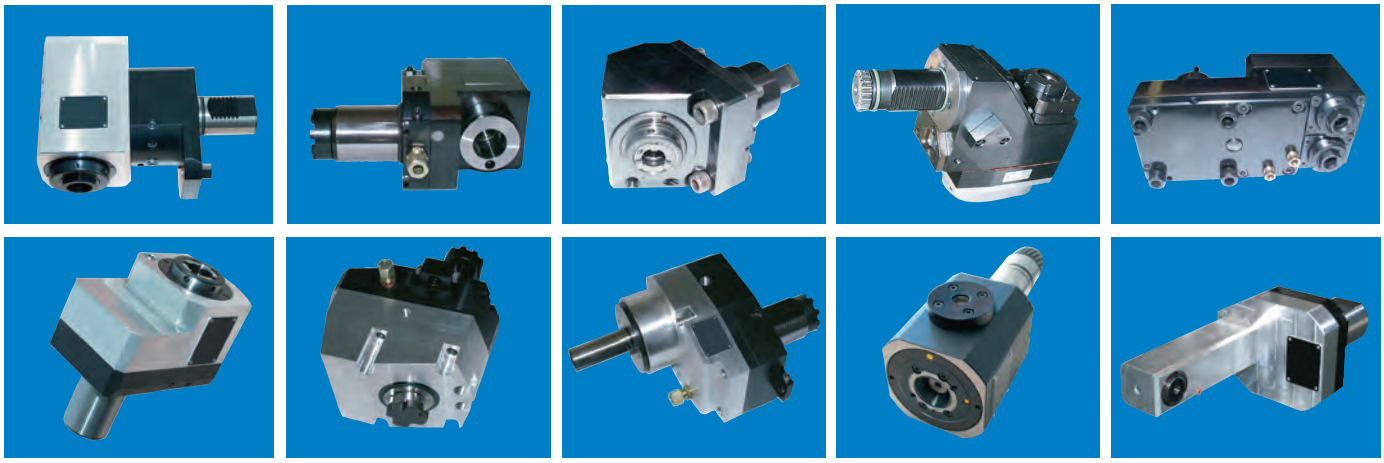
21901

Shank d mm	D mm	l mm	21901 ...
20	50	70	**201**
30	68	240	**202**
40	83	320	**203**
50	98	400	**204**

Driven tools for CNC lathes
Precision tools



All tools go through a multi-stage program on our test bench to check their operating temperature, sealing, noise and concentricity. The individual components are manufactured with the utmost precision on our own tool machines.



Modular tool chucks

The mi interface is based on the principles of HSK: short taper with flat contact surface.

The mi system provides:

- Internal coolant supply
- Consistent tool clamping system
- Tool presetting
- Concentricity < 0.002 mm
- Quick-change function

Available as an option for all driven tools

Driven tools for CNC lathes and machining centres are available for all major machine manufacturers:

Mazak

OKUMA

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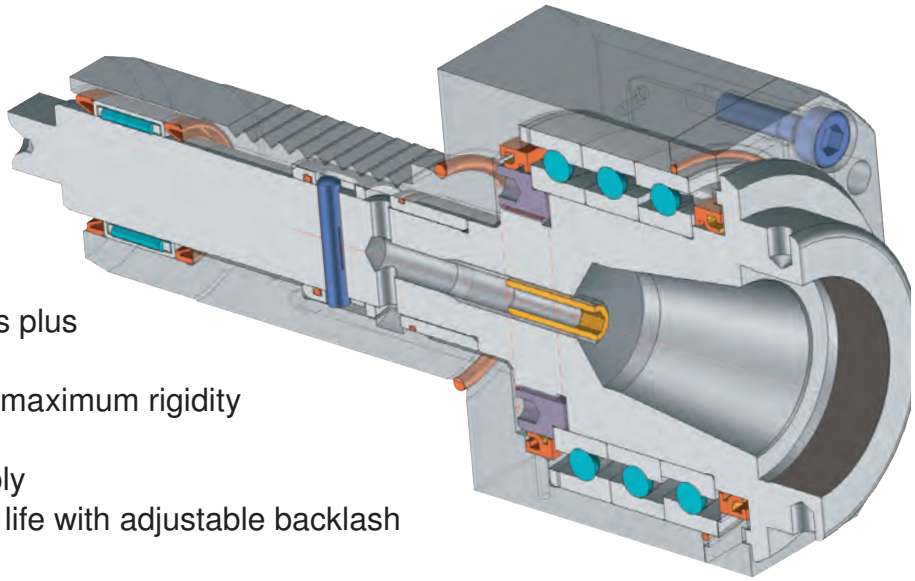
HHW also offers multi-spindle and other solutions adapted to the relevant machining tasks. Please use the questionnaire to send your inquiry to **www.hhw.de.**



Quality characteristics of driven tools

- Many with triple spindle bearings plus needle roller bearings
- Many in monoblock design with maximum rigidity
- Low-friction seals
- Internal or external coolant supply
- Ground gears for a long service life with adjustable backlash

22505 Reducing sleeves DIN 2185

Design
- **High-accuracy design**
- Fully hardened
- Ground internal and external tapers

Applications
Compensates for different Morse tapers on machine and tool.

22505

MK external	MK internal	22505	...
1	0		**101**
2	1		**102**
3	2		**103**
3	1		**104**
4	3		**105**
4	2		**106**

MK external	MK internal	22505	...
4	1		**107**
5	4		**108**
5	3		**109**
5	2		**110**
5	1		**111**

22526 Extended reducing sleeve DIN 2187

Design
- **High-accuracy design**
- Fully hardened
- Ground internal and external tapers

Applications
Extends tools and compensates for different Morse tapers on machine and tool.

22526

MK external	MK internal	Cylinder Ø mm	Length mm	22526	...
1	1	20	145		**101**
2	1	20	160		**102**
3	1	20	175		**103**
1	2	30	160		**106**
2	2	30	175		**107**
3	2	30	194		**108**
4	2	30	215		**109**
2	3	36	196		**111**

MK external	MK internal	Cylinder Ø mm	Length mm	22526	...
3	3	36	215		**112**
4	3	36	240		**113**
5	3	36	268		**114**
3	4	48	240		**115**
4	4	48	265		**116**
5	4	48	300		**117**
4	5	63	300		**119**

22530 Drill and reamer extensions

Design
- Morse taper shank and flat tangs in accordance with **DIN 228 B**
- Fully hardened and ground

22530

MK external	MK internal	Cylinder Ø mm	Length mm	Extension mm	22530	...
1	1	20	200	138		**101**
1	1	20	250	188		**102**
1	1	20	300	238		**103**
1	1	20	350	288		**104**
2	2	25	200	125		**110**
2	2	25	250	175		**111**
2	2	25	300	225		**112**
2	2	25	350	275		**113**
2	2	25	400	325		**114**
2	2	25	500	425		**115**

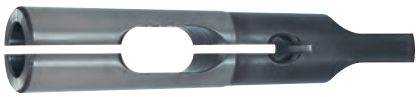
MK external	MK internal	Cylinder Ø mm	Length mm	Extension mm	22530	...
3	3	32	250	156		**121**
3	3	32	300	206		**122**
3	3	32	350	256		**123**
3	3	32	400	306		**124**
3	3	32	500	406		**125**
4	4	40	300	182.5		**132**
4	4	40	350	232.5		**133**
4	4	40	400	282.5		**134**
4	4	40	500	382.5		**135**

22711 Tapered clamping sleeves DIN 6328

Design
- Morse taper shank and flat tangs in accordance with **DIN 228 B**
- Fully hardened
- Ground inside and outside

Applications
For mounting screw taps with square drivers. Used, for example, with quick-change chuck inserts, multi-spindle units with closely spaced spindles etc.

22711



MK/Ø mm	Shank Ø mm	Square mm	22711	...
1/3.5	3.5	2.7		105
1/4.0	4.0	3.0		106
1/4.5	4.5	3.4		107
1/5.0	5.0	3.8		108
1/5.5	5.5	4.3		109
1/6.0	6.0	4.9		110
1/7.0	7.0	5.5		111
1/8.0	8.0	6.2		112
2/5.5	5.5	4.3		113

MK/Ø mm	Shank Ø mm	Square mm	22711	...
2/6.0	6.0	4.9		114
2/7.0	7.0	5.5		115
2/8.0	8.0	6.2		116
2/9.0	9.0	7.0		117
2/10.0	10.0	8.0		118
2/11.0	11.0	9.0		119
2/12.0	12.0	9.0		120
3/9.0	9.0	7.0		121
3/10.0	10.0	8.0		122

MK/Ø mm	Shank Ø mm	Square mm	22711	...
3/11.0	11.0	9.0		123
3/12.0	12.0	9.0		124
3/14.0	14.0	11.0		126
3/16.0	16.0	12.0		127
4/14.0	14.0	11.0		129
4/16.0	16.0	12.0		130
4/18.0	18.0	14.5		131
4/20.0	20.0	16.0		132
4/22.0	22.0	18.0		133

22901–22903 Ejector drift/semi-automatic conical ejector drift

Applications
For removing tools with Morse taper shanks and flat tangs in accordance with **DIN 228 B.**

22901
Design
- **DIN 317**
- Operated **using a** striking tool

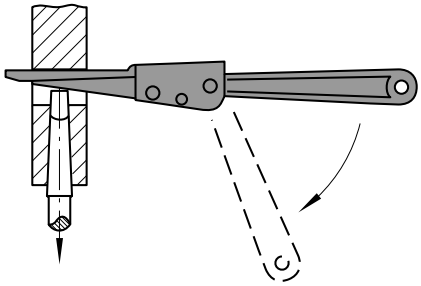
22903
AMF
Design
- Operated **without using a** striking tool
- Single-handed operation. Simply pressing the lever moves two wedges in opposite directions along a toothed rack (the other hand holds the tool)
- Plastic-coated handle, red

Quality
Hardened special steel, bronzed finish.

22903 201
AMF
Design
- Finger guard

22901

22903



For MK	22901	...
0		101
1 + 2		102
3		103
4		104
5 + 6		105

AMF

For MK	22903	...
1 - 3		201
4 - 6		202

23101 Extensions DIN 377

Design
- Hardened, ground and zinc-plated
- Square configuration in accordance with DIN 10 and ISO

Applications
For screw taps, reamers and other tools with square configuration.

23101

Square mm	Total length mm	For screw taps Metric	For screw taps Ww/BSW	23101	...
2.1	60	M 1–2.6	1/16–3/32		101
2.4	70	-	-		102
2.7	80	M 3	1/8		103
3.0	90	M 3.5	-		104
3.4	95	M 4	5/32		105
3.8	100	-	-		106
4.3	105	-	3/16		107
4.9	110	M 4.5–8	3/16–5/16		108
5.5	115	M 9–10	3/8		109
6.2	120	M 11	7/16		110

Square mm	Total length mm	For screw taps Metric	For screw taps Ww/BSW	23101	...
7.0	125	M 12	1/2		111
8.0	125	-	-		112
9.0	130	M 13–16	9/16–5/8		113
10.0	140	-	-		114
11.0	150	M 18	11/16–3/4		115
12.0	155	M 20	-		116
14.5	175	M 22–24	7/8–15/16		118
16.0	180	M 27	1.		119
18.0	200	M 30	1 1/8		120

23103 Adjustable extensions

Design
- With replaceable hardened clamping jaws

Applications
For screw taps, reamers and other tools with square configuration.

23103

For square mm	Total length mm	Shank Ø mm	Square mm	Chuck Ø mm	For screw taps metric	For screw taps Ww/BSW	23103	...
2.0–5.0	175	10	5.0	20.1	M 3–8	1/8–3/8		101
4.6–8.0	250	13	7.0	25.3	M 5–12	3/16–1/2		102

23125 Ball-type tap wrenches

Design
- With four square holes, case-hardened
- One arm can be unscrewed
- For square configurations in accordance with DIN 10

23125

Size	Square dimensions mm	For screw taps metric	For screw taps Ww/BSW	Total length mm	23125	...
0	2.1–2.7/3.0–3.4	M 1–4	1/16–5/32	200		201
1	3.0–3.4/4.3–4.9	M 3.5–8	5/32–5/16	200		202
2	3.4–4.3/4.9–5.5	M 4–10	5/32–3/8	250		203
3	4.9–5.5/6.2–7.0	M 5–12	3/16–1/2	295		204
4	5.5–6.2/7.0–9.0	M 10–16	3/8–5/8	340		205
5	7.0–9.0/11.0–12.0	M 12–20	1/2–3/4	450		206
6	11.0–12.0/14.5–16.0	M 18–27	3/4–1	645		207

23130 Adjustable tap wrenches DIN 1814

Design
- Made of die-cast zinc, from size 6 made of ST37 steel, welded construction
- Clamping jaws case-hardened and bronzed
- Zinc-plated-steel handles

Applications
For clamping tools with square configurations.

Note:
Size 00 is round (not standardised).

23130 202-209

Size	For square mm	For screw taps metric	For screw taps Ww/BSW	For hand reamers	Total length mm	23130	...
00	1.5–2.4	M 1–2.6	1/16–3/32	2–3	40		201
0	2.0–5.0	M 1–8	1/16–1/4	3–6	125		202
1	2.0–6.0	M 1–10	1/16–3/8	3–7	180		203
1.1/2	2.0–8.0	M 1–12	1/16–1/2	3–9	200		204
2	4.0–9.0	M 4–12	3/16–1/2	5–9	280		205
3	4.9–12.0	M 5–20	7/32–3/4	7–1	375		206
4	5.5–16.0	M 9–27	3/8–1.	7–21	480		207
5	7.0–20.0	M 12–33	1/2–1.1/4	9–26	700		208
6	11.0–24.0	M 18–42	9/16–1.5/8	16–30	960		209

23130 201

23135 Adjustable tap wrenches

Design
- Similar to DIN 1814
- Forged-**steel housing**
- Jaws are case-hardened and bronzed
- Rotary handles are zinc-plated and can be unscrewed

23135

Size	For square mm	For screw taps M	For screw taps Ww	Total length mm	23135	...
1	2.0–6.3	1–10	1/16–3/8	180		101
2	3.0–9.0	4–12	3/16–1/2	280		102
3	4.9–12.0	5–20	7/32–3/4	375		103
6	11.0–24.0	18–42	3/4–1 1/2	1000		107
8	16.0–40.0	25–64	1–2 1/2	1250		109

23155 Tool holders

Design
- Handle with through hole
- Black plastic handle
- Screw head with 4 clamping jaws

Applications
For mounting tools with square and round shanks.

23155

Clamping range mm	Total length mm	23155	...
0–1.2	105		101
1.2–2.0	110		102
2.0–3.0	115		103
2.0–3.5	135		104
3.0–4.5	160		105
4.0–6.0	170		106

23160 - 23161 Twin-chuck tool holder

ATORN®

Design
- All-steel
- With ratchet
- For clockwise and anticlockwise rotation, also lockable
- Adjustable T-handle

Applications
For tools with square shanks, ideal for hard-to-reach places.

23160 23161

Clamping range square mm	For screw taps M	Total length mm	Short 23160	...	Long 23161	...
2.0–5.0	3–8	85		201		
4.6–8.0	5–12	110		202		
9.0 - 12.5	13 - 20	117		203		
2.6–5.5	3–10	250				101
4.6–8.0	5–12	300				102

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

23502 Die holder DIN 22568

Design
Housing up to size 65 x 25 mm made of fine-zinc high-pressure die casting, from size 75 x 20 mm made of ST37 steel, welded construction, phosphated clamping screws, zinc-plated-steel handles. From size 45 x 14 mm, handles can be unscrewed.

Applications
For dies in accordance with DIN EN 22568.

23502

Diameter x H mm	For dies Metric	For dies Metric fine	For dies Ww/BSW	Total length mm	23502	...
16 x 5	M 1- 2.6	-	1/16- 3/32	160		**201**
20 x 5	M 3- 4	M 3-4	1/8-5/32	180		**202**
20 x 7	M 4.5-6	M 4.5-6	3/16-1/4	180		**203**
25 x 9	M 7-9	M 7-9	5/16	210		**204**
30 x 11	M 10-11	M 10-11	3/8-7/16	270		**205**
38 x 10	-	M 12-15	-	310		**206**
38 x 14	M 12-14	-	1/2-9/16	310		**207**
45 x 14	-	M 16-20	-	440		**208**
45 x 18	M 16-20	-	5/8-3/4	440		**209**
55 x 16	-	M 22-25	-	490		**210**
55 x 22	M 22-24	-	7/8-1.	490		**211**
65 x 18	-	M 26-36	-	630		**212**
65 x 25	M 27-36	-	1.1/8-1.3/8	630		**213**
75 x 20	-	M 38-42	-	900		**214**
75 x 30	M 39-42	-	1.1/2-1.5/8	900		**215**
90 x 22	-	M 45-52	-	920		**216**
90 x 36	M 45-52	-	1.3/4-2.1/4	920		**217**
105 x 22	-	M 55-65	-	1100		**218**

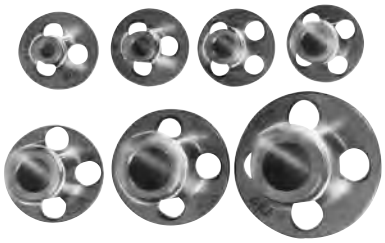
23503 - 23504 Die guides

Applications
For cutting male threads with DIN EN 22568 die holders and DIN EN 22568 dies.

23503
Design
Seven pieces, die guides from M 3–M 12.

23504
Design
Individual.

23503 - 23504



Content	For dies Metric	Set 23503	...
7 pieces	M 3 - M 12		**101**

Guide Size	For dies Metric	Individual 23504	...
1	M 3		**101**
2	M 4		**102**
3	M 5		**103**
4	M 6		**104**
5	M 8		**105**
6	M 10		**106**
7	M 12		**107**

24110 - 24115 Fixed punch tips DIN 806

Design
- **Tip angle 60°**
- Fully hardened and ground

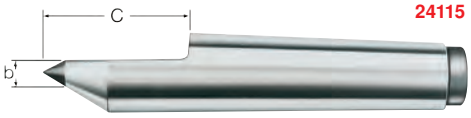
24110
ROHM
Design
- Full tip
Quality
Tool steel.

24110

24113
ROHM
Design
- Full tip
Quality
Cemented-carbide insert.

24113

24115
Design
- Half tip
Quality
Cemented-carbide insert.



24115

MK	Total length mm	No. 24115 b mm	No. 24115 c mm	ROHM 24110	...	ROHM 24113	...	24115	...
1	80	7	22		102				102
2	100	7	30		103				103
3	125	11	38		104		104		104
4	160	14	50		105		105		105
5	200	18	63		106		106		106

24200 Synchronously running punch tips

HHW
Design
- **Tip angle 60°**
- Mounted in ball bearings, fully hardened and ground
- Moving point made from high-quality tool steel
- High concentricity
- Smooth running

24200

Size	MK	Workpiece weight max. kg	Punch tip Ø mm	Housing Ø mm	24200	...
1	1	30	15	36		101
2	2	50	20	45		102
3	3	120	25	60		103
4	4	220	32	70		104

24202 Synchronously running punch tips, lightweight, slim

ROHM
Design
- **Tip angle 60°**
- Lightweight design with slim housing
- Body and moving point are hardened
- Hardened moving point can be reground multiple times
- Precise rolling bearings for accurate true-running
- Maintenance-free due to permanent lubrication
- Special seal prevents the ingress of dirt and cooling lubricant

Applications
Mainly for machining small and very small parts on small and large lathes.

24202

MK	Length from spindle mm	Housing Ø mm	Largest rotating centre punch Ø mm	Concentricity deviation max. mm	Workpiece weight max. kg	24202	...
2	62.0	32	15	0.005	200		101
3	62.0	34	15	0.005	400		102
4	75.5	42	20	0.005	800		103
5	104.0	58	30	0.010	1600		104

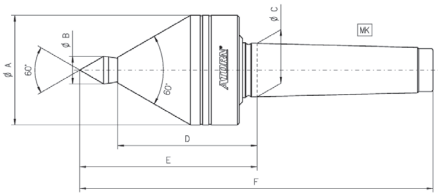
24203 Synchronously running punch tips

ATORN®

Design
- **Tip angle 60°**
- Extended moving point
- Max. concentricity deviation 0.005 mm
- Fully hardened and ground
- Bearings positioned for high axial forces
- Shaft seal prevents the ingress of dirt and cooling lubricant

Applications
Universal application on manual lathes.

24203



MK	A mm	B mm	C mm	D mm	E mm	F mm	rpm max.	Workpiece weight max. kg	24203	...
2	54	13	17.78	68.5	86.5	150.5	4200	170		**201**
3	54	13	23.83	68.5	86.5	167.5	4200	170		**202**
3	64	16	23.83	78.0	100.0	181.0	3800	**330**		**203**
4	64	16	31.27	78.0	100.0	202.5	3800	330		**204**
4	86	19	31.27	93.5	121.5	224.0	3200	**550**		**205**
5	86	19	44.40	93.5	121.5	251.0	3200	**550**		**206**

24204 - 24205 Synchronously running punch tips

RÖHM

Design
- **Tip angle 60°**
- Multiple ball bearings and needle bearings for moving point in shaft
- Body and moving point are die-forged, hardened and ground
- Fixed protective cover with special sealing against the ingress of dirt and coolant

Note:
Spare moving point deliverable on request.

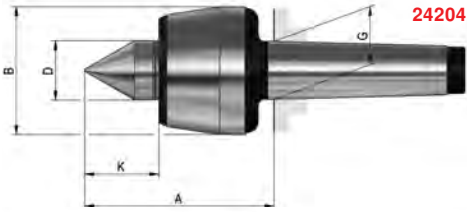
24204
Design
- Normal moving point

Note:
Size 101–104 with single-row radial bearings.

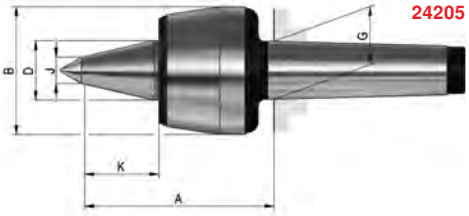
24205
Design
- Extended moving point permits unhindered access to the support

Applications
Ideal for copy turning.

24204



24205



Size	MK	Workpiece weight max. kg	A mm	B mm	D mm	G mm	K mm	J mm	Concentricity deviation max. mm	Rotation speed max. rpm	24204	...	24205	...
101 H	1	100	60.5	34.5	15	12.065	17.0	-	0.005	7000		**101**		
102 H	2	200	65.0	43.0	20	17.780	24.0	-	0.005	7000		**102**		
104 H	3	400	70.5	48.5	22	23.825	27.5	-	0.005	6300		**103**		
106 H	3	500	79.5	58.5	25	23.825	31.0	-	0.005	5000		**104**		
108 H	4	800	102.5	68.5	32	31.267	41.0	-	0.005	3800		**105**		
110 H	5	2000	129.0	88.5	40	44.399	50.5	-	0.005	3000		**106**		
114 H	6	3500	152.0	102.5	50	63.348	57.5	-	0.008	2600		**107**		
102 HVL	2	140	75.0	43.0	20	17.780	34.0	10	0.005	7000				**101**
106 HVL	3	400	95.5	58.5	25	23.825	47.0	12	0.005	5000				**102**
108 HVL	4	500	114.5	68.5	32	31.267	53.0	14	0.005	3800				**103**
110 HVL	5	1200	143.5	88.5	40	44.399	65.0	16	0.005	3000				**104**

24206 Synchronously running punch tip sets

RÖHM

	Set contents
1	**Body,** hardened, maintenance-free
4	**Inserts** (60°/75°/90° and 60° extended)
1	**Insert** for hollow bodies
1	**Small insert** for workpieces without centres
1	**Large insert** for workpieces without centres
1	**Lifter**
1	**Wooden box**

24206

Size	MK	Workpiece weight max. kg	Concentricity deviation max. mm	24206	...
102 H	2	40	0.01		**101**
104 H	3	130	0.01		**102**
108 H	4	250	0.01		**104**
110 H	5	650	0.01		**105**

24207 - 24208 Synchronously running punch tips

ROHM

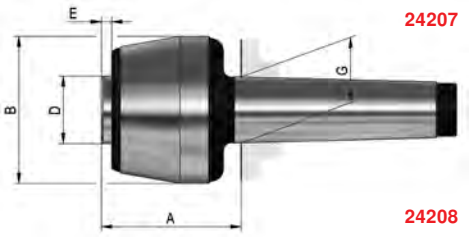
Design
- Body hardened, maintenance-free
- Without insert and lifter

Applications
For replaceable inserts and various centring tasks, especially for single-part production.

Note:
For inserts, see art. no. 24209–24213.

24208
Lifters
Applications
For releasing inserts.

24207



24208

Size	MK	Workpiece weight max. kg	A mm	B mm	D mm	E mm	G mm	Concentricity deviation max. mm	24207 ...	24208 ...
102 A	2	40	45	43.0	20	4.0	17.780	0.01	101	201
104 A	3	130	48	48.5	22	4.5	23.825	0.01	102	202
108 A	4	250	67	68.5	32	5.0	31.267	0.01	104	202
110 A	5	650	85	88.5	40	6.0	44.399	0.01	105	203

24209 - 24213 Interchangeable inserts

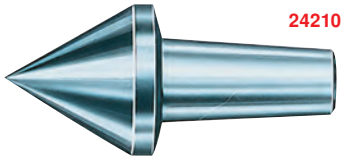
ROHM

24209
Extension use
Design
Type VL, tip angle 60°.
Applications
For synchronously running punch tips art. no. 24207.

24210
Use
Design
60°.
Applications
For synchronously running punch tips art. no. 24207.

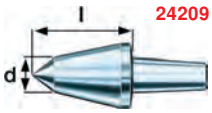
24213
Use
Design
For hollow body 60°.
Applications
For synchronously running punch tips art. no. 24207.

24210



24213

24209



For size	d mm	l mm	24209 ...
102A	6	25	101
104A	8	30	102
108A	12	43	104
110A	13	55	105

For size	Centre Ø mm	24210 ...
102A	16	101
104A	20	102
108A	28	104
110A	38	105

For size	D mm	d mm	24213 ...
102A	25	10	101
104A	35	15	102
108A	55	30	104
110A	70	40	105

24231 - 24232 Synchronously running punch tips 400 NC

ROHM

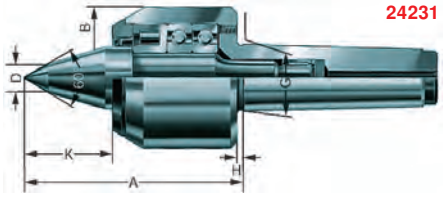
Design
- **Tip angle 60°**
- With shock absorption and high-precision bearings supported by spring assembly
- Body and moving point hardened and ground, maintenance-free

Applications
For damping impact loads, such as rapid start-up of the barrel on the workpiece and for high speeds with low axial loads.

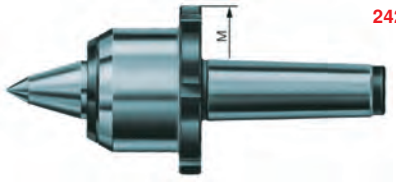
24231
Applications
For heavy loads at high rotation speeds.

24232
Design
- With draw-off nut

24231



24232



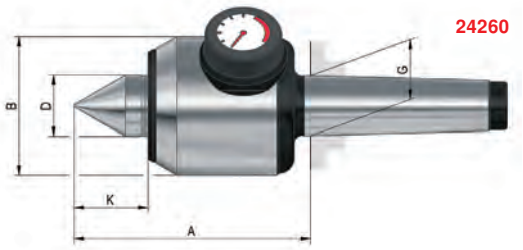
Size art. no. 24231/24232	MK	Workpiece weight max. kg	Concentricity deviation max. mm	Rotation speed max. rpm	A mm	B mm	D mm	H mm	K mm	M mm	24231 ...	24232 ...
424/484	4	1000	0.005	7000	122	70	16	6.5	44	100	101	101
425/485	5	2000	0.005	6000	150	95	20	6.5	59	125	102	102

24260 Automatic synchronously running punch tips

Design
- **Tip angle 60°**
- Moving point preloaded
- Body and moving point hardened and ground
- Pressure display for an exact reading of the axial clamping force in daN

Applications
Also for normal clamping tasks.

Note:
Ideal as a counter centre for face drivers art. no. 25230–25239, to maintain constant axial clamping force between the tips (constant reclamping). Extended moving point deliverable on request.

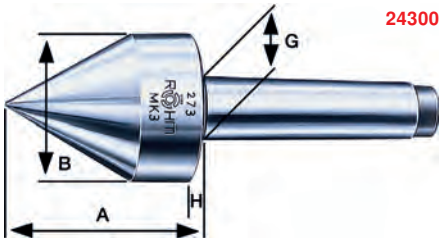


Size	MK	Axial clamping force max. daN	D mm	E mm	B mm	F mm	Concentricity deviation max. mm	24260	...
503	3	550	25	31.5	64	67	0.01		**101**
504	4	900	32	39.0	72	76	0.01		**102**
505	5	1500	40	49.0	95	103	0.01		**103**

24300 Synchronously running self-centring tapers

Design
- **Taper point tapers to 60°**
- Robust bearing
- Drive arbor, body and taper point hardened

Applications
As a self-centring taper for hollow bodies and as a centring tip for machining normal workpieces.



Size	MK	A mm	B mm	H mm	G mm	Workpiece weight max. kg	Concentricity deviation max. mm	24300	...
272	2	61	42	7.0	17.780	200	0.01		**101**
273	3	79	56	7.0	23.825	400	0.008		**102**
274	4	100	64	8.5	31.267	800	0.008		**103**

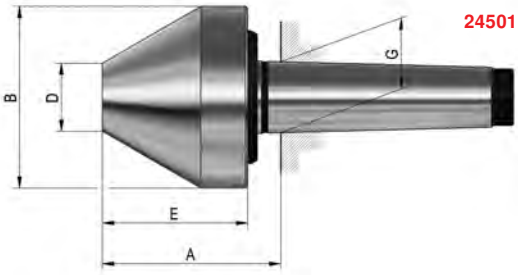
24501 - 24502 Synchronously running self-centring tapers

Design
- Robust bearing
- High concentricity
- Body and housing hardened and ground, maintenance-free

Applications
For absorbing the highest axial and radial pressures. For machining tubes and other hollow bodies.

24501
Design
- Tip angle 60°

24502
Design
- Tip angle 75°



Size	MK	A mm	B mm	D mm	E mm	G mm	Workpiece weight max. kg	Concentricity deviation max. mm	60° 24501	...	75° 24502	...
171A	2	65	50	20	52	17.78	200	0.008		**102**		
172	2	77	80	30	64	17.78	300	0.008		**103**		
172A	3	77	80	30	64	23.825	400	0.008		**104**		
172B	4	78.5	80	30	64	31.267	400	0.008		**105**		
172	2	80	80	20	67	17.78	300	0.008				**101**
172A	3	80	80	20	67	23.825	400	0.008				**102**
172B	4	81.5	80	20	67	31.267	400	0.008				**103**
173	3	85.5	120	30	72	23.825	600	0.008				**104**
173A	4	87	120	30	72	31,267	800	0.008				**105**
173B	5	88	120	30	72	44.399	800	0.008				**106**
174	4	107	170	50	90	31.267	1200	0.01				**107**
174A	5	106	170	50	90	44,399	1600	0.01				**108**

25230 Face driver sets. type CoA

ROHM

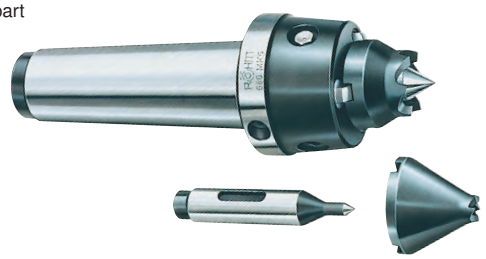
Design
- Basic body with Morse taper shank
- Long, guided, spring-loaded centring point, axially adjustable
- Attachable driving plates with hydraulic compensation for even clamping forces
- Rapid changeover of different driving plates
- Clamping diameter 12–32 mm
- Turning range 13–64 mm

Contents:
- 1 basic body
- Two driving plates
  Clamping diameter 12 and 32 mm
- 2 centring point diameters = 6 and 16 mm
- In box

Applications
For turning between points for series and single-part production. Small and medium-sized workpieces can be machined without repositioning, along their entire lengths and with a high degree of accuracy.
For clockwise rotation.

Note:
Also deliverable on request for anti-clockwise rotation and for larger face drivers.

25230



Morse taper	25230 ...
3	101
4	102
5	103

25233 Individual parts for face driver sets, type CoA

ROHM

Design
Basic body.
Does not include centring point or driving plate.
Applications
For clockwise and anti-clockwise rotation.

25233

Size	Morse taper	25233 ...
1	3	101
2	4	102
3	5	103

25235 - 25239 Individual parts for face driver sets, type CoA

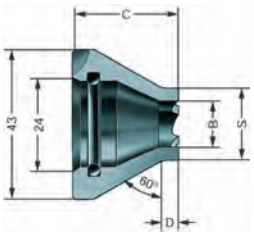
ROHM

25235
Driving plate, directly toothed.
Applications
For clockwise rotation.

25236
Driving plate, directly toothed.
Applications
For anti-clockwise rotation.

25239
Centring point

25235



25239

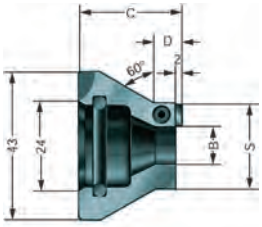
Clamping Ø S mm	For turning range mm	B mm	C mm	D mm	Suitable centring point diameter A mm	Clockwise rotation 25235 ...	Anti-clockwise rotation 25236 ...	Centring point 25239 ...
8	9–16	4.5	38	4	4	101	101	101
10	11–20	4.5	38	4	4	102	102	101
12	13–24	7.0	36	4	6	103	103	102
16	17–32	11.0	33	4	10	104	104	103
20	21–40	13.0	30	4	12	105	105	104
25	26–50	17.0	30	8	16	106	106	105
32	33–64	22.0	30	10	16	107	107	105

25240 - 25241 Driving plates for sets, type CoA

Design
With replaceable cemented-carbide driving plates 6 x 3.2 mm.

25240
Applications
For clockwise rotation.

25241
Applications
For anti-clockwise rotation.



Clockwise rotation

Anti-clockwise rotation

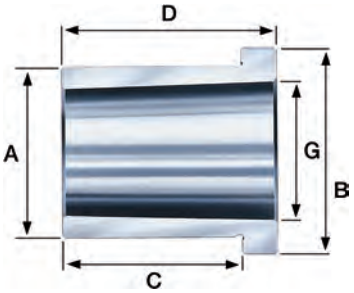
25240

Clamping Ø S mm	For turning range mm	B mm	C mm	D mm	Suitable centring point diameter A mm	25240 ...	25241 ...
20 H	21–40	7	30	5	6	101	101
25 H	26–50	11	30	8	10	102	102
32 H	33–64	17.5	30	10	16	103	103

25243 Sleeves

Applications
For clamping face drivers in lathe chucks.

25243



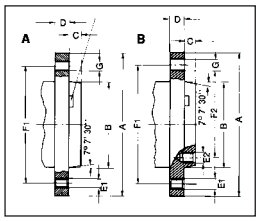
MK Inside	A mm	B mm	C mm	D mm	G mm	25243 ...
3	31	39	32	40	23.825	101
4	39	47	42	50	31.267	102
5	54	62	52	60	44.399	103
6	75	83	62	70	63.448	104

Dimensions of the machine spindle heads according to DIN

The latest edition of the DIN sheet is binding

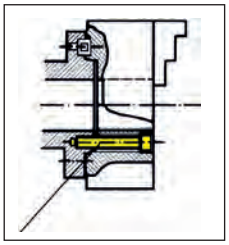
DIN 55026 from taper size 4 with driver.

Spindle head size	A mm	B mm	C1 mm	C2 mm	D mm	Number of holes outer Hole circle (F1) E1 mm	F1 (outer Hole circle) mm	Number of holes inner Hole circle (F2) E2 mm	F2 (inner Hole circle) mm
3	92	53.983	11	-	16	3 x M10	70.6	-	-
4	108	63.521	11	-	20	11 x M10	82.6	-	-
5	133	82.573	13	14.288	22	11 x M10	104.8	8 x M10	61.9
6	165	106.385	14	15.875	25	11 x M12	133.4	8 x M12	82.6
8	210	139.731	16	17.462	28	11 x M16	171.4	8 x M16	111.1
11	280	196.883	18	19.050	35	11 x M20	235.0	8 x M20	165.1
15	380	285.791	19	20.638	42	12 x M24	330.2	11 x M24	247.6
20	520	412.795	21	22.225	48	12 x M24	463.6	11 x M24	368.3



Shape A: Threaded holes in the flange (outer hole circle) **without** inner hole circle.

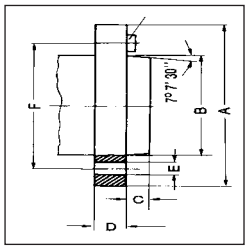
Shape B: Threaded holes in flange (outer hole circle) **and** inner hole circle.

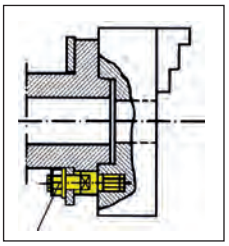


Mounting with hexagon socket-head bolts on the spindle head

DIN 55027 and 55022 Bayonet disc mounting (ISO 702/III)

Spindle head size	A mm	B mm	C mm	D mm	Number of holes x E mm	F mm
3	102	53.985	11	16	3 x 21	75.0
4	112	63.525	11	20	3 x 21	85.0
5	135	82.575	13	22	4 x 21	104.8
6	170	106.390	14	25	4 x 23	133.4
8	220	139.735	16	28	4 x 29	171.4
11	290	196.885	18	35	6 x 36	235.0
15	400	285.800	19	42	6 x 43	330.2
20	540	412.800	21	48	6 x 43	463.6

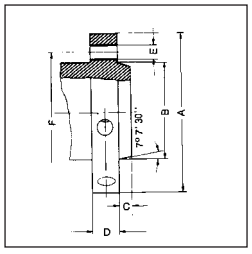


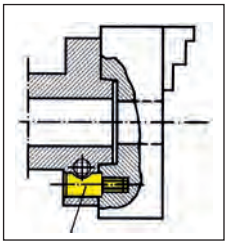


Mounting with stud bolts and collar nuts

DIN 55029 and ASA B 5.9 D 1 Camlock mounting (ISO 702/II)

Spindle head size	A mm	B mm	C mm	D mm	Number of holes x E mm	F mm
3	92.1	53.985	11.1	31.8	3 x 15.1	70.66
4	117.5	63.525	11.1	33.3	3 x 16.7	82.55
5	146.0	82.575	12.7	38.1	6 x 19.8	104.8
6	181.0	106.390	14.3	44.5	6 x 23.0	133.4
8	225.4	139.735	15.9	50.8	6 x 26.2	171.4
11	298.5	196.885	17.5	60.3	6 x 31.0	235.0
15	403.0	285.800	19.0	69.9	6 x 35.7	330.2
20	546.0	412.800	21.0	82.5	6 x 42.1	463.6





Mounting with Camlock stud bolts

26035 Lathe chuck flanges

Design
- Short taper adapter in accordance **with DIN 55027** (DIN 55022 with bayonet disc fastener) stud bolt and collar nut
- Cast body, finished on machine side, faced on chuck side

Applications
Mounting lathe chucks and face plates with centring mount in accordance with DIN 6350.

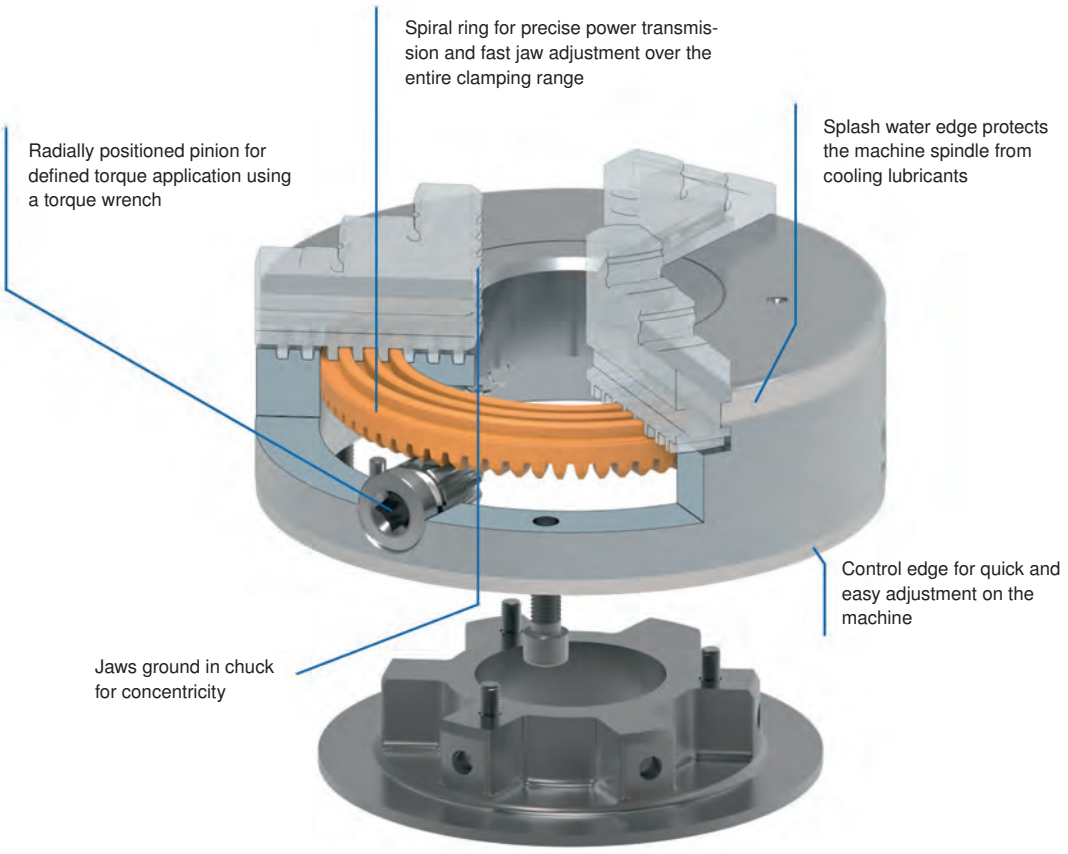
Note:
Flanges for long taper adapters and made of steel on request.

26035

For chuck Ø mm	Short taper size	26035 ...
160	3	201
160	4	211
160	5	202
200	5	204
200	6	205

For chuck Ø mm	Short taper size	26035 ...
250	6	206
250	8	207
315	6	208
315	8	209
400	11	210

Info Lathe chucks with spiral rings: Cushman system

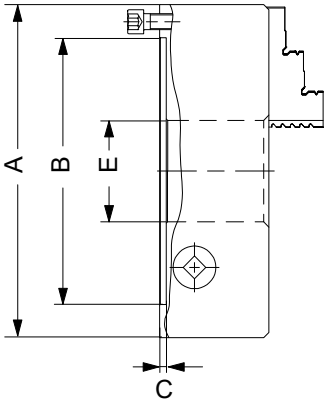


3-jaw lathe chuck

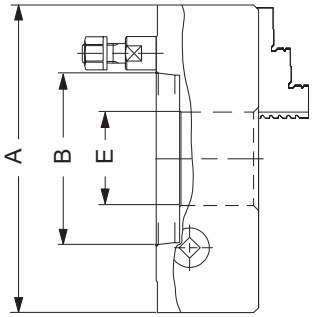
Note:
For spare jaws and auxiliary jaws see art. no. 26270–26278.

26250–26251 + 26257 + 26261
Scope of delivery:
- With one set of internally stepped turning jaws
- With one set of externally stepped drill jaws

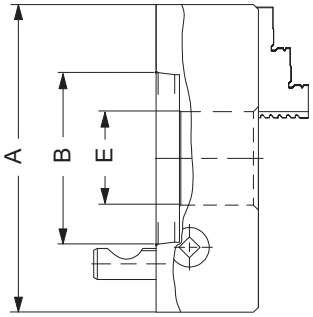
26252
Scope of delivery
- With one set of reversible jaws: Combination for internal and external applications



Centring mount in accordance with DIN 6350
(fixing screws from the rear)
For art. no. 26250–26252



Short taper adapter in accordance with DIN 55027
(Stud bolt and collar nut)
For art. no. 26257



Short taper adapter in accordance with DIN 55029
(Stud bolts for Camlock)
For art. no. 26261

DIN 6350						RÖHM Cast body		RÖHM Steel body		HW Steel body	
Size Ø A mm	B mm	C mm	Borehole E mm	max. rpm no. 26250	max. rpm no. 26251/26252	26250	...	26251	...	26252	...
80	56	3.0	19	5000	7000				102		102
100	70	3.0	20	4500	6300		103		103		103
125	95	4.0	32	4000	5500		104		104		104
160	125	4.0	42	3600	4600		106		106		106
200	160	4.0	55	3000	4000		107		107		107
250	200	5.0	76	2500	3000		108		108		108
315	260	5.0	103	2000	2300		109		109		
400	330	5.0	136	1600	1800				111		

DIN 55027					RÖHM Steel body	
Size Ø A mm	B mm	Short taper size	Borehole E mm	Max. rotation speed rpm	26257	...
125	63.5	4	32	5500		104
160	82.5	5	42	4600		108
200	82.5	5	55	4000		109
200	106.4	6	55	4000		110
250	106.4	6	76	3000		111
250	139.7	8	76	3000		112
315	139.7	8	103	2300		114

DIN 55029					RÖHM Steel body	
Size Ø A mm	B mm	Short taper size	Borehole E mm	Max. rotation speed rpm	26261	...
160	63.5	4	42	4600		103
160	82.5	5	42	4600		110
200	82.5	5	55	4000		105
200	106.4	6	55	4000		106
250	106.4	6	76	3000		107
315	139.7	8	103	2300		108
315	196.9	11	103	2300		109

26270 - 26278 Jaw sets for 3-jaw lathe chucks

ROHM

Design
Set = 3 pieces.
Interchangeable provided that the jaw guides are not worn.

Note:
Replacement hard jaws must have their bearing surfaces ground in using a grinding attachment on the lathe to achieve the original concentricity.

26270

Drilling jaws
Hard, outwards stepped.

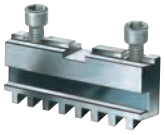
26271

Turning jaws
Hard, inwards stepped.

26272

Block jaws
Unstepped, soft can be hardened.

26277



Plain jaws
Hard. For attaching soft interchangeable jaw grips no. 26278.

26278

Interchangeable jaw grips
Soft, can be hardened. For bolting on to plain jaws.

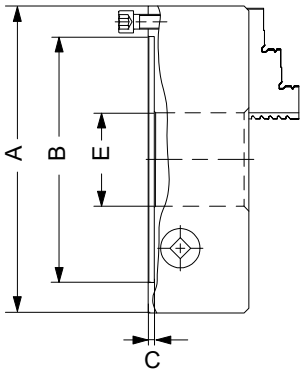
For size mm	26270 ...	26271 ...	26272 ...	26277 ...	26278 ...
80	101	101	101		
100	102	102	102	102	102
125	103	103	103	103	103
160	105	105	105	105	105
200	106	106	106	106	106
250	107	107	107	107	107
315	108	108	108	108	108
350/400	109	109	109	109	109

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

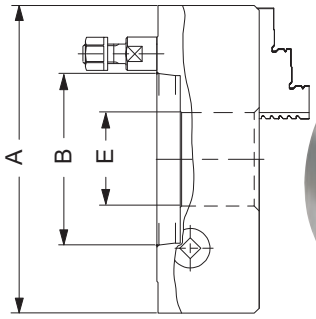
26316 - 26319 Four-jaw lathe chucks

Scope of delivery
- With one set of internally stepped turning jaws
- With one set of externally stepped drill jaws
- Spanner
- Fastening screws

Note:
For spare jaws and auxiliary jaws see art. no. 26330–26334.



Centring mount in accordance with DIN 6350
(fixing screws from rear)
For art. no. 26316–26317



Short taper adapter in accordance with DIN 55027
(Stud bolt and collar nut)
For art. no. 26319

26316 - 26319

DIN 6350

Size Ø A mm	B mm	C mm	Borehole E mm	Max. rpm no. 26316	Max. rpm no. 26317	Cast body 26316	...	Steel body 26317	...
80	56	3	19	5000	7000				101
100	70	3	20	4500	6300		102		102
125	95	4	32	4000	5500		103		103
160	125	4	42	3600	4600		105		105
200	160	4	55	3000	4000		106		106
250	200	5	76	2500	3000		107		107
315	260	5	103	2000	2300		108		108

DIN 55027

Size Ø A mm	B mm	Short taper size	Borehole E mm	Max. rotation speed rpm	Steel body 26319	...
125	63.5	4	32	5500		303
160	63.5	4	42	4600		308
160	82.5	5	42	4600		307
200	82.5	5	55	4000		309
200	106.4	6	55	4000		310
250	106.4	6	76	3000		311
250	139.7	8	76	3000		312
315	139.7	8	103	2300		314

26330 - 26334 Jaw sets for four-jaw lathe chucks

Design
Set = 4 pieces.
Interchangeable provided that the jaw guides are not worn.

Note:
Replacement hard jaws must have their bearing surfaces ground in using a grinding attachment on the lathe to achieve the original concentricity.

26330

Drilling jaws
Hard, outwards stepped.

26331

Turning jaws
Hard, inwards stepped.

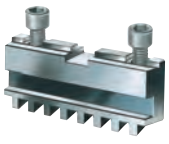
26332

Block jaws
Unstepped, soft can be hardened.

26333

Interchangeable jaw grips
Soft, can be hardened.

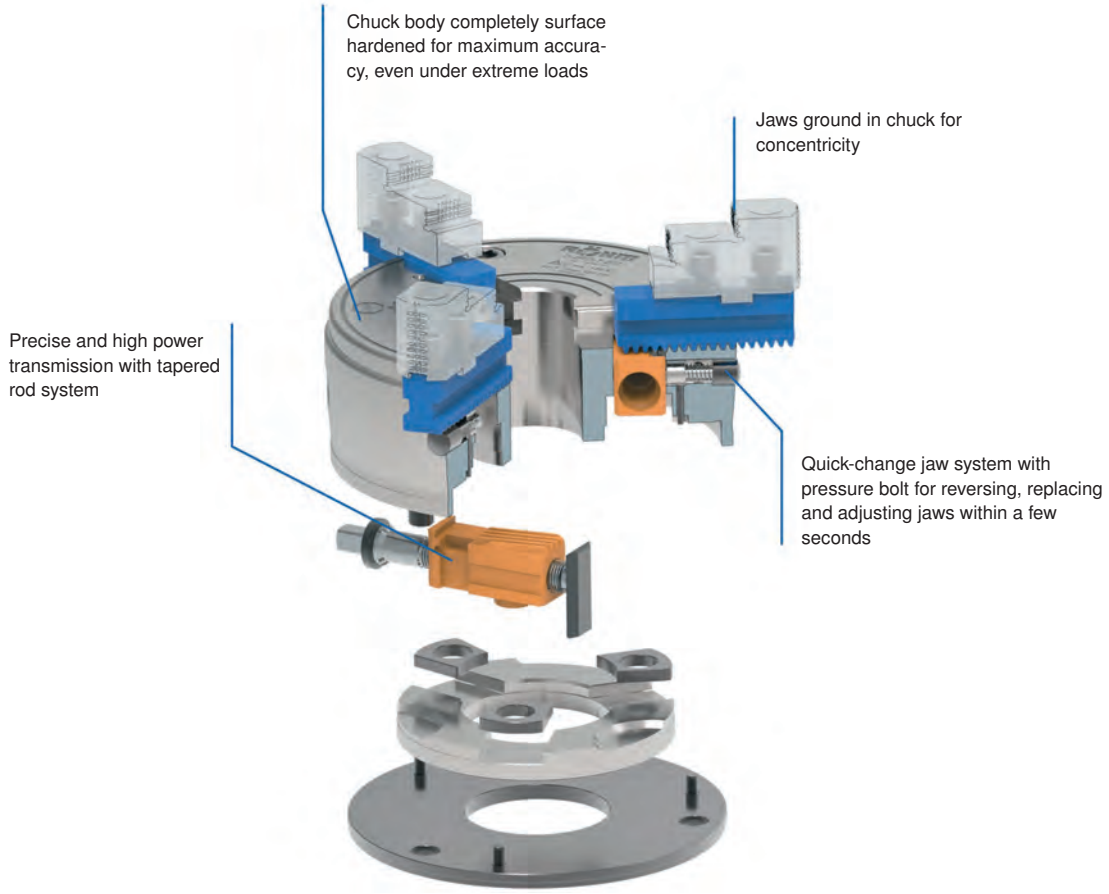
26334



Plain jaws
Hard. For attaching soft interchangeable jaw grips no. 26333.

For size mm	26330	...	26331	...	26332	...	26333	...	26334	...
80		101		101		101				
100		102		102		102		102		102
125		103		103		103		103		103
160		105		105		105		105		105
200		106		106		106		106		106
250		107		107		107		107		107
315		108		108		108		108		108

Info — Tapered rod chucks

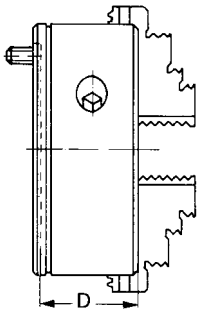


26405 - 26408 Three-jaw tapered-rod lathe chuck

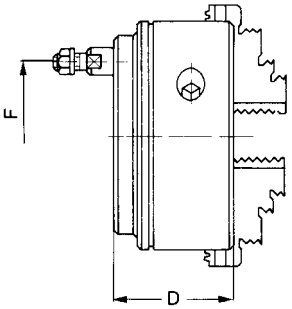
RÖHM

Scope of delivery:
- With plain jaws and hard interchangeable jaw grips reversible as turning and drilling jaws

Note:
For replacement jaws, see art. no. 26440–26443.



Centring mount in accordance with DIN 6350
(fixing screws from the rear)
For art. no. 26405



Short taper adapter in accordance with DIN 55027
(Stud bolt and collar nut)
For art. no. 26408

26405 - 26408

DIN 6350

Size mm	Clamping range outer mm	Clamping range inner mm	Borehole mm	Jaw stroke without offset mm	Rotation speed max. rpm	D mm	26405	...
125	3–129	26–123	32	4.8	6000	46.5		**100**
160	5–161	67–174	42	6.2	5400	63.0		**101**
200	7–207	71–214	52	6.8	4600	81.0		**102**
250	8–253	99–261	62	8.0	4200	92.0		**103**
315	12–323	102–319	87	10.2	3300	111.0		**104**

DIN 55027

Size mm	Short taper size mm	Clamping range outer mm	Clamping range inner mm	Borehole mm	Jaw stroke without offset mm	Rotation speed max. rpm	D mm	Outer hole circle F mm	26408	...
160	5	5–161	67–174	42	6.2	5400	78	104.8		**102**
200	5	6–207	71–214	52	6.8	4600	96	104.8		**103**
200	6	6–207	71–214	52	6.8	4600	97	133.4		**104**
250	6	8–253	99–261	62	8.0	4200	108	133.4		**106**
250	8	8–253	99–261	62	8.0	4200	110	171.4		**107**
315	8	12–323	102–319	87	10.2	3300	129	171.4		**109**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

26440 - 26443 Jaws sets for 3-jaw tapered-rod lathe chucks

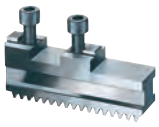
Design
Set = 3 pieces.
Applications
For three-jaw tapered-rod lathe chucks
art.-no. 26405–26408.

Note:
Replacement hard interchangeable jaw grips and undivided, hard stepped jaws are not ground for concentricity on the clamping surfaces. They must be ground in the chuck with clamping pressure applied while running.

26440

Stepped jaws
Hard, undivided, reversible turning and drilling jaws.

26441



Plain jaws
Hard.

26442

Interchangeable jaw grips
Hard, reversible as turning and drilling jaws.

26443

Interchangeable jaw grips
Soft.

For Size	26440 ...	26441 ...	26442 ...	26443 ...
125	100	100		100
160	101	101	101	101
200	102	102	102	102
250	103	103	103	103
315	104	104	104	104
400		105	105	105

26495 Lathe chuck jaws recessing attachment

ROHM

Design
Setting jaws reversible and continuously adjustable.

Applications
For 3-jaw lathe chucks. For recessing unhardened lathe chuck jaws and grinding hardened lathe chuck jaws.

26495

Size	Inner Ø mm	Outer Ø mm	Working range Inner Ø mm	Working range Outer Ø mm	For chuck Ø 26495	...
0	153	110	50–115	150–215	125	101
1	176	110	35–125	170–260	200	102
2	215	135	70–140	215–285	250	103
3	244	162	100–175	240–315	250	104
4	290	208	145–215	290–360	315	105

26497 - 26498 Workpiece stops for lathe chucks

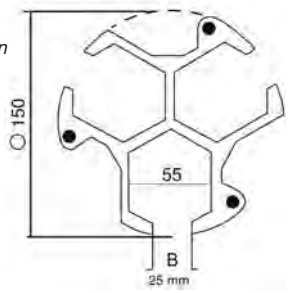
Design
- Made from aluminium
- Precision-ground bearing surfaces
- The material stop is attached to the lathe chuck by three magnets incorporated into the stop by simply placing it on the lathe chuck body
- Clamps turning workpieces from 15 to 130 mm diameter
- Suitable for three-jaw lathe chucks with jaw widths up to 56 mm

Applications
For clamping short turning workpieces in three-jaw chucks.

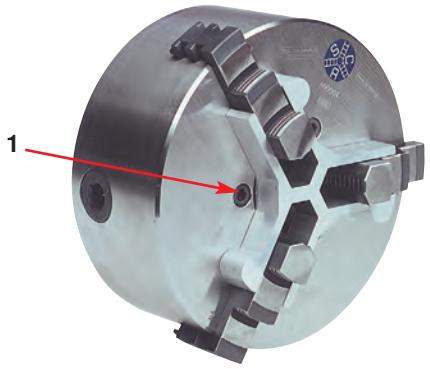
26497
- **Five pieces in set,** in wooden case
- Stop height 15/20/25/30/35 mm

26498
- **Material stop, single piece**

Note:
1) Material stop
Example application



26498



Stop height (thickness) mm	Set 26497 ...
Set 15–35	101

Stop height (thickness) mm	Individual 26498 ...
15	101
20	102
25	103
30	104
35	105

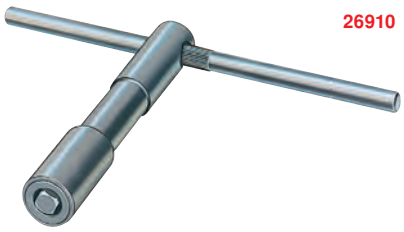
26910 Safety square stud keys

Design
With ejector pin in the face of the square.

Applications
For lathe chucks.

Note:
The key must be firmly pressed into the lathe chuck drive and held there until the clamping procedure is complete. The key is automatically ejected when the pressure is released.

26910



Square mm	26910 ...
8	102
9	103
10	104
11	105
12	106
14	107
17	108

26920 Hollow spindle stops

Design
With spreader key.

Applications
For lathes used for series production and single-part production.

Note:
The hollow spindle stop is clamped at the desired location in the machine spindle using the spreader key.

26920

Size	For spindle bore mm	26920 ...
1	20–27	101
2	25–33	103
3	32–41	104
4	40 - 50	105
5	48 - 60	106
6	58 - 76	107
7	75 - 96	109

Power chucks DURO-NCSE

- For straight-toothed jaws
- Jaw quick-change system with individual unlocking action
- Secures the positions of plain jaws

- The special construction with the tangentially arranged tapered rods has a positive effect on the centrifugal characteristics of the chuck
- This means lower clamping force losses and even higher rotation speeds (with large apertures)
- The individual unlocking action makes handling large workpiece-related special attachment jaws particularly easy

Further power chucks for high speeds

KFD-HS
- Power chuck with two, three and four jaws
- Large aperture
- High residual clamping force without centrifugal force compensation elements

DURO-NC
- Power chuck with quick jaw-change system
- Central unlocking of jaws
- Large aperture
- Universal pull bar connection

KFD U
- Power chuck with large aperture
- High concentricity and axial runout precision

KFD-N
- Power-clamp low-pull chuck only for external clamping
- High clamping accuracy

LVE
- Air-operated front end chuck
- High clamping force starting from 6 bar

26929 Three-jaw tapered-rod power chuck DIN 55028

ATORN®

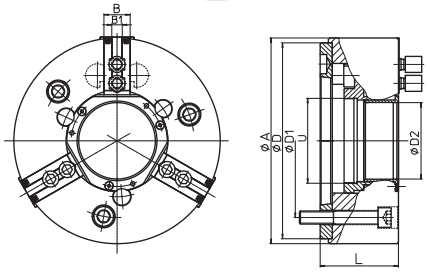
Design
- All-steel with hardened and ground guides and extremely large aperture
- With direct short taper adapter in accordance with DIN 55028
- Plain jaw intake 1/16 inch x 90°

Advantages:
- High clamping force and excellent clamping accuracy
- High maximum speed
- Low installation height

Scope of delivery:
Chuck with hard interchangeable jaw grips including T-slot screws and nuts.

Note:
Piston adapter (blank) with pre-bored hole diameter 20 mm for adaptation to the pull bar, see art. no. 26929 201–203.

26929



No.	26929 101	26929 102	26929 103
L mm:	91.5	100.0	118.5
W mm:	28	32	40
D h6 mm:	140	170	220
D1 mm:	104.8	133.4	171.4
D2 mm:	45	68	91
U mm:	M 55 x 1.5	M 80 x 1.5	M 102 x 1.5
B1 H7 mm:	10	12	14
Jaw stroke mm:	4.4	5.7	5.7
Max. clamping force kN:	60	90	118
Piston stroke mm:	13.5	17.5	17.5
Max. actuation force kN:	25	40	60
Weight kg:	11.5	17.5	30

Chuck Ø mm	Taper adapter	Clamping range mm	Max. rotation speed rpm	Power chucks 26929 ...	Piston adapters 26929 ...
160	A2-5	9–160	6300	101	201
200	A2-6	20–198	6300	102	202
250	A2-8	20–255	4500	103	203

26930 - 26931 Soft interchangeable jaw grips with 1/16 inch x 90° serration

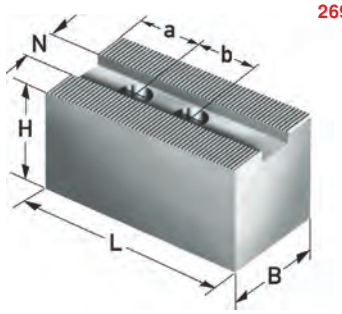
Design
Set = 3 pieces.
Applications
Suitable for power chuck brands: Berg, Forkardt, Gamet, Geiger and Haag, Pratt Burnerd, Röhm, SCHUNK, SMW and Autoblock.

Note:
Please compare toothing, groove width (N) and hole spacing (a, b) to make adjustments to the power chuck.

26930
Normal version

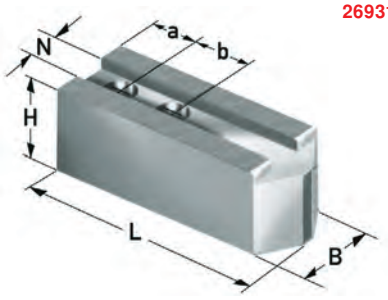
26931
Long version
Bevelled for small clamping diameters.

26930



For chuck Ø mm	Dim. L x W x H mm	a mm	b mm	Groove N mm	Thread DIN 912	Weight Approx. kg	Normal 26930 ...
160	70 x 40 x 60	15	22	17	M 12	3.1	101
200	90 x 40 x 60	25	22	17	M 12	4.2	102
250/315	120 x 50 x 80	30	28	21	M 16	9.3	103
400/500/630	155 x 60 x 90	30	35	25.5	M 20	16.3	104

26931

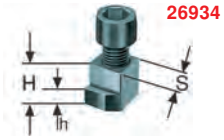


For chuck Ø mm	Dim. L x W x H mm	a mm	b mm	Groove N mm	Thread DIN 912	Weight Approx. kg	Long 26931 ...
160	78 x 35 x 40	15	22	17	M 12	1.7	101
200	98 x 35 x 40	15	22	17	M 12	2.4	102
250	120 x 50 x 50	20	28	21	M 16	5.4	103
315	140 x 50 x 50	30	28	21	M 16	6.2	104

26934 Sliding blocks for chucks with serration

Design
- With cheese head DIN 912-12.9
- Precision-ground and tempered

Applications
Suitable for all standard power chucks of brands: SCHUNK, Forkardt, Röhm and SMW.



26934

Groove width S G6 mm	H x h mm	Max. tightening torque Nm	Thread DIN 912	Suitable for Brands/type	26934	...
17.0	23 x 9	70	M 12	**Forkardt:** NH 160-200, NHF 160-200		101
17.0	23 x 9	70	M 12	**Schunk:** TH 165-210, THF 165-210		
17.0	23 x 9	70	M 12	**SMW:** HFKS 160-200, HFK 160-200		
17.0	22 x 9	70	M 12	**Röhm:** KFD 160-200, KFH 160-200		102
21.0	27 x 11	150	M 16	**Forkardt:** NH 250-315, NHF 250-315		103
21.0	27 x 11	150	M 16	**Schunk:** TH 250-315, THF 250-315		
21.0	27 x 11	150	M 16	**SMW:** HFKS 250-315, HFK 250-315		
21.0	25.5 x 11	150	M 16	**Röhm:** KFD 250-315, KFH 250-315		104
25.5	29 x 11	220	M 20	**Forkardt:** NH 400-500, NHF 400-500		105
25.5	29 x 11	220	M 20	**Schunk:** TH 380-500, THF 380-500		
25.5	29 x 11	220	M 20	**SMW:** HFKS 400, HFK 400-500		
25.5	33.7 x 15.5	220	M 20	**Röhm:** KFD 400-500, KFH 400-500		106

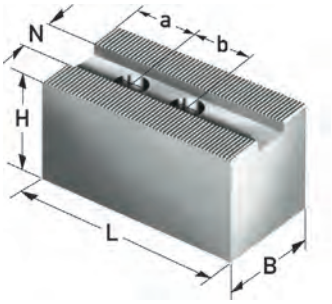
26936 - 26937 Soft interchangeable jaw grips with 1.5 mm x 60° serration

Design
Set = 3 pieces.
Applications
Suitable for lathe chuck brands: Kitagawa and Matsumoto.

Note:
Please compare toothing, groove width (N) and hole spacing (a, b) to make adjustments to the power chuck.

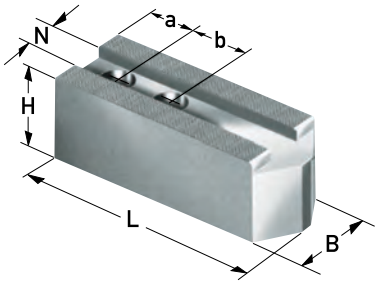
26936
Normal version

26937
Long version
Bevelled for small clamping diameters.



26936

For chuck Ø mm	Dim. L x W x H mm	a mm	b mm	Groove N mm	Thread DIN 912	Weight Approx. kg	Normal 26936	...
152	72 x 31 x 32	15	20	12	M 10	1.4		101
200	95 x 35 x 40	24	25	14	M 12	2.6		102
254	110 x 40 x 42	30	30	16	M 12	3.9		103
305	130 x 50 x 50	40	30	18	M 14	6.5		104
305/21	129 x 50 x 60	39	30	21	M 16	7.8		105



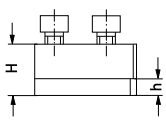
26937

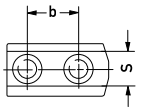
For chuck Ø mm	Dim. L x W x H mm	a mm	b mm	Groove N mm	Thread DIN 912	Weight Approx. kg	Long 26937	...
152	82 x 31 x 32	15	20	12	M 10	1.5		101
200	102 x 35 x 40	20	25	14	M 12	2.5		102
254	125 x 40 x 40	30	30	16	M 12	4.2		103
305	145 x 50 x 50	30	30	18	M 14	7.0		104

26939 Sliding blocks suitable for Kitagawa chucks

Design
- With cheese head DIN 912-12.9
- Tempered

Applications
For Japanese lathe chucks with 60° serration.



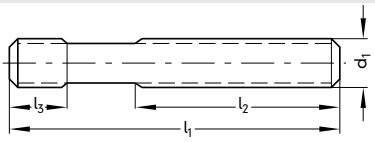


26939

Groove width S mm	H/h mm	b mm	Max. tightening torque Nm	Thread DIN 912-12.9	Suitable for Kitagawa chucks	26939	...
12	18.5/7.5	20	50	M 10	B06/B106/B206/BB06/BB206/ BBT206/BL206/BLT206/BS306/ BT206/H0H06/H0H106/H0H206/ML06/ MLT06/B07		101
14	20.5/8.5	25	70	M 12	B208/BB08/BB208 /BBT208/BL208/BLT 208/BS308/BT208/ H0H108/H0H208/MLT08		102
16	21.5/8.5	30	70	M 12	B210/BB10/BB210/BB BBT210/BL210/BLT210/ BS310/BT210/ H0H-10K/H0H110		103
18	33.5/13.5	30	130	M 14	B12/B300/HLA6-12/H0H12/H0S12/HLA6-15		104
21	28.0/11.5	30	150	M 16	BBT212/BL212/BLT212/BT212/H0H112/H0H112/H0H-12K		105

27003 Studs, DIN 6379

Design
Rolled thread, tempered, strength class
M 6–M 12 = 10.9, M 14–M 24 = 8.8.



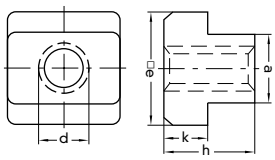
27003

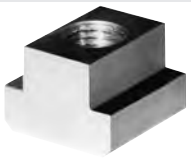
d_1 x l_1 mm	l_2 mm	l_3 mm	27003 ...
M 6 x 32	16	9	101
M 6 x 50	30	9	103
M 6 x 80	50	9	105
M 8 x 40	20	11	106
M 8 x 63	40	11	107
M 8 x 100	63	11	109
M 8 x 125	75	11	110
M 8 x 160	100	11	111
M 10 x 50	25	13	112
M 10 x 80	50	13	113
M 10 x 125	75	13	115
M 10 x 160	100	13	116
M 10 x 200	122	13	117
M 12 x 50	25	15	118
M 12 x 63	32	15	119
M 12 x 80	50	15	120
M 12 x 100	63	15	121
M 12 x 125	75	15	122
M 12 x 160	100	15	123
M 12 x 200	122	15	124
M 14 x 63	32	17	125
M 14 x 100	63	17	126
M 14 x 160	100	17	127
M 14 x 200	122	17	128
M 14 x 250	160	17	129

d_1 x l_1 mm	l_2 mm	l_3 mm	27003 ...
M 16 x 63	32	19	130
M 16 x 80	50	19	131
M 16 x 100	63	19	132
M 16 x 125	75	19	133
M 16 x 160	100	19	134
M 16 x 200	122	19	135
M 16 x 250	160	19	136
M 16 x 315	180	19	137
M 16 x 500	315	19	138
M 20 x 80	32	27	145
M 20 x 125	70	27	146
M 20 x 160	100	27	147
M 20 x 200	122	27	148
M 20 x 250	160	27	149
M 20 x 315	200	27	150
M 20 x 400	250	27	151
M 20 x 500	315	27	152
M 24 x 160	100	35	161
M 24 x 200	122	35	162
M 24 x 250	160	35	163
M 24 x 315	200	35	164
M 24 x 400	250	35	165
M 24 x 500	315	35	166
M 24 x 630	315	35	167

27004 T-sliding blocks, DIN 508

Design
Tempered, strength class 10.
Nuts marked with A = old standard 1928.





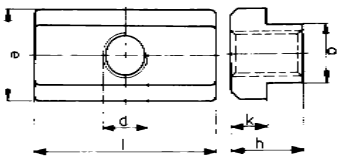
27004

d x nominal groove size	a mm	e mm	h mm	k mm	27004 ...
M 5 x 6	5.7	10	8	4	201
M 6 x 8	7.7	13	10	6	202
M 8 x 10	9.7	15	12	6	203
M 10 x 12	11.7	18	14	7	205
M 10 x 14 A	13.7	22	16	8	207
M 10 x 16 A	15.7	25	18	9	240
M 10 x 18 A	17.7	28	20	10	243
M 12 x 14	13.7	22	16	8	208
M 12 x 16 A	15.7	25	18	9	211
M 14 x 16 A	15.7	25	18	9	212

d x nominal groove size	a mm	e mm	h mm	k mm	27004 ...
M 14 x 18 A	17.7	28	20	10	216
M 16 x 18	17.7	28	20	10	217
M 16 x 20 A	19.7	32	24	12	218
M 18 x 20 A	19.7	32	24	12	219
M 16 x 22 A	21.7	35	28	14	220
M 20 x 22	21.7	35	28	14	222
M 20 x 24 A	23.7	40	32	16	224
M 20 x 28 A	27.7	44	36	18	227
M 24 x 28	27.7	44	36	18	229
M 24 x 36 A	35.6	54	44	22	232

27005 T-sliding blocks, long form

Design
Tempered, strength class 10.
Applications
This long form protects the table grooves on precision machines.



27005

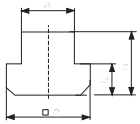
d x nominal groove size	a mm	e mm	l mm	h mm	k mm	27005 ...
M 6 x 8	7.7	13	26	10	6	202
M 8 x 10	9.7	15	30	12	6	203
M 10 x 12	11.7	18	36	14	7	204
M 12 x 14	13.7	22	44	16	8	205
M 14 x 16	15.7	25	50	18	9	206

d x nominal groove size	a mm	e mm	l mm	h mm	k mm	27005 ...
M 16 x 18	17.7	28	56	20	10	207
M 18 x 20	19.7	32	64	24	12	208
M 20 x 22	21.7	35	70	28	14	209
M 24 x 28	27.7	44	88	36	18	210

27006 T-sliding blocks, blanks

Design
Heat-treated steel, 0.35–0.45% C.

Applications
These blanks allow economical manufacture of nuts for T-grooves with non-standard threads.



27006

Nominal groove size	a mm	e mm	h mm	k mm	27006 ...
8	7.7	13	10	6	202
10	9.7	15	12	6	203
12	11.7	18	14	7	204
14	13.7	22	16	8	205
16	15.7	25	18	9	206
18	17.7	28	20	10	207

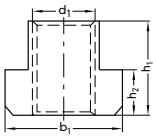
Nominal groove size	a mm	e mm	h mm	k mm	27006 ...
20	19.7	32	24	12	208
22	21.7	35	28	14	209
24	23.7	40	32	16	210
28	27.7	44	36	18	211
32	31.7	50	40	20	212
36	35.6	54	44	22	213

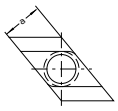
27007 T-sliding blocks, rhombic

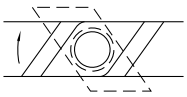
Design
Tempered, strength class M 10–M 12 = 8.
M 14–M 20 = 6.

Applications
Inserted into T-groove from above and turned.

Note:
Additional clamping point when fixture already clamped. An additional clamping point can be set up retrospectively even if the T-groove on the machine table is already occupied.







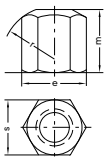
27007

d x nominal groove size	a mm	b_1 mm	h_1 mm	h_2 mm	27007 ...
M 10 x 12	11.7	18	14	7	101
M 12 x 14	13.7	22	16	8	102
M 14 x 16	15.7	25	18	9	103
M 16 x 18	17.7	28	20	10	104
M 20 x 22	21.7	35	28	14	106

27008 Nuts, H = 1.5 x d DIN 6330 B

Design
Tempered, strength class 10.
( ) = old standard.

Applications
For studs and T-groove screws. Can also be used with conical washers, art. no. 27017–27018.



27008

Thread	s mm	e mm	m 1.5 x d	r mm	27008 ...
M 6	10	11.05	9	9	301
M 8	13	14.40	12	12	302
M 10	16	17.80	15	15	303
M 10	(17)	18.90	15	15	304
M 12	18	20.03	18	17	305
M 12	(19)	21.10	18	17	306
M 14	21	23.40	21	20	307

Thread	s mm	e mm	m 1.5 x d	r mm	27008 ...
M 14	(22)	24.50	21	20	308
M 16	24	26.80	24	22	309
M 20	30	33.50	30	27	311
M 22	34	37.70	33	30	313
M 24	36	40.00	36	32	314
M 27	41	45.60	40	36	315

27009 - 27010 Nuts with collar, H = 1.5 x d DIN 6331

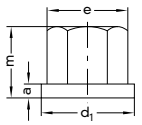
Design
Tempered, strength class 10.
( ) = old standard.

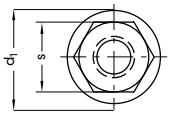
Applications
For studs and T-groove screws.

27009
Design
Turned and milled.

27010
Design
Forged.

27009





Thread	s mm	e mm	m 1.5 x d	a mm	d_1 mm	27009 ...	27010 ...
M 6	10	11.05	9	3.0	14		201
M 8	13	14.40	12	3.5	18	202	202
M 10	16	17.80	15	4.0	22		203
M 10	(17)	18.90	15	4.0	22	204	
M 12	18	20.03	18	4.0	25		204
M 12	(19)	21.10	18	4.0	25	206	
M 14	21	23.40	21	4.5	28	207	
M 14	(22)	24.50	21	4.5	28	208	
M 16	24	26.80	24	5.0	31	209	205
M 18	27	30.10	27	5.0	34		206
M 20	30	33.50	30	6.0	37	211	207
M 22	34	37.70	33	6.0	40	213	
M 24	36	40.00	36	6.0	45	214	208
M 27	41	45.60	40	8.0	50	215	209

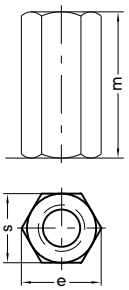
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27013 Extension nuts, H = 3.0 x d

Design
Tempered, strength class 10.
( ) = old standard.

Applications
The extension nut will serve as any connection element between DIN 787 (screw for T-grooves, art. no. 27015) and DIN 6379 (stud screw art. no. 27003) and is not suitable for screw fixing. For functional and safety reasons, both screws should be screwed in to half the nut height. Minimum screw-in length = 1 x diameter.

27013



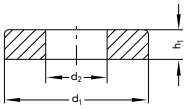
Thread	s mm	e mm	m 3.0 x d	27013	...
M 6	10	11.05	18		101
M 8	13	14.40	24		102
M 10	(17)	18.90	30		104
M 12	18	20.03	36		105
M 12	(19)	21.10	36		106
M 14	21	23.40	42		107
M 14	(22)	24.50	42		108
M 16	24	26.80	48		109
M 18	27	30.10	54		110
M 20	30	33.50	60		111
M 22	34	37.70	66		113
M 24	36	40.00	72		114
M 27	41	45.60	81		115

27014 Washers, DIN 6340

Design
Extra thick and large, stamped.
Tempered, 1200–1400 N/mm² strength.

Note:
Dimensions according to DIN, but stamped and flat-pressed. ( ) DIN extended.

27014



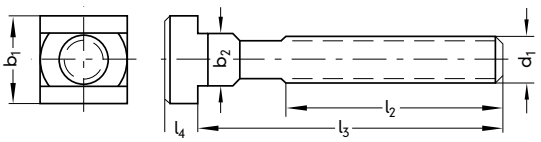
For screws	d_2 mm	d_1 mm	h_1 mm	27014	...
M 6	6.4	17	3		201
M 8	8.4	23	4		202
M 10	10.5	28	4		203
M 12	13.0	35	5		204
(M 14)	15.0	40	5		205
M 16	17.0	45	6		206
(M 18)	19.0	45	6		207
M 20	21.0	50	6		208
(M 22)	23.0	50	8		209
M 24	25.0	60	8		210
(M 27)	28.0	68	10		211
M 30	31.0	68	10		212

27015 T-groove screws (clamping screws), DIN 787

Design
Includes nut and washer to DIN 6340 and high nut to DIN 6330 D. Forged, tempered, strength class M 8–M 12 = 10.9, M 14–M 28 = 8.8, head and screw in one piece.
Rolled thread, precisely milled groove guide.

Note:
T-groove screws to DIN 787 with other lengths and thread sizes, screws also deliverable without nut and washer, and with strength class 12.9 on request.

27015



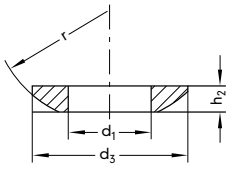
Nominal groove size	d_1 x l_3 mm	l_2 mm	b_2 mm	b_1 mm	l_4 mm	27015 ...
8	M 8 x 32	22	7.7	13	6	304
8	M 8 x 50	35	7.7	13	6	305
8	M 8 x 80	50	7.7	13	6	306
10	M 10 x 63	45	9.7	15	6	308
10	M 10 x 100	60	9.7	15	6	309
12	M 12 x 50	35	11.7	18	7	310
12	M 12 x 63	40	11.7	18	7	311
12	M 12 x 80	55	11.7	18	7	312
12	M 12 x 125	75	11.7	18	7	313
12	M 12 x 200	120	11.7	18	7	314
14	M 12 x 50	35	13.7	22	8	315
14	M 12 x 63	45	13.7	22	8	316
14	M 12 x 80	55	13.7	22	8	317
14	M 12 x 125	75	13.7	22	8	318
14	M 12 x 200	120	13.7	22	8	319
16	M 14 x 63	45	15.7	25	9	320
16	M 14 x 100	65	15.7	25	9	321
16	M 14 x 160	100	15.7	25	9	322
16	M 14 x 250	120	15.7	25	9	323
16	M 16 x 63	45	15.7	25	9	324
16	M 16 x 80	55	15.7	25	9	325
16	M 16 x 100	65	15.7	25	9	326

Nominal groove size	d_1 x l_3 mm	l_2 mm	b_2 mm	b_1 mm	l_4 mm	27015 ...
16	M 16 x 160	100	15.7	25	9	327
16	M 16 x 200	125	15.7	25	9	328
16	M 16 x 250	150	15.7	25	9	329
18	M 16 x 63	45	17.7	28	10	330
18	M 16 x 100	65	17.7	28	10	332
18	M 16 x 160	100	17.7	28	10	333
18	M 16 x 200	125	17.7	28	10	334
18	M 16 x 250	150	17.7	28	10	335
20	M 20 x 80	55	19.7	32	12	336
20	M 20 x 125	85	19.7	32	12	337
20	M 20 x 160	110	19.7	32	12	338
20	M 20 x 200	125	19.7	32	12	339
22	M 20 x 100	65	21.7	35	14	342
22	M 20 x 125	85	21.7	35	14	343
22	M 20 x 160	110	21.7	35	14	344
22	M 20 x 200	125	21.7	35	14	345
24	M 24 x 160	110	23.7	40	16	346
24	M 24 x 200	125	23.7	40	16	347
28	M 24 x 100	70	27.7	44	18	348
28	M 24 x 160	110	27.7	44	18	350
28	M 24 x 250	150	27.7	44	18	352

27016 Spherical washers, DIN 6319 C

Design
Case-hardened and phosphated.

Note:
Spherical washers and conical washers are used to transmit clamping forces in cases where clamping elements need to be adapted to uneven clamping surfaces. Pairing spherical washers or nuts to DIN 6330 with conical washers enables the associated clamping bolt to be swivelled out by 3°.



27016

For screws	d_1 mm	d_3 mm	h_2 mm	r mm	27016 ...
M 6	6.4	12	2.3	9	101
M 8	8.4	17	3.2	12	102
M 10	10.5	21	4.0	15	103
M 12	13.0	24	4.6	17	104

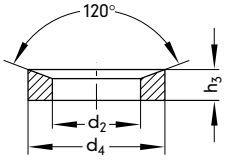
For screws	d_1 mm	d_3 mm	h_2 mm	r mm	27016 ...
M 14	15.0	28	5.0	22	105
M 16	17.0	30	5.3	22	106
M 20	21.0	36	6.3	27	107
M 24	25.0	44	8.2	32	108

27017 Conical washers, DIN 6319 D

Design
Case-hardened and phosphated.
Suitable for screw strength according to 8.8.

Applications
Use only **for flat enclosed ring surfaces** (not permitted for slotted holes; for this we recommend art. no. 27018).

Note:
See art. no. 27016.



27017

For screws	max. (kN)	d_2 mm	d_4 mm	h_3 mm	27017 ...
M 6	9	7.1	12	2.8	101
M 8	17	9.6	17	3.5	102
M 10	26	12.0	21	4.2	103
M 12	38	14.2	24	5.0	104

For screws	max. (kN)	d_2 mm	d_4 mm	h_3 mm	27017 ...
M 14	53	16.5	28	5.6	105
M 16	73	19.0	30	6.2	106
M 20	117	23.2	36	7.5	107
M 24	168	28.0	44	9.5	108

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27018 Conical washers, DIN 6319 G

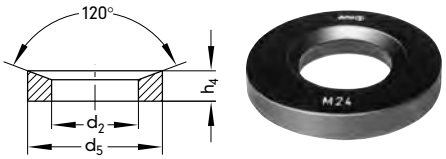
Design
Stamped, pressed and tempered.

Applications
Due to the large diameter, this conical washer is particularly suitable for clamping over the slot in clamps.

Note:
Spherical washers and conical washers are used to transmit clamping forces in cases where clamping elements need to be adapted to uneven clamping surfaces. Pairing spherical washers or nuts to DIN 6330 with conical washers enables the associated clamping bolt to be swivelled out by 3 °.

For screws	d_2 mm	d_5 mm	h_4 mm	27018 ...
M 6	7.1	17	4	101
M 8	9.6	24	5	102
M 10	12.0	30	5	103
M 12	14.2	36	6	104
M 14	16.5	40	6	105
M 16	19.0	44	7	106
M 20	23.2	50	8	107
M 24	28.0	60	10	108

27018



27020 Clamping screw sets for T-grooves

Design
All parts tempered, strength classes 8 and 10. The extension nuts, art. no. 27013, and studs, art. no. 27003, enable any clamping heights to be achieved. In wooden box.

27020

Nominal groove size	Thread	27020 ...
10	M 10	101
12	M 12	102
14	M 12	103
16	M 14	104
18	M 16	106
22	M 20	108

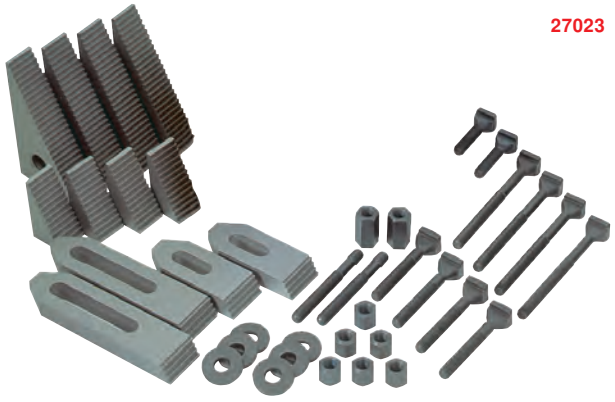
Set contents: Nominal groove size	Thread, metric	Art. no. 27015 T-groove screws DIN 787	Art. no. 27003 Each 4 x studs DIN 6379	Art. no. 27004 Sliding blocks DIN 508	Art. no. 27008 Hexagon nuts DIN 6330 B	Art. no. 27013 Extension nuts	Art. no. 27014 Washers DIN 6340	Art. no. 27016 + 018 Spherical washers, conical washers DIN 6319 C + G
mm		Pieces/length mm	Length mm	Pieces	Pieces	Pieces	Pieces	Set
10	M 10	2/40, 4/63, 4/100	50, 80, 200	-	4	4	4	4
12	M 12	2/50, 4/80, 4/125	63, 100, 200	-	4	4	4	4
14	M 12	2/50, 4/80	63, 100, 125, 200	4	4	4	4	4
16	M 14	2/63, 4/100	63, 100, 160, 250	4	4	4	4	4
18	M 16	2/63, 4/100	80, 125, 160	4	4	4	4	4
22	M 20	2/80, 4/125	80, 125, 200, 315	4	4	4	4	4

27023 Clamping screw basic assortments

Design
All parts made of heat-treated steel, T-groove screws tempered, thread rolled.

Applications
Ideal for toolmaking, manufacturing and training facilities.

27023



Nominal groove size	Thread	27023 ...
14	M 12	101
16	M 14	102
18	M 16	103

Set contents: Nominal groove size	Thread, metric	Art. no. 27103 Clamps	Art. no. 27125 Clamping supports	Art. no. 27015 T-groove screws DIN 787	Art. no. 27003 Studs DIN 6379	Art. no. 27008 Hexagon nuts DIN 6330 B	Art. no. 27013 Extension nuts	Art. no. 27014 Washers DIN 6340
mm		Pieces/length mm	Pieces/size	Pieces/length mm	Pieces/length mm	Pieces	Pieces	Pieces
14	M 12	2/100, 2/160	4/size 2, 4/size 3	2/50, 4/80, 4/125	2/100	6	2	6
16	M 14	2/100, 2/160	4/size 2, 4/size 3	2/63, 4/100, 4/160	2/100, 2/160	6	2	6
18	M 16	2/125, 2/200	4/size 2, 4/size 3	2/63, 4/100, 4/160	2/100, 2/160	6	4	6

27024 Screw paste

Design
Mineral fat-based paste with synergic combination of highly effective white solid lubricants. Heat resistant and resistant to washout.

Applications
For the lubrication of frequently operated screws or nuts in clamping devices, especially when aggressive coolants are used.

27024

Contents ml	Temperature operating conditions °C	27024	...
75	-25 to +125		101

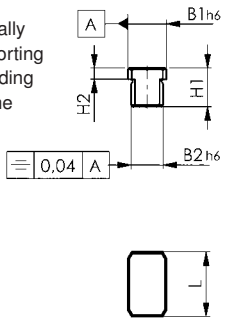
27038 Loose sliding blocks, DIN 6323

Design
Case-hardened and ground.
Applications
The sliding blocks are inserted laterally after rough alignment. When transporting jigs, there is no interference from sliding blocks protruding underneath and the machine table cannot be damaged.

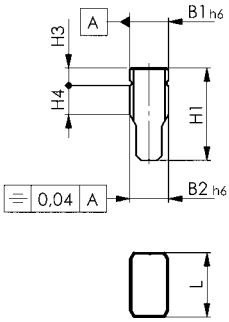
27038 101-102
For small machines: Jig groove 12.

27038 106-113
For large machines: Jig groove 20.

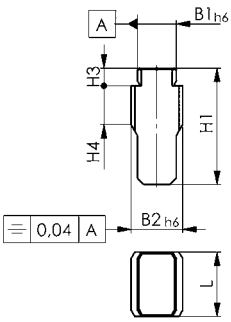
Type A — B1 > B2



Type B — B1 = B2



Type C — B1 < B2



Type A

Type B

Type C

27038

Nominal sizeof grooves for

Machine B2 mm	Jig B1 mm	Shape	H1 mm	H2 mm	H3 mm	H4 mm	L mm	27038	...
10	12	A	12.0	3.6	-	-	20		101
12	12	B	28.6	-	5.5	9	20		102
12	20	A	14.0	5.5	-	-	32		106
14	20	A	14.0	5.5	-	-	32		107
16	20	A	14.0	5.5	-	-	32		108

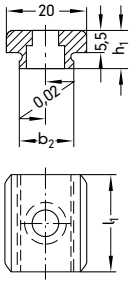
Nominal sizeof grooves for

Machine B2 mm	Jig B1 mm	Shape	H1 mm	H2 mm	H3 mm	H4 mm	L mm	27038	...
18	20	A	14.0	5.5	-	-	32		109
20	20	B	45.5	-	7.0	16	32		110
22	20	C	50.5	-	7.0	18	40		111
24	20	C	55.5	-	7.0	20	40		112
28	20	C	61.5	-	7.0	24	40		113

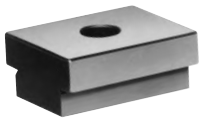
27040 Fixed sliding blocks, DIN 6322 A

Design
Case-hardened and ground.

Applications
Fixed sliding blocks are installed in pairs in the standard 20 mm-wide aligning grooves of vices or jigs. Changing the sliding blocks makes it possible to work on machines with different groove widths. For particularly heavy jigs we recommend loose sliding blocks to DIN 6323 (art. no. 27038).



27040



Nominal sizeof grooves for

Machine b_2 mm	Jig mm	h_1 mm	l_1 mm	Cyl. screws	27040	...
10	20	10	22	M 6 x 10		301
12	20	10	22	M 6 x 10		302
14	20	10	25	M 6 x 16		303
16	20	10	25	M 6 x 16		304
18	20	10	25	M 6 x 16		305

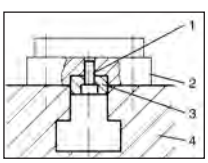
Nominal sizeof grooves for

Machine b_2 mm	Jig mm	h_1 mm	l_1 mm	Cyl. screws	27040	...
22	20	12	32	M 6 x 16		306
24	20	12	32	M 6 x 16		307
28	20	12	32	M 6 x 16		308
36	20	12	32	M 6 x 16		309

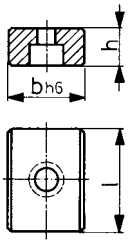
27041 Flat sliding blocks, DIN 6322 B

Design
Case-hardened and ground.
Applications
Flat sliding blocks are particularly useful and cost-effective if a jig is always used on the same machine.

For particularly heavy jigs we recommend loose sliding blocks to DIN 6323 (art. no. 27038).



Note:
1 = Screw
2 = Jig
3 = Sliding block
4 = Machine table



27041

w mm	h mm	l mm	Cyl. screws	27041	...
10	8	20	M 4 x 10		301
12	8	20	M 5 x 12		302
14	10	22	M 6 x 16		303
16	10	22	M 6 x 16		304

w mm	h mm	l mm	Cyl. screws	27041	...
18	10	22	M 6 x 16		305
20	10	22	M 6 x 16		306
22	12	32	M 6 x 16		307
24	12	32	M 6 x 16		308

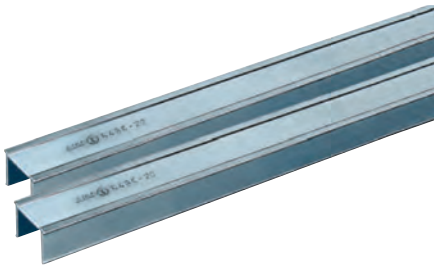
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27062 T-groove covers

Design
Made of aluminium profile. Can be cut to the desired length with a fine saw blade.

Applications
No more time-consuming cleaning of the machine groove after machining. Always cover the free grooves before machining. The cover strips can be easily removed after machining.

27062



For T-grooves mm	Length mm	27062 ...
12	1000	101
14	1000	102
16	1000	103
18	1000	104
20	1000	105
22	1000	106
28	1000	107
36	1000	108

27063 Groove scrapers

AMF

27063 101

27063 102

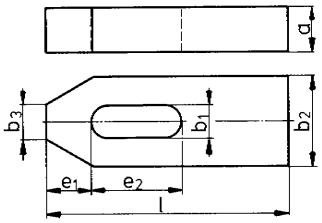
Suitable for T-grooves mm	27063 ...
14 - 20	101
22–32	102

27101 Clamps, single, DIN 6314

AMF

Design
Heat-treated steel, painted.

27101



b1 mm	l mm	For screws	a mm	b2 mm	b3 mm	e1 mm	e2 mm	27101 ...
9	60	M 8	12	25	10	13	22	102
11	80	M 10	15	30	12	15	30	103
14	100	M 12/M 14	20	40	14	21	40	104
14	125	M 12/M 14	20	40	14	21	50	105
18	125	M 16/M 18	25	50	18	26	45	106
18	160	M 16/M 18	25	50	18	26	65	107
22	160	M 20/M 22	30	60	22	30	60	108
22	200	M 20/M 22	30	60	22	30	80	109

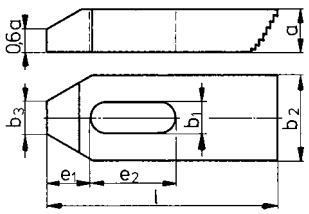
27103 Clamps with stepped teeth

AMF

Design
With stepped teeth, heat-treated steel, painted.

Note:
Can only be used in conjunction with toothed clamping supports, art. no. 27124–27125.

27103



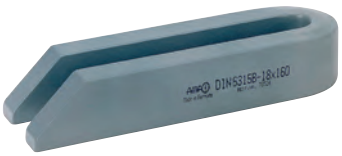
b1 mm	l mm	For screws	a mm	b2 mm	b3 mm	e1 mm	e2 mm	27103 ...
9	60	M 8	12	25	10	13	22	102
11	80	M 10	15	30	12	15	30	103
14	100	M 12/M 14	20	40	14	21	40	104
18	125	M 16/M 18	25	50	18	26	45	105
22	160	M 20/M 22	30	60	22	30	60	106

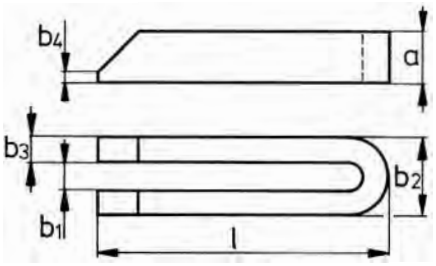
27105 Fork clamps, bevelled, DIN 6315 B

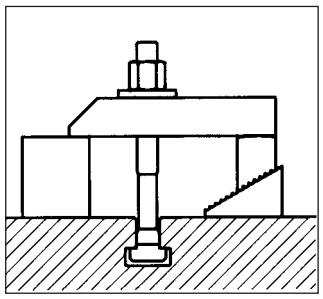
Design
Bevelled, heat-treated steel, painted.

27105

b_1 mm	l mm	For screws	a mm	b_2 mm	b_3 mm	b_4 mm	27105	...
6.6	60	M 6	12	19	6	3		201
9	80	M 8	15	25	8	4		202
11	100	M 10	20	31	10	5		203
14	125	M 12/M 14	25	38	12	6		204
14	160	M 12/M 14	25	38	12	6		205
14	200	M 12/M 14	25	38	12	6		206
18	160	M 16/M 18	30	48	15	8		207
18	200	M 16/M 18	30	48	15	8		208
18	250	M 16/M 18	40	48	15	10		209
22	200	M 20/M 22	40	52	15	10		210
22	250	M 20/M 22	40	62	20	10		211
22	315	M 20/M 22	40	62	20	10		212
22	500	M 20/M 22	50	62	20	10		213
26	200	M 24	40	66	20	10		214
26	250	M 24	40	66	20	10		215
26	315	M 24	40	66	20	10		216
26	500	M 24	50	66	20	10		217
33	250	M 30	50	74	20	12		218
33	315	M 30	50	74	20	12		219
33	400	M 30	50	74	20	12		220
33	600	M 30	50	74	20	12		221





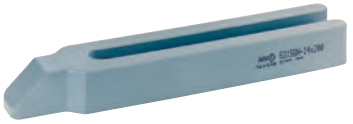


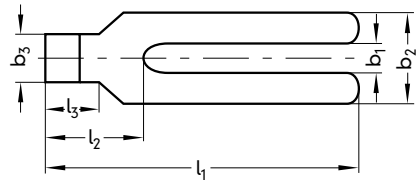
27106 Fork clamps with lug

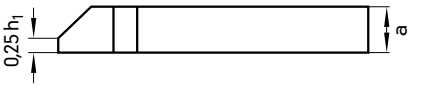
Design
With lug, heat-treated steel, painted.

27106

b_1 mm	l_1 mm	For screws	a mm	b_2 mm	b_3 mm	l_2 mm	l_3 mm	27106	...
9	100	M 8	15	30	16	32	18		101
11	125	M 10	20	30	20	38	24		102
14	160	M 12/M 14	25	40	24	47	30		103
14	200	M 12/M 14	25	40	24	47	30		104
18	200	M 16/M 18	30	50	28	57	36		105
18	250	M 16/M 18	30	50	28	57	36		106
22	250	M 20/M 22	40	60	35	68	45		107
22	315	M 20/M 22	40	60	35	68	45		108
26	250	M 24	40	70	43	83	56		109
26	315	M 24	40	70	43	83	56		110
33	315	M 30	50	80	50	88	56		111
33	400	M 30	50	80	50	88	56		112





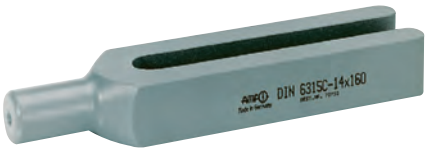


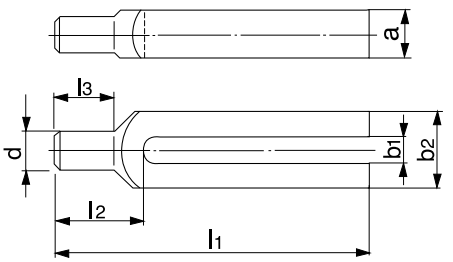
27108 Fork clamps with round clamping attachment, DIN 6315 C

Design
With round clamping attachment.
Heat-treated steel, painted.

27108

b_1 mm	l_1 mm	For screws	a mm	b_2 mm	d mm	l_2 mm	l_3 mm	27108	...
9	100	M 8	15	30	12	30	18		101
11	125	M 10	20	30	16	36	24		102
14	160	M 12/M 14	25	40	20	45	30		103
14	200	M 12/M 14	25	40	20	45	30		104
18	200	M 16/M 18	30	50	24	55	36		105
18	250	M 16/M 18	30	50	24	55	36		106
22	250	M 20/M 22	40	60	30	65	45		107
22	315	M 20/M 22	40	60	30	65	45		108
26	250	M 24	40	70	38	80	56		109

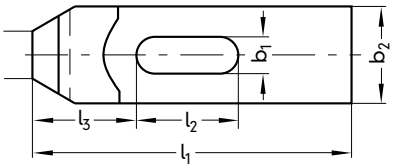


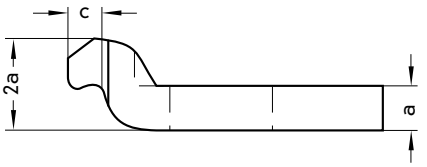


27110 Clamps, depressed centre, DIN 6316

Design
Single depressed centre, heat-treated steel, painted.
() not to DIN.

27110



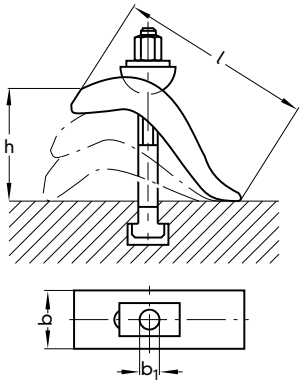


b_1 mm	l_1 mm	For screws	a mm	b_2 mm	c mm	l_3 mm	l_2 mm	27110	...
6.6	60	M 6	10	20	8	22.0	20		**101**
9	80	M 8	12	25	9	27.5	25		**102**
11	100	M 10	15	30	12	36.0	32		**103**
14	125	M 12/M 14	20	40	16	44.0	40		**104**
18	125	M 16/M 18	25	50	20	51.5	40		**105**
18	160	M 16/M 18	25	50	20	51.5	50		**106**
22	160	M 20/M 22	30	60	24	59.0	55		**107**
22	200	M 20/M 22	30	60	24	59.0	70		**108**
26	200	M 24	(35)	70	25	76.5	60		**109**
26	250	M 24	(35)	70	25	76.5	80		**110**
33	250	M 30	40	80	40	96.0	80		**111**
33	315	M 30	50	80	40	96.0	100		**112**

27111 Adjustable clamps

Design
Infinitely adjustable, steel, forged, tempered and zinc-plated. Strength class 8. With screws for T-groove to DIN 787 (8.8), nut and washer.
Applications
The infinitely variable adjustable clamps quickly span various clamping heights without additional support and require little space on the machine table.

27111



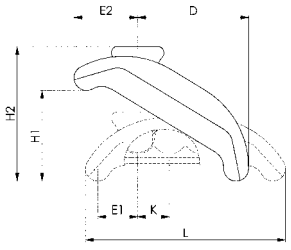
Nominal groove size	b_1 mm	Screw Ø x length mm	Clamping height h mm	b x l mm	27111	...
12	17	M 12 x 125	0–50	50 x 140		**101**
14	17	M 12 x 125	0–50	50 x 140		**102**
16	17	M 16 x 160	0–75	50 x 140		**103**
18	17	M 16 x 160	0–75	50 x 140		**104**
22	21	M 20 x 200	0–85	60 x 175		**107**

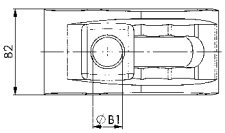
27112 Adjustable clamps, short

Design
With U-piece, infinitely adjustable, tempered, zinc-plated and blue passivated. **Without clamping screw.**

Note:
For detent clamp levers for clamps, see art. no. 27117.

27112





B1 mm	H1 mm	B2 x L mm	D mm	E1 mm	E2 mm	H2 mm	K mm	Suitable screws DIN 787 no. 27015	Suitable flanged nuts no. 27008	27112	...
13	0–35	38 x 88	48	23	28	30–55	14	12 M 12 x 100/14 M 12 x 100	M 12		**101**
18	0–55	56 x 130	74	29	38	42–84	18	16 M 16 x 160/18 M 16 x 160	M 16		**102**
22	0–65	66 x 140	80	32	46	50–100	20	20 M 20 x 200/22 M 20 x 200	M 20		**103**
26	0–75	76 x 174	100	39	52	54–111	24	24 M 24 x 200/28 M 24 x 200	M 24		**104**

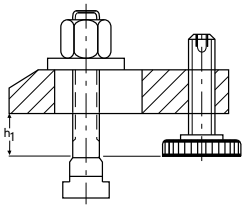
27115 Adjustable clamps

Design
Straight, with adjustable support screw, screw for T-grooves to DIN 787 (8.8), nut and washer. Heat-treated steel, painted.

Applications
For low workpieces.

Note:
For detent clamp levers for clamps, see art. no. 27117.

27115



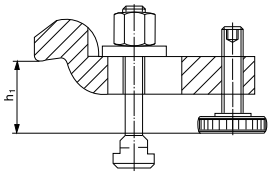
Nominal groove size	Clamping range h_1 mm	Clamp dimensions see also no. 27101	T-groove screw DIN 787 no. 27015	Support screw	27115	...
10	8–32	11 x 80	10 M 10 x 80	M 10 x 39		101
12	10–40	14 x 100	12 M 12 x 100	M 12 x 49		102
14	10–38	14 x 100	14 M 12 x 100	M 12 x 49		103
16	13–48	18 x 125	16 M 16 x 125	M 16 x 55		104
18	13–46	18 x 125	18 M 16 x 125	M 16 x 55		105
20	16–65	22 x 160	20 M 20 x 160	M 20 x 69		106
22	16–65	22 x 160	22 M 20 x 160	M 20 x 69		107

27116 Adjustable clamps, depressed centre

Design
Depressed centre, with adjustable support screw, screw for T-grooves to DIN 787 (8.8), nut and washer. Heat-treated steel, painted.

Note:
For detent clamp levers for clamps, see art. no. 27117.

27116

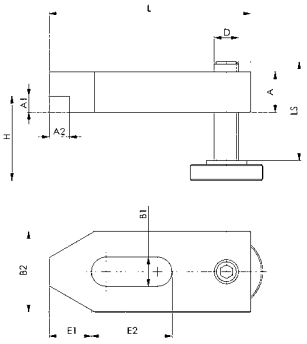


Nominal groove size	Clamping range h_1 mm	Clamp dimensions see also no. 27101	T-groove screw DIN 787 no. 27015	Support screw	27116	...
10	22–46	11 x 100	10 M 10 x 80	M 10 x 39		101
12	28–58	14 x 125	12 M 12 x 100	M 12 x 49		102
14	28–56	14 x 125	14 M 12 x 100	M 12 x 49		103
16	36–71	18 x 160	16 M 16 x 125	M 16 x 55		104
18	36–69	18 x 160	18 M 16 x 125	M 16 x 55		105
20	43–92	22 x 200	20 M 20 x 160	M 20 x 69		106
22	43–92	22 x 200	20 M 20 x 160	M 20 x 69		107

27118 Adjustable clamps, recessed

Design
Recessed, with adjustable support screw. Clamps without support screws are of one size for sizes 12 and 14, sizes 16 and 18, and sizes 20 and 22. Heat-treated steel, painted.

Note:
Supplied without clamping screw.
For detent clamp levers for clamps, see art. no. 27117.



27118

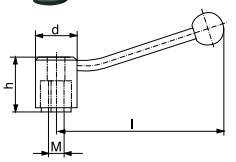
Nominal groove size	Clamping range H mm	Clamp B1 x L mm see also no. 27101	Support screw D x LS mm	A mm	A1 x A2 mm	B2 mm	E1 mm	E2 mm	27118	...
12 + 14	10–55	14 x 100	M 12 x 49	20	8 x 10.0	40	40	40		101
16 + 18	13–62	18 x 125	M 16 x 55	25	10 x 12.5	50	45	45		102
20 + 22	16–77	22 x 160	M 20 x 69	30	12 x 15.0	60	60	60		103

27117 Detent clamp levers

Design
Steel, bronzed. Thread on the clamp lever
M 12 suitable for nominal groove size 12 and 14,
M 16 suitable for nominal groove size 16 and 18.

Applications
For clamps and adjustable clamps art. no. 27112–27116 + 27118.

27117



Size	l mm	d mm	h mm	27117	...
M 12	135	33	48		101
M 16	158	40	64		102

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27123 Clamping tool assortment box sets

Design
With deep clamping jaws and screw paste. The clamping tool assortment boxes are designed for machine tools with T-groove tables and contain all necessary elements for fast clamping of tools, jigs or workpieces. All parts are made from heat-treated steel to DIN or factory standards. Strength class for screw parts: 8 or 10. The wooden box has a removable hinged lid.

Note:
The deep clamping jaws are supplied with nuts for T-grooves to DIN 508, screws to DIN 912 and 2 hexagonal screwdrivers to DIN 911. All parts are also deliverable individually.

27123

Nominal groove size x thread	T 10 x M 10	T 12 x M 12	T 14 x M 12	T 18 x M 16
Clamping height, 2 times	2 – 230	2 – 270	2 – 270	2 – 270
or 4 times	2 – 140	2 – 160	2 – 160	2 – 160
Set contents:	Art. no. 27123 101	Art. no. 27123 102	Art. no. 27123 103	Art. no. 27123 105
Each of the 4 clamping supports	Sizes 1 + 2	Sizes 2 + 3	Sizes 2 + 3	Sizes 2 + 3
Each of the 2 clamping supports	Size 3	-	-	-
4 clamps	M 11 x 80	M 14 x 100	M 14 x 100	M 18 x 125
Each of the 4 T-groove screws	M 10 x 63/M10 x 100	M 12 x 80/M 12 x 125	M 12 x 80/M 12 x 125	M 16 x 100/M 16 x 160
Each of the 2 T-groove screws	M 10 x 40	M 12 x 50	M 12 x 50	M 16 x 63
4 studs	M 10 x 80	M 12 x 100	M 12 x 100	M 16 x 125
6 high nuts	M 10	M 12	M 12	M 16
4 extension nuts	M 10	M 12	M 12	M 16
6 conical washers	M 10	M 12	M 12	M 16
4 deep clamping jaws	Groove 12	Groove 12	Groove 14	Groove 18
1 groove scraper	-	-	14–20	14–20
1 open-ended wrench	16 x 16	18 x 18	18 x 18	24 x 24
1 screw paste	1	1	1	1

Nominal groove size x thread	27123 ...
T 10 x M 10	101
T 12 x M 12	102
T 14 x M 12	103
T 18 x M 16	105

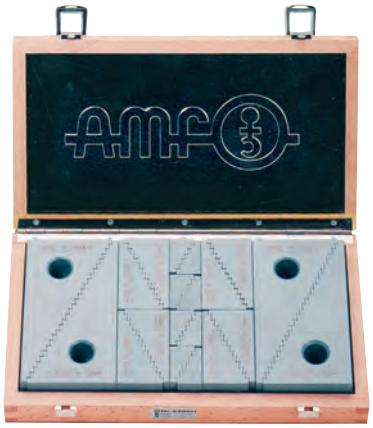
27124 Universal clamping support set

Design
Heat-treated steel, painted.

Contents:
4 pairs each of sizes 1 and 2,
2 pairs of size 3,
in the wooden box.

Applications
Can be used horizontally and vertically, step height: 4.65 mm vertically, 2.3 mm horizontally.

27124



	27124 ...
	101

27125 Universal clamping supports

Design
Heat-treated steel, painted. **Individual.**
Applications
Can be used horizontally and vertically. Step height: 4.65 mm vertically, 2.3 mm horizontally.

Note:
The universal clamping supports can be combined in pairs with all clamps art. no. 27101, 27105–27110 and individually with the toothed clamps art. no. 27103.

27125

Size	Height x width x thickness mm	Support height min. mm	Support height max. mm	27125 ...
1	33 x 19.0 x 30	23	51	101
2	66 x 35.5 x 30	39	107	102
3	131 x 68.0 x 30	71	208	103

27135 Screw jacks

Design
With flat support, centring hole Ø 12 mm, self-locking trapezoidal thread, with end protection. Lower part and spindle in heat-treated steel, painted.

Note:
Aluminium and magnetic screw jacks deliverable on request. For aligning attachments see art. no. 27145.

27135 201
Lightweight screw jack without centring hole.

27135 202-204
Medium-weight screw jacks.

27135 205-207
Heavy screw jacks.
Applications
For alignment and support.

27135 208
Extra-heavy screw jack.
Applications
To support large workpieces.

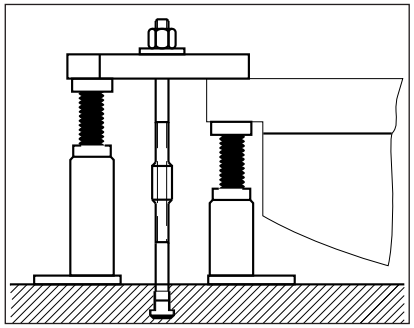
Size	Adjustment height mm	Head Ø mm	Lower part Ø mm	Load capacity kN	For clamp slot width mm	27135	...
50	38–50	31	31	25	Up to 14		**201**
52	42–52	50	50	100	14–22		**202**
70	50–70	50	50	100	14–22		**203**
100	70–100	50	50	100	14–22		**204**
140	100–140	68	68	120	20–40		**205**
210	140–210	70	80	170	20–40		**206**
300	190–300	80	100	350	20–40		**207**
200	140–200	80	100	350	20–40		**208**

27135

27138 Atlas screw jacks

Design
- With lock nut
- Centring hole Ø 12 mm
- Spindle complete: Heat-treated steel, with trapezoidal thread
- Spindle head painted
- Basic body: Grey cast iron, painted

Note:
Heavy screw jacks with locking screw, aligning and support jacks deliverable on request. For aligning attachments see art. no. 27145. When using clamps art. no. 27105, 27108 and 27106 109–112, for safety reasons we recommend the fixing attachment (art. no. 27145 103–104).



27138

Size	Adjustment height mm	Base plate mm	Load capacity kN	27138	...
140	100–140	75 x 110	60		**101**
200	140–200	75 x 110	60		**102**
320	200–320	90 x 160	40		**103**
550	320–550	90 x 160	25		**104**

27140 Alignment wedges, HERKULES (height wedge)

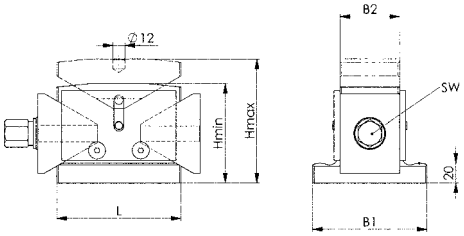
Design
Centring hole Ø 12 mm. A ball attachment (art. no. 27145 101) is included with each alignment wedge.
Applications
The alignment wedge can be easily adjusted with normal manual force even at a load of 1/3 F max. The finely machined wedge surfaces allow smooth, sensitive adjustment with a precision of more than 1/10 mm, using either a knurled thumb screw or a hexagon screwdriver. The double wedge effect results in a large stroke and precise vertical movement without lateral displacement.

Quality
Spheroidal graphite iron and tempered steel annealed with a burnished finish. Wedge surface finely machined.

Note:
**H/R mm = height adjustment per revolution. For aligning attachments see art. no. 27145 101, 102 + 106.*

27140 101

27140 102



Size	H min. mm	H max. mm	B1 mm	B2 mm	L mm	AF mm	H/R* mm	F max. kN	27140	...
63	50	63	40	40	63	13	0.86	40		**101**
125	100	125	115	60	125	24	1.16	100		**102**

27145 Aligning attachments for screw jacks

Design
Tempered steel, annealed with a burnished finish.
Applications
For screw jacks art. no. 27135–27140.

27145 101
Ball attachment.

27145 102
Prism attachment.

27145 103-104
Fixing attachments for fork clamps.

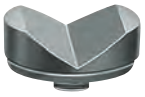
27145 105
With rotating ball, hardened.

27145 106
Centring plate
For mounting multiple screw jacks.

27145 107
Aligning screw jack
Design
With rotating ball, hardened.
Applications
Particularly suitable for supporting and aligning free-form surfaces. The calibration accuracy is approx. 0.1 mm.

27145 101

27145 102

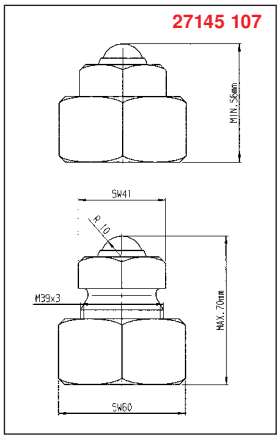


27145 103-104

27145 105

27145 106

27145 107



27145 107

	Outer Ø mm	Pin Ø mm	Load capacity kN	27145 ...
Ball attachment	37	-	-	101
Prism attachment	45	-	-	102
Fixing attachment	-	14	-	103
Fixing attachment	-	25	-	104
Attachment with ball	-	-	30	105
Centring plate	50	-	-	106
Aligning screw jack	-	-	30	107

27191 - 27193 Compact clamps, BAS-C

27191
Design
- Compact design
- Tempered, rust-free stainless steel housing
- Infinitely adjustable clamping force up to 16 kN
- With automatic clamping and release.

Applications
For efficient clamping of workpieces on the machine table. Use the BASO base for larger clamping heights.

Note:
For suitable T-sliding blocks to DIN 508, M 10, see art. no. 27004 205/207/240 + 243.
Tools required:
Hexagon socket AF 11 mm, ball-end Allen key AF 8 and 10 mm.

27193 201
Clamping base, BASO
Open mounting hole. Includes cylinder head screws M 10 x 25 to DIN 912.

27191 101-102

27191 103

27193

Clamping height mm	Overhang mm	With aluminium pressure shoe	Weight kg	Clamping height extension mm	Mounting thread	For cyl. head screws DIN 912	Clamp 27191 ...	Base 27193 ...
88	40	x	1.3	-	-	-	101	
97	60	x	1.3	-	-	-	102	
97	60	-	1.3	-	-	-	103	
-	-	-	-	80	M 10	M 10/M 12		201

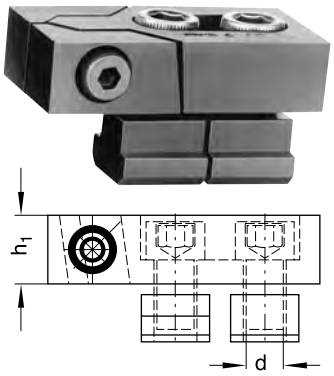
27210 Deep clamping jaws, Bulle

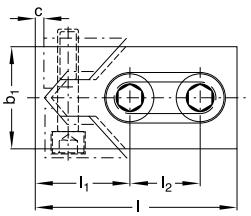
Design
- **Paired**
- Heat-treated steel, hardened and annealed with a burnished finish
- Includes fastening screws to ISO 4762, 10.9. Sliding blocks to DIN 508 and hexagon screwdriver to ISO 2936

Applications
For clamping low plates.

Note:
Tightening the lateral screw on the loose jaws securely clamps the workpiece forwards and downwards simultaneously via the wedge effect. No protruding clamping screws!

27210





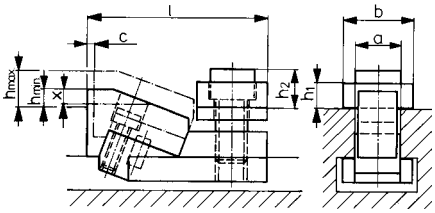
Nominal groove size	c mm	h_1 mm	b_1 mm	l mm	l_1 mm	l_2 mm	d mm	F1 kN	F2 kN	27210	...
12	3	20	40	80	39	26	M 10	16	0.6		101
14	3	20	40	80	39	26	M 12	22	0.9		102
16	3	20	40	80	39	26	M 12	22	0.9		103
16	4	25	50	100	46	34	M 14	32	1.2		104
18	4	25	50	100	46	34	M 16	36	1.4		105
20	4	25	50	100	46	34	M 16	36	1.4		106
22	5	30	78	140	65	50	M 20	36	1.4		107
24	5	30	78	140	65	50	M 20	36	1.4		108
28	5	30	78	140	65	50	M 24	40	1.6		109

27212 Flat clamps, Mini-Bulle

Design
- **Paired**
- Heat-treated steel, hardened and annealed with a burnished finish
- Includes fastening screws to ISO 4762, 8.8 and hexagon screwdriver to ISO 2936

Applications
Inserted directly into the T-groove of the machine table, for clamping particularly low workpieces. The wedge effect clamps the workpiece firmly and securely onto the machine table. The clamping piece can be ground down by x mm to create low clamping heights with minimum groove depth.

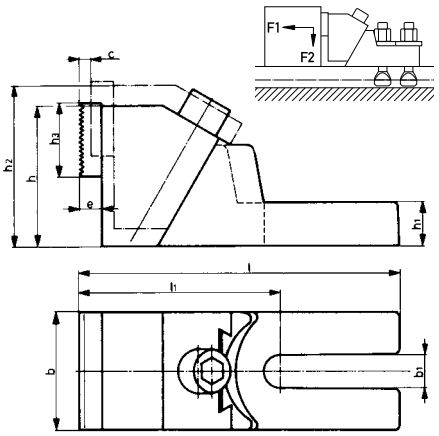
27212



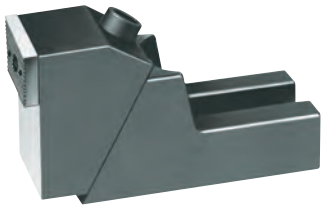
Nominal groove size	c mm	h min.	h max.	x mm	l max.	b mm	h_1 mm	h_2 mm	F1 kN	F2 kN	27212	...
12	1.8	2.5	13.5	5	52	18	7	11	5.0	0.6		101
14	1.8	1.5	13.5	5	55	22	8	11	5.5	0.7		102
16	2.5	2.5	17.0	6	68	25	9	15	8.0	0.9		103
18	2.5	1.5	16.0	6	71	28	10	15	9.0	1.0		104
22	3.0	4.5	21.5	9	89	35	14	20	16.0	1.9		105

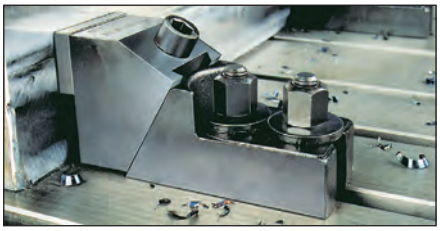
27213 Sturdy clamping jaws

Design
Reversible clamping jaws,
tall design with precise V-guide.
Basic body: Malleable iron.
Clamping jaw: Case-hardening steel, case-hardened. Reversible clamping jaws, with smooth side for machined workpieces and serrated side for unfinished clamping surfaces.
Applications
The large clamping surface makes these sturdy clamping jaws suitable for lateral clamping of tall workpieces. We recommend the use of 2 clamping screws to fix the clamping jaw on the machine table. Depending on the groove width, 2 pieces per clamping jaw (art. no. 27015) are required as fastening screws for T-grooves to DIN 787.



27213



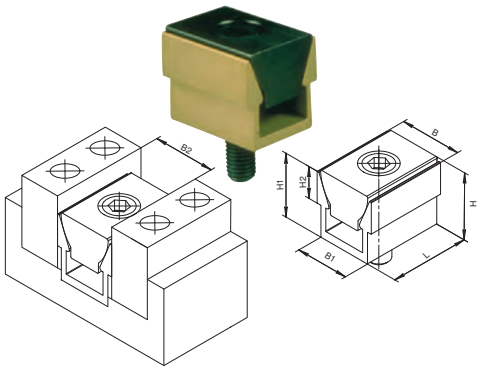


For nominal groove size	b_1 mm	c mm	h mm	h_1 mm	h_2 mm	h_3 mm	b mm	l mm	l_1 mm	e mm	F1 kN	F2 kN	27213	...
12–18	19	8	85	38	85–99	40	65	179	112.5	12	8–28	1.2–4.2		101
20–30	26	11	100	45	100–118	40	75	230	138.5	12	25–36	4.5–5.4		102
32–42	38	15	120	56	120–145	40	90	265	158.0	12	50	7.5		103

27217 Double wedge clamping devices

Design
A simple idea for an ingenious solution.
Two workpieces are clamped simultaneously with one clamping element.
- Space-saving multiple clamping reduces non-productive time and thus unit costs
- Cost-effective clamping device
- For circular and rectangular parts
- Clamping force up to 27 kN

Comprising:
Aluminium profile and double wedge made from hardened case-hardening steel.



27217

Clamping force kN	Tightening torque Nm	Screw mm	Allen key mm	B mm	H mm	H_1 mm	L mm	B1 mm	H2 mm	B2 mm	Pack = Pieces	27217	...
2.2	3.4	M 4	3	12.3	14.5	12.70	15.9	10.4	5.6	12.7	8		101
6.7	14.3	M 6	5	18.6	19.0	19.05	23.8	16.1	9.5	19.0	6		102
8.9	14.5	M 8	6	24.8	25.9	25.40	31.7	20.8	12.7	25.4	4		103
15.6	38.4	M 12	10	37.3	38.6	38.10	47.6	30.8	19.0	38.1	2		104
26.7	74.6	M 16	14	49.7	51.5	50.80	63.5	41.2	25.4	50.8	2		105

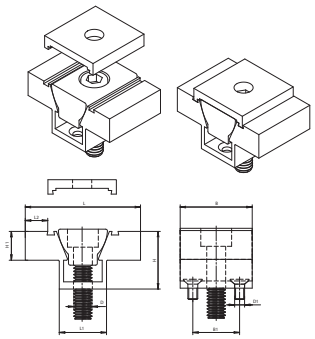
27219 Form fit double wedge clamping devices

Design
Double wedge clamping device with extra-wide jaws. Appropriate milled recesses enable workpieces to be clamped via a form fit, and thus absolutely safely and free from distortion. Space-saving design and simultaneous clamping of 2 workpieces, meaning that more parts can be clamped on the machine. Low non-productive times and low clamping device costs increase the profitability of production.

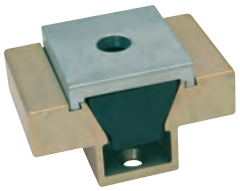
Comprising:
Double wedge made of hardened case-hardening steel, extruded aluminium profile, clamping screw, locking plate for locking the clamping element during form milling.

Applications
Workpiece clamping on milling machines, drills and machining centres.

Note:
A is the distance between the workpieces.
The tapped hole for l should be exactly in the centre of A. F is the dimension available for milling.



27219



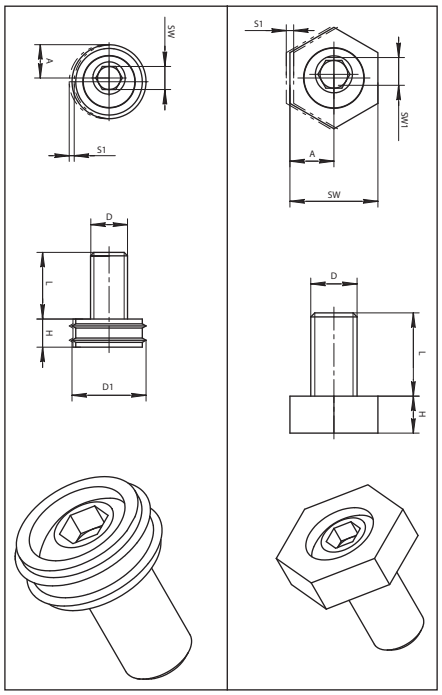
Clamping force kN	Tightening torque Nm	L mm	H mm	B mm	B1 mm	L1 mm	H1 mm	D1 mm	D mm	Pack = pieces	27219	...
2.2	3.4	28.6	12.7	15.7	4.6	10.67	6.3	M 2	M 4	1		101
6.7	14.3	38.1	19.1	23.9	6.6	16.05	9.4	M 4	M 6	1		102
8.9	14.5	50.8	25.4	31.8	9.9	20.83	12.7	M 4	M 8	1		103
15.6	38.4	76.2	38.1	47.5	15.7	30.86	19.1	M 5	M 12	1		104
26.7	74.6	101.6	50.8	63.5	20.3	41.28	25.4	M 6	M 16	1		105

27222 Eccentric tensioning clamps for jigs

Design
The patent for the clamping device relates to the screw with the eccentric head. The eccentric fitting causes the clamping movement and the clamping force (up to 27 kN). The hexagonal brass washer serves as the clamping piece. A workpiece of any shape can be clamped with stop pins and one or two clamping screws.
- The low overall height enables easy machining of the workpiece surface
- When programming the CNC, it is not necessary to consider the position of the adjustable clamps
- Space-saving multiple clamping due to the small dimensions

Applications
For jig plates.

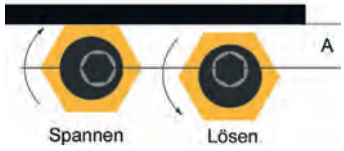
Note:
For spare screws and hexagonal washers, see art. no. 27225–27226.



27222

Dimension A = distance between the workpiece and the centre of the hole

M 4 = 3.8 mm	M 10 = 10.2 mm
M 6 = 7.8 mm	M 12 = 12.7 mm
M 8 = 10.2 mm	M 16 = 15.0 mm



Clamping force kN	Hexagon socket AF1 (mm)	Thread D	Thread length L (mm)	Hex washer AF (mm)	Washer height H (mm)	Eccentric travel S1 (mm)	Pack = pieces	27222 ...
3.4	4	M 6	12	16	4.8	1.3	10	**102**
3.6	5	M 8	12	20	4.8	1.0	12	**103**
9.0	7	M 10	16	20	6.4	1.6	10	**104**
18.0	8	M 12	20	25	9.5	2.0	8	**105**
27.0	12	M 16	30	30	12.7	2.5	4	**106**

27225 - 27226 Spare screws/hexagonal washers

27225
Spare screws
Applications
For art. no. 27222.

27226
Spare hexagonal washers
Applications
For art. no. 27222.

27225

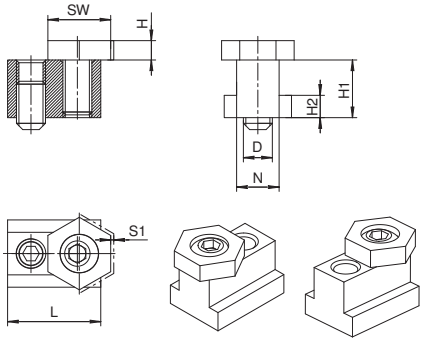
27226

Thread	Pack = Unit	27225 ...	27226 ...
M 6	1	**202**	**202**
M 8	1	**204**	**204**
M 10	1	**205**	**205**
M 12	1	**206**	**206**
M 16	1	**207**	**207**

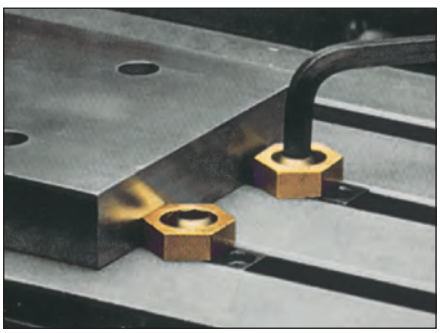
27230 Eccentric clamping screws for T-grooves

Design
Connecting the standard clamping elements with eccentric screws (with brass hexagon) and a sliding block enables cost-effective clamping of workpieces on machine tables or clamping plates with T-grooves. The T-sliding block is locked in the T-groove with a screw.
- Low overall height; even flat parts can be machined on the surface
- Fast adaptation to different workpiece sizes and parts of any shape. No right-angled side surface necessary
- Clamping force up to 18 kN

Scope of delivery:
With brass washer and sliding block.



27230



For T-groove N (mm)	Clamping force kN	Hexagon socket AF1 (mm)	Thread D (mm)	Washer AF (mm)	Washer height H (mm)	Eccentric travel S1 (mm)	Pack = pieces	27230 ...
10	3.4	4	M 6	16	4.8	1.0	2	**102**
10	3.6	5	M 8	21	4.8	1.0	2	**103**
14	9.0	7	M 10	21	6.4	1.6	2	**104**
16	18.0	8	M 12	25	9.5	2.0	2	**105**
18	18.0	8	M 12	25	9.5	2.0	2	**106**

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27233 Mechanical clamping mandrels

Design
- **For through-bores**
- Mechanical clamping device

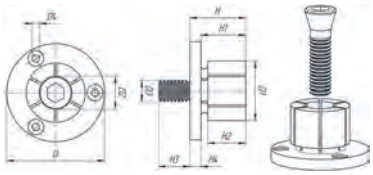
Advantage:
- Easy to mill and turn to the required clamping diameter
- High clamping forces
- 5-sided machining even of thin-walled parts
- Warp-free clamping
- For clamping complex workpiece contours
- Easy to operate
- No annoying adjustable clamps

Applications
Clamping elements for multiple or series machining.

Scope of delivery:
- Clamping mandrel with hardened and coated clamping screw
- 3 fastening screws

Note:
Other sizes deliverable on request.
F = nominal diameter
G = smallest machining diameter

27233

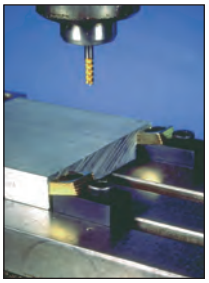


Clamping Ø F max. mm	Clamping Ø G min. mm	Total height A mm	Clamping height B mm	Clamping height C mm	Clamping step D mm	Outer Ø E mm	Mounting screw H	Reference circle	Clamping screw I	Gripping force kN	27233	...
12.4	7.2	21.8	16.0	15.0	5.9	29.7	M 3	21.0	M 4	4.2		101
14.2	12.2	24.9	19.0	15.0	5.9	31.5	M 3	23.1	M 6	8.5		102
20.0	13.5	24.9	19.0	15.0	5.9	37.5	M 3	29.0	M 8	11.1		103
27.0	18.0	28.6	22.2	17.5	6.4	50.0	M 4	39.4	M 10	20.0		104
35.3	25.4	31.8	25.4	20.6	6.4	56.0	M 4	45.5	M 12	26.3		105
42.0	30.0	39.6	31.8	27.0	7.9	69.5	M 5	55.9	M 16	44.5		106
51.0	30.0	39.6	31.8	27.0	7.9	75.5	M 5	63.9	M 16	44.5		107
77.0	30.0	45.5	37.6	32.3	7.9	107.5	M 5	92.5	M 16	44.5		108

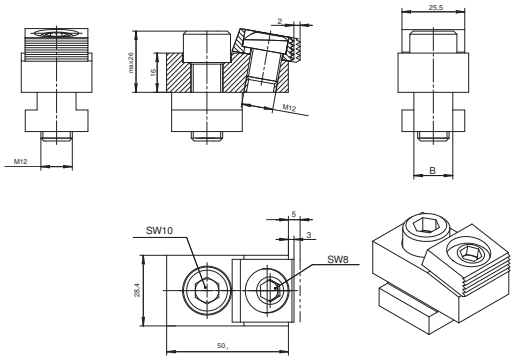
27234 Mini pull-down adjustable clamps

Design
Body and clamping discs case-hardened. Clamping disc with smooth edge for machined parts; opposite edge serrated for blanks. Eccentric clamping screws M 12 for clamping force 18 kN.

Applications
The pull-down effect presses the workpiece onto the support. The clamping disc adapts to the angular position of the workpiece, i.e. the workpiece does not have to be rectangular. For T-grooves measuring 14, 16 and 18 mm and for direct mounting on the jig plate.



27234



T-groove mm	27234	...
14		102
16		103
18		104
Without T-sliding block		105

27242 Clamping film, Power-Grip

Design
POWER-GRIP is a special composite embedded in a 0.0125 mm-thick retaining medium. This exact retaining medium is a precise workpiece support and guarantees the parallelism of your workpieces. The retention force (30–100 N/cm², depending on the type of support surface) allows the machining of parts that are thin or difficult to clamp, and enables 5-sided machining without the use of a tensioning clamp. POWER-GRIP is also often used to reinforce thin workpiece walls during machining. POWER-GRIP can then be easily removed from the workpiece by heating. POWER-GRIP can be used with steel, non-ferrous metals, glass, wood, most plastics and many other materials. It contains no harmful chemicals.
Supplied with operating instructions.

Applications
For clamping unstable parts that otherwise cannot be clamped due to their shape or lack of magnetic properties.
POWER-GRIP reduces your equipment costs, solves your problems with difficult parts and is ideal for small series.

27242

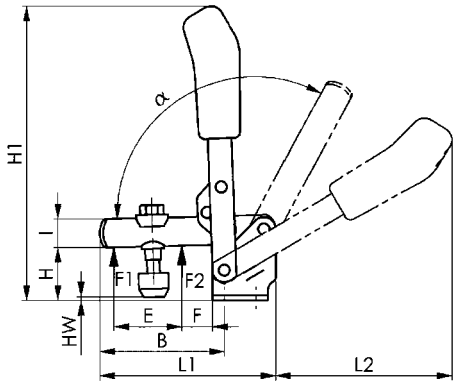
Roll mm	27242	...
300 x 1500		101

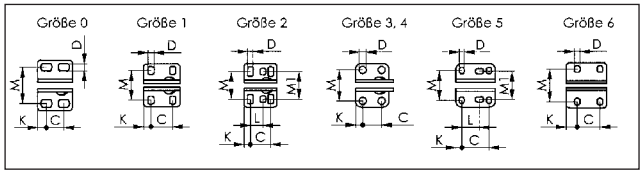
27313 Vertical clamp

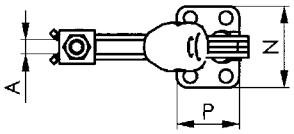
Design
- **With open retaining arm and horizontal base**
- Zinc-plated and passivated
- Stainless steel rivets; sizes 2 to 5 in case-hardened bearing bushes
- Bearing positions greased
- Ergonomic, oil-resistant handle with large hand rest and soft component
- Safety clamping piece with finger protection
- Protection against loss of the pressure screw at the end of the clamping arm
- Includes tempered, zinc-plated pressure screw

Note:
For cross arms see art. no. 27345.
Sizes 0–4 also deliverable in stainless steel.

27313







Size	A	B	C	D	E	F	H	H1	HW	HW	I	L	L1	L2	M	M1	N	P
	mm	mm	mm	mm	mm	mm	mm	mm	min. mm	max. mm	mm	mm	mm	mm	mm	mm	mm	mm
0	4	31.0	8.5–13.5	4.5	14	5.5	18.0	81.0	-1.5	3.5	8	-	49	50	23.0	-	32	22
1	5	39.0	16.0	4.5	18	6.0	19.0	98.5	-4.0	2.0	10	-	61	59	22.5–26.0	-	34	27
2	6	52.0	20.0	5.5	25	11.0	23.0	139.5	-3.0	4.5	12	12.5	78	89	23.0–31.0	27	43	32
3	8	79.0	20.0	7.5	37	19.0	33.0	186.0	2.0	11.0	18	-	112	112	32.5	-	46	35
4	10	101.0	32.0	8.6	54	16.0	42.5	221.0	-6.0	22.5	20	-	141	130	43.5–46.5	-	64	53
5	14	140.0	45.0	8.5	73	34.0	55.8	281.0	-3.0	27.5	25	26.5–31.5	195	185	45.0–50.0	45	70	65

Size	Compressive force F1 kN	Compressive force F2 kN	Alpha angle	Pressure screw	Weight g	27313	...
0	0.5	0.7	95	M4 x 25	60		101
1	0.6	1.1	95	M5 x 30	105		102
2	0.8	1.2	105	M6 x 35	175		103
3	1.2	2.5	105	M8 x 45	410		104
4	1.7	3.0	105	M8 x 65	630		105
5	3.0	5.0	115	M12 x 80	1480		106

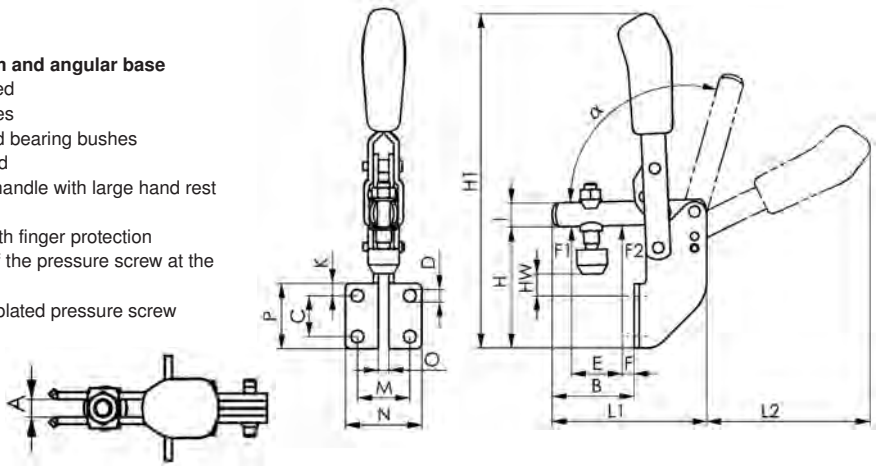
27315 Vertical clamp

AMF

Design
- **With open retaining arm and angular base**
- Zinc-plated and passivated
- Stainless steel rivets; sizes 2 and 3 in case-hardened bearing bushes
- Bearing positions greased
- Ergonomic, oil-resistant handle with large hand rest and soft component
- Safety clamping piece with finger protection
- Protection against loss of the pressure screw at the end of the clamping arm
- Includes tempered, zinc-plated pressure screw

Note:
All sizes also deliverable in stainless steel.

27315



Size	A	B	C	D	E	F	H	H1	HW	HW	K	I	L1	L2	M	N	O	P	Alpha
	mm	mm	mm	mm	mm	mm	mm	mm	min. mm	max. mm	mm	mm	mm	mm	mm	mm	mm	mm	angle
1	5	34.5	14	4.5	18	7	45	125	2.5	9.0	10	10	61	58	20.0	30.0	5	30	98
2	6	41.0	20	6.1	25	6	60	167	7.5	15.5	6	12	77	81	25.5	37.0	5	32	105
3	8	63.0	24	6.5	37	11	71	223	9.0	17.5	7	18	111	112	28.5	42.5	6	38	105

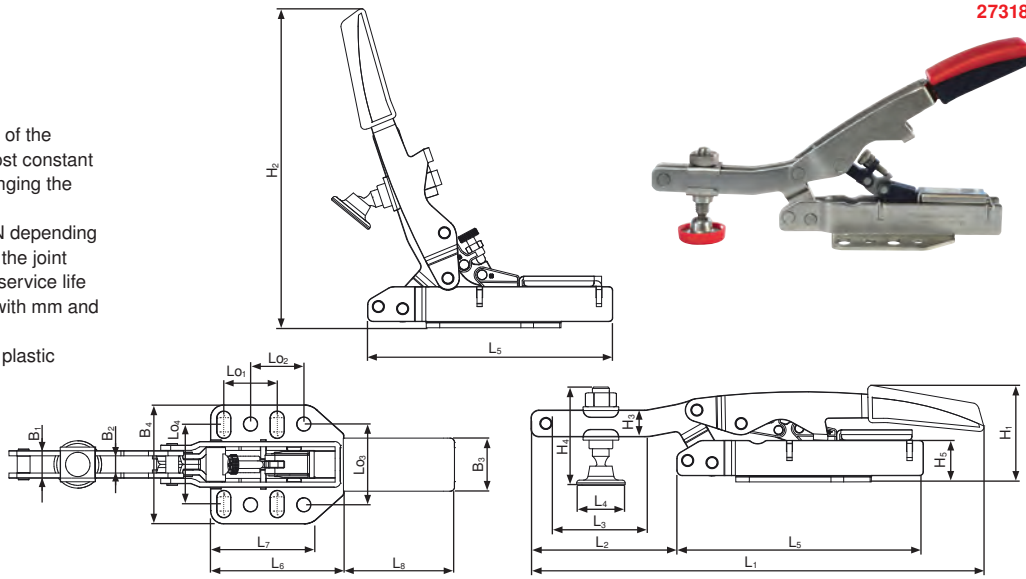
Size	Compressive force F1 kN	Compressive force F2 kN	Pressure screw	Weight g	27315	...
1	0.8	1.1	M5 x 30	125		101
2	1.0	1.2	M6 x 35	220		102
3	1.4	2.5	M8 x 45	400		103

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27318 Variable horizontal clamp

27318

Design
- Lever is horizontal in clamping position
- Infinitely variable automatic adjustment of the clamping height up to 35 mm with almost constant clamping force – without manually changing the position of the pressure screw
- Adjustable clamping force up to 2500 N depending on the setting of the adjusting screw in the joint
- Sturdy, tempered steel sheets for long service life
- Hole pattern of base plate compatible with mm and inch
- High-quality, oil-resistant 2-component plastic handle



Type	B1	B2	B3	B4	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5	L6	L7	L8	Lo1	Lo2	Lo3	Lo4
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
STC-HH50	13	8	32	60	47	158	14	50	27	217	77	40	23	113	53	38	72	25.4	25.4	38	33–48
STC-HH70	13	8	32	60	64	175	14	68	44	217	77	40	23	113	53	38	72	25.4	25.4	38	33–48

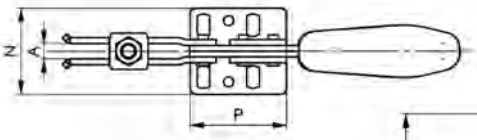
Type	Clamping width mm	Hole Ø mm	Weight g	27318	...
STC-HH50	0–40	6.5	380		**301**
STC-HH70	0–65	6.5	420		**302**

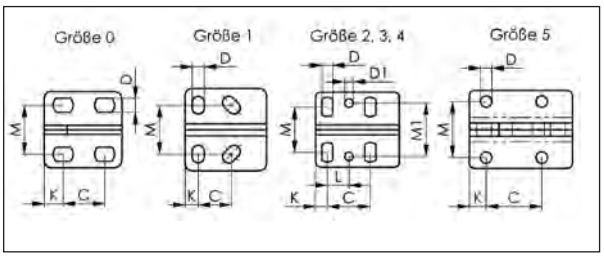
27317 Horizontal clamp

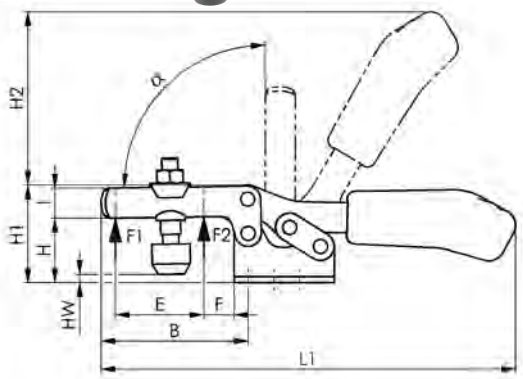
27317

Note:
For cross arms see art. no. 27345.
All sizes also deliverable in stainless steel.

Design
- **With open retaining arm and horizontal base**
- Zinc-plated and passivated
- Stainless steel rivets; sizes 2 to 5 in case-hardened bearing bushes
- Bearing positions greased
- Ergonomic, oil-resistant handle with large hand rest and soft component
- Protection against loss of the pressure screw at the end of the clamping arm
- Includes tempered, zinc-plated pressure screw







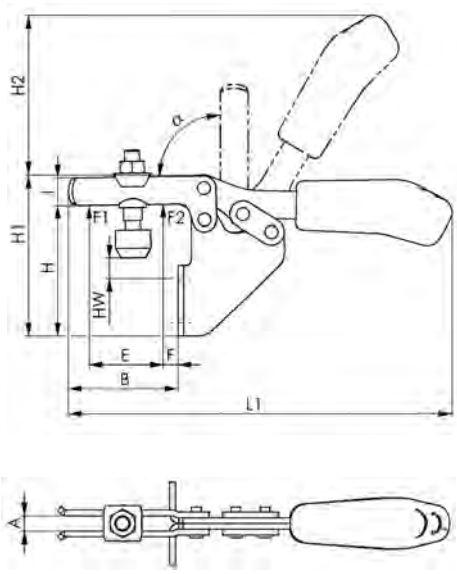
Size	A	B	C	D	D1	E	F	H	H1	H2	HW	HW	K	L	I	L1	M	M1	N	P
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	min. mm	max. mm	mm	mm	mm	mm	mm	mm	mm	mm
0	4	28.0	11.5–15.5	4.6	-	9.0	5.5	14.5	23.0	34	-5.5	0.0	6.3	-	7.5	79	16.0	-	25.0	25.5
1	5	42.0	13.0–14.5	5.2	-	18.7	8.0	19.0	30.0	49	-3.0	2.5	5.5	-	10.0	120	18.0–21.5	-	34.0	34.0
2	6	64.0	26.0	5.6	5.6	32.0	16.0	24.0	45.0	68	-1.5	5.0	6.0	12.7	13.2	162	19.5–29.5	28.5	42.0	38.0
3	8	73.0	25.7	6.5	5.1	38.0	14.0	32.0	48.5	86	-2.0	9.0	7.0	13.0	15.0	206	22.0–31.8	31.6	45.5	50.0
4	10	113.0	41.0	8.5	8.5	63.0	27.0	45.0	75.0	126	-4.0	24.0	8.0	20.5	20.0	287	29.0–43.0	43.0	58.0	57.0
5	10	123.0	41.5	8.5	-	78.0	16.0	46.0	73.0	128	+1.7	25.0	12.5	-	25.0	321	41.5	-	58.0	77.0

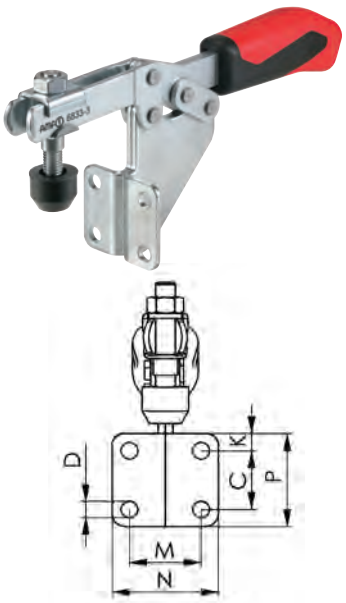
Size	Compressive force F1 kN	Compressive force F2 kN	Alpha angle	Pressure screw	Weight g	27317	...
0	**0.25**	**0.4**	**90**	**M4 x 25**	**35**		**101**
1	0.8	1.1	90	M5 x 30	105		**102**
2	1.0	1.2	90	M6 x 35	185		**103**
3	1.8	2.5	90	M8 x 45	320		**104**
4	2.0	3.0	90	M8 x 65	700		**105**
5	3.0	5.0	90	M8 x 65	1080		**106**

27319 Horizontal clamp

Design
- **With open retaining arm and angular base**
- Zinc-plated and passivated
- Stainless steel rivets in case-hardened bearing bushes
- Bearing positions greased
- Ergonomic, oil-resistant handle with large hand rest and soft component
- Protection against loss of the pressure screw at the end of the clamping arm
- Includes tempered, zinc-plated pressure screw

27319





Size	A mm	B mm	C mm	D mm	E mm	F mm	H mm	H1 mm	H2 mm	HW min. mm	HW max. mm	K mm	l mm	L1 mm	M mm	N mm	P mm	Alpha angle
2	6.2	52	20	5.6	32	10.5	73	94.0	68	22	29.5	6	13.2	162	25.5	37.0	32	90
3	8.0	59	24	6.8	37	6.5	70	86.5	86	5	16.0	7	15.0	206	28.5	42.5	38	90

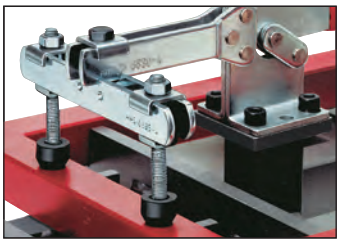
Size	Compressive force F1 kN	Compressive force F2 kN	Pressure screw	Weight g	27319	...
2	1.0	1.2	M6 x 35	245		**101**
3	1.8	2.5	M8 x 45	390		**102**

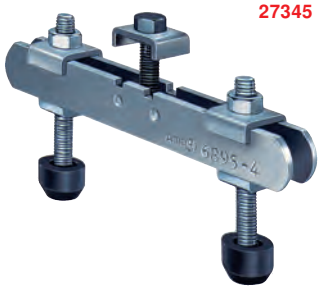
27345 Cross arms for quick-action clamps

Design
- Zinc-plated and passivated
- Includes two tempered pressure screws and fastening screw

Applications
For item no. 27313, 27315, 27317 and 27319.

27345



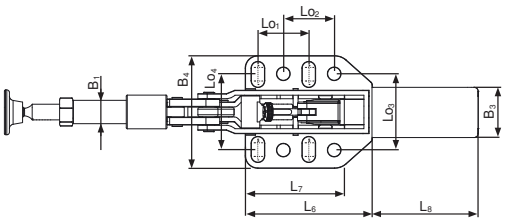


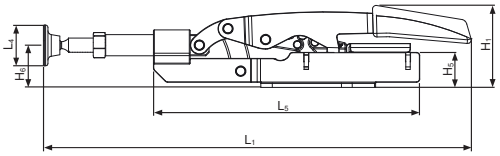
Size	Screw DIN 933	Clamping width mm	Length mm	Weight g	27345	...
0	M4 x 25	18–60	70	40		**101**
1	M5 x 30	22–72	85	65		**102**
2	M6 x 35	28–85	100	90		**103**
3	M8 x 45	34–100	120	200		**104**

Size	Screw DIN 933	Clamping width mm	Length mm	Weight g	27345	...
4	M8 x 65	40–125	150	370		**105**
5	M8 x 65	40–125	150	370		**106**
6	M12 x 80	54–200	240	985		**107**

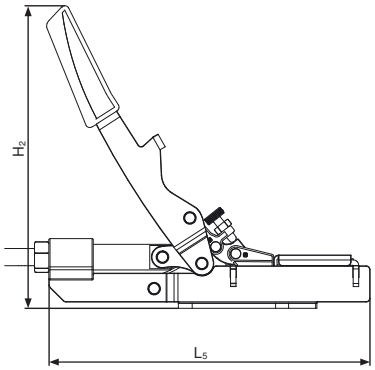
27329 Variable push rod clamp

Design
- Movement of the lever is converted into an axial movement of the push rod
- Infinitely variable automatic adjustment of the clamping width up to 13 mm with almost constant clamping force, without manually changing the position of the pressure screw
- Adjustable clamping force up to 2500 N depending on the setting of the adjusting screw in the joint
- Sturdy, tempered metal sheets for long service life
- Hole pattern of base plate compatible with mm and inch
- High-quality, oil-resistant 2-component plastic handle





27329

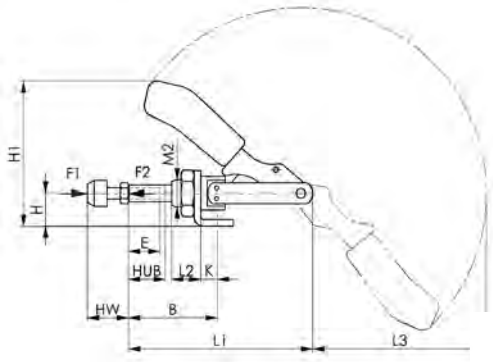


Type	B1	B3	B4	H1	H2	H5	H6	L1	L4	L5	L6	L7	L8	Lo1	Lo2	Lo3	Lo4
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
STC-IHH25	12	32	60	46	155	25	27	233	23	154	53	38	73	25.4	25.4	38	33–48

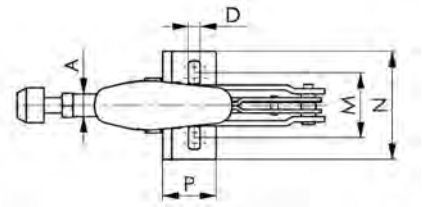
Type	Clamping width mm	Hole Ø mm	Weight g	27329 ...
STC-IHH25	35	6.5	200	101

27330 Push rod clamp

Design
- **With small angular base**
- Compression and tension clamps
- Push rod and hand lever synchronised
- Long push rod guide with mounting thread and nut
- Zinc-plated and passivated
- Stainless steel rivets; sizes 2 and 3 in case-hardened bearing bushes
- Lifting part and push rod made from heat-treated steel
- Bearing positions greased
- Hand lever can be rotated at any angle to the base surface
- Ergonomic, oil-resistant handle with large hand rest and soft component



27330



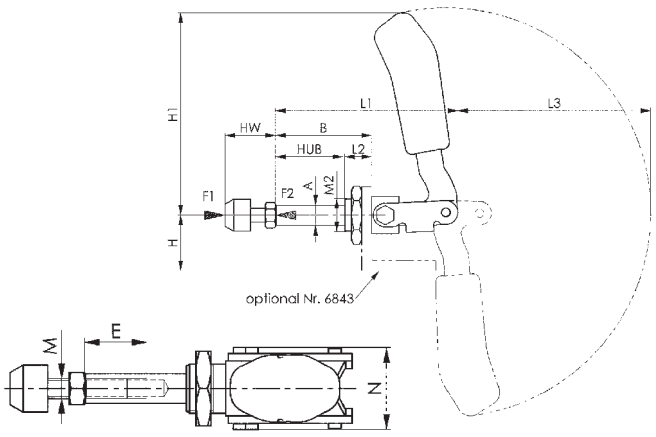
Size	A	B	B	E	H	H1	Lift	HW	HW	K	L1	L2	L3	M	M	M2	N	P
	mm	min. mm	max. mm	mm	mm	mm	mm	min. mm	max. mm	mm	mm	mm	mm	min. mm	max. mm		mm	mm
0	6.5	17.0	33.0	13	12	49.3	16	12	20	6.5	66.5	10	54.0	-	16.0	M10 x 1.0	25	16
1	8.0	24.5	44.5	20	15	60.5	20	12	20	7.0	91.0	16	74.0	16.0	19.5	M12 x 1.5	30	20
2	10.0	32.5	58.5	20	20	85.5	26	17	25	12.5	114.0	19	105.0	31.8	36.0	M16 x 1.5	50	34
3	12.0	37.0	69.0	30	25	108.0	32	22	35	13.0	140.0	22	127.5	29.5	42.5	M20 x 1.5	60	30
5	16.0	41.5	81.5	50	30	129.5	40	30	50	15.5	171.5	25	158.0	29.0	46.0	M24 x 1.5	65	35

Size	Compressive force F1 kN	Compressive force F2 kN	Pressure screw	Weight g	27330 ...
0	0.8	0.8	M4 x 20	65	101
1	1.0	1.0	M4 x 20	125	102
2	2.0	2.0	M6 x 25	245	103
3	2.5	2.5	M8 x 35	445	104
5	4.5	4.5	M12 x 50	880	105

27340 Push rod clamp

Design
- **Short design**
- Compression and tension clamps
- Long push rod guide with mounting thread and nut
- Zinc-plated and passivated
- Stainless steel rivets
- Fitting screws tempered
- Bearing positions greased
- Ergonomic, oil-resistant handle with large hand rest and soft component

Note:
Drawing shows push rod clamp with angular base, AMF no. 6843.



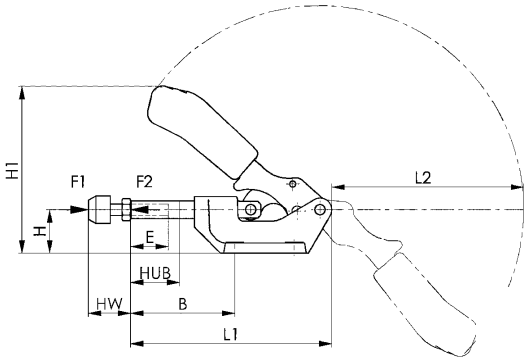
27340

Size	A	B	E	H	H1	Lift	HW	HW	L1	L2	L3	M	M2	N
	mm	mm	mm	mm	mm	mm	min. mm	max. mm	mm	mm	mm			mm
2	10	36	15	24	73	21.5	17	25	68.5	13	68	M6	M16 x 1.5	30.5
3	12	57	25	33	123	40.0	22	35	108.0	16	115	M8	M20 x 1.5	33.0
5	16	92	45	37	149	67.0	30	50	175.0	24	139	M12	M24 x 1.5	49.0

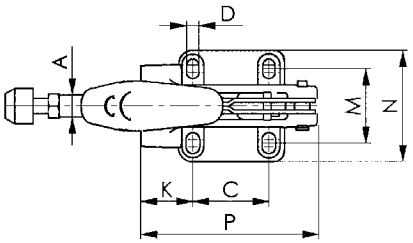
Size	Compressive force F1 kN	Compressive force F2 kN	Pressure screw	Weight g	27340 ...
2	1.0	1.0	M6 x 25	130	101
3	2.5	2.5	M8 x 35	320	102
5	4.0	4.0	M12 x 50	1200	103

27355 Heavy-duty push rod clamp

Design
- **Compression and tension clamps**
- Heavy-duty design with long push rod guide
- Push rod and hand lever synchronised
- Basic body made of malleable iron, painted
- Lever parts and push rod made from heat-treated steel, tempered and passivated
- Rivets made from stainless steel; size 3 in case-hardened bearing bushes
- Bearing positions greased
- Handle made from red, oil-resistant plastic
- **For sizes 3 and 5:** Ergonomic, oil-resistant handle with large hand rest and soft component



27355



Size	A	B	B	C	D	E	H	H1	Lift	HW	HW	K	L1	L2	M	N	P
	mm	min. mm	max. mm	mm	mm	mm	mm	mm	mm	min. mm	max. mm	mm	mm	mm	mm	mm	mm
3	12	40	72	41	6.5	30	30	116.0	32	22	35	28	139	135	36–44	60	95
5	16	58	98	41	8.5	50	38	137.5	40	30	50	45	174	156	41–50	71	121
7	22	59	105	70	11.0	50	55	179.0	50	30	50	45	218	192	57–65	93	158

Size	Compressive force F1 kN	Compressive force F2 kN	Pressure screw	Weight g	27355 ...
3	4	4	M8 x 35	540	101
5	10	10	M12 x 50	1115	102
7	25	25	M12 x 50	2840	103

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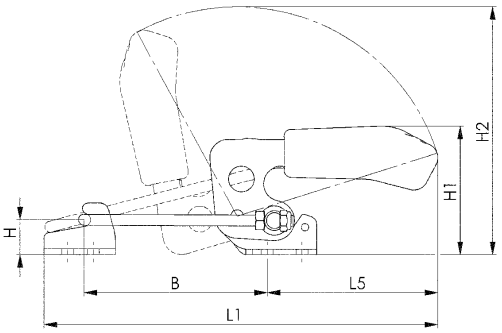
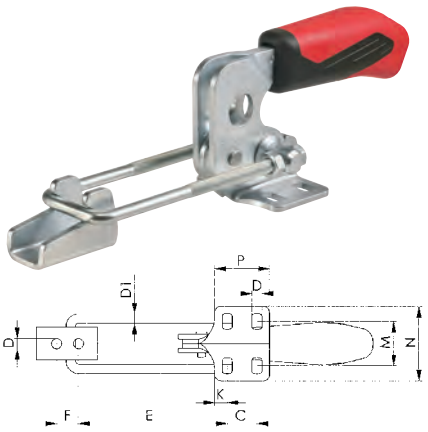
27375 Pull clamp

Design
- **Horizontal**
- Zinc-plated and passivated
- Stainless steel rivets in case-hardened bearing bushes
- Hook tempered
- Bearing positions greased
- Ergonomic, oil-resistant handle with large hand rest and soft component
- **Includes retainer**



27375



Size	B min. mm	B max. mm	C mm	D mm	D1 mm	E min. mm	E max. mm	F mm	H mm	H1 mm	H2 mm	K mm	L1 min. mm	L1 max. mm	L5 mm	M mm	N mm	P mm
2	42.0	76	13	5.2	4	38.0	72	11	12	47.0	99.0	6.4	125	159	69	19.5–23.5	38.0	26.0
3	53.5	101	19	6.5	6	48.6	96	14	19	70.0	135.5	8.0	169	216	93	24.5–32.0	48.0	35.0
4	66.0	130	32	8.5	8	59.0	123	19	26	94.5	171.5	9.5	209	273	111	35.0–46.0	64.3	53.5

Size	Tensile force kN	Weight g	27375 ...
2	1.6	120	**101**
3	3.2	330	**102**
4	7.0	810	**103**

27360 Quick-action clamp (machine table clamp)

Applications
For drilling and light milling work.

Design
- With quick lever clamping
- Clamping released by pressing the clamping lever
- The lock can then be easily released
- Insert into T-groove with corresponding sliding block to DIN 508
- Pivoting and infinitely height-adjustable

27360

Overhang x clamping height mm	Achievable clamping force at 50 mm clamping height, approx. N	Rail mm	Weight approx. kg	27360 ...
100 x 200	3500	19.5 x 9.5	1.35	**122**
120 x 200	5500	22.0 x 10.5	1.55	**123**
120 x 200	7500	28.0 x 11.0	2.65	**124**
140 x 240	10000	30.0 x 15.0	3.30	**125**

27365 Pull clamps

Applications
For drilling and light milling work.

Design
- Sturdy all-steel construction
- With wear-resistant spindle and toggle handle for powerful, fast and safe clamping
- Pivoting and infinitely height-adjustable
- Fastened to machine table with T-sliding block and hexagon socket screw

27365

Overhang x clamping height mm	Achievable clamping force at 50 mm clamping height, approx. N	Rail mm	Weight approx. kg	27365 ...
123–140 x 200	6500	28 x 11	3.0	**101**

27407 - 27408 Workpiece stop, 3-dimensional

27407
Design
5 axes continuously rotatable by 360°.
Material: Anodised aluminium.
Applications
For use on milling machines and drills.

27408
Matching sliding blocks

27407

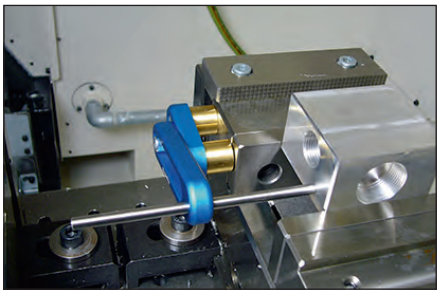
	Workpiece stop		Sliding block	
T-groove size	27407	...	27408	...
-		101		
10				101
12				102
14				103
16				104
18				105

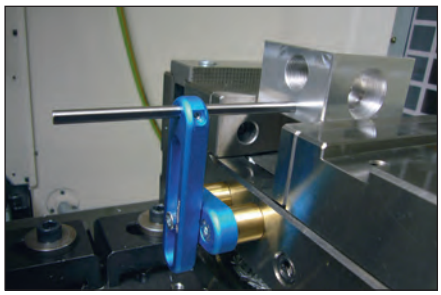
27409 Magnetic workpiece stop

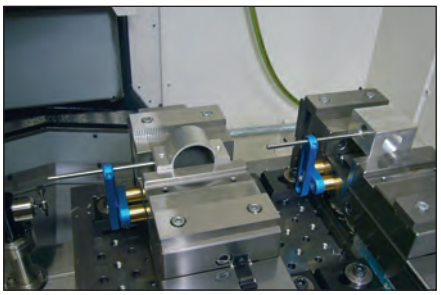
Design
- Removable, anodised aluminium stop with large adjustment range
- Retention forces up to 5 times higher due to permanent magnets with SmCo core
- Large adjustment range

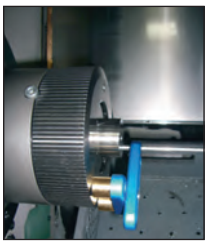
Applications
On all magnetic surfaces, such as vices, measuring equipment, drills, milling machines etc.
Removable for trimming work.

27409







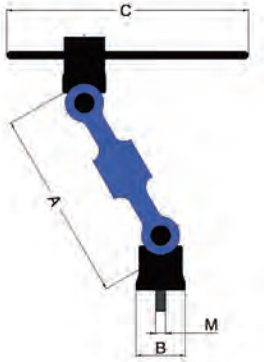


Adjustment range Height (Z) mm	Adjustment range Stop bar (X) mm	27409	...
55	120		101

27410 Workpiece stop

ATORN®

Design
Adjustable in five axes, fast, flexible, stable, with T-sliding blocks 12 and 14 mm, for sizes T16 and T18 see art. no. 27408 104 + 105.
Applications
For use on drills and milling machines.



27410

A mm	B mm	C mm	M	27410	...
150	39	190	8		101

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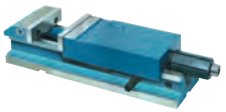
Overview of the vice programme

Machining with high accuracy for milling machines



Art. no.	27649	27656	27724	27651	27708
Cat. page	27.30	27.30	27.51	27.31	27.52

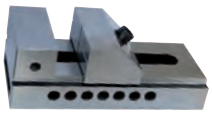
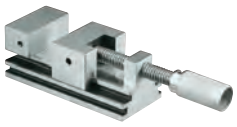
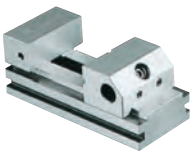
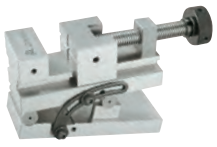
Machining with high accuracy for milling machines

Art. no.	27710	27716	27695	27800	
Cat. page	27.54	27.55	27.57	27.57	

Machining with normal accuracy for milling machines

Art. no.	27625	27628			
Cat. page	27.29	27.29			

Grinding Eroding Measuring

Art. no.	27617	27620	27622	
Cat. page	27.28	27.28	27.28	

5-axis CNC machining for milling machines

Art. no.	27592	27669	27590	27591	27595
Cat. page	27.32	27.40	27.35	27.36	27.37

Drilling machine

Art. no.	27505 / 27508	27510	27530 / 27534 / 27535 / 27537	
Cat. page	27.26	27.26	27.26 - 27.27	

Series production

Art. no.	27750	27751	
Cat. page	27.49	27.49	

27505 - 27508 Drill vices

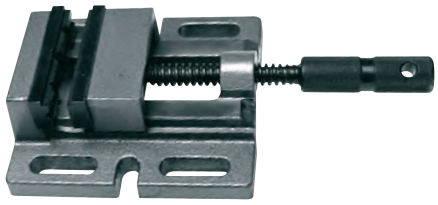
Design
- Made from special cast iron
- Steel jaws with V-shaped recesses for clamping round parts, with contact surfaces for flat workpieces

Applications
For use on drilling stands, bench drills and smaller column drills.

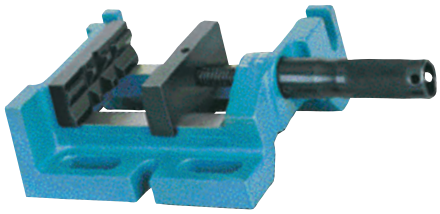
27505
Design
- With a clamping surface and 4 longitudinal grooves

27508
RÖHM
Design
- With additional right-angled machined contact surfaces, so that the right and front side of the vice can be tilted to enable multiple machining options without re-clamping the workpiece

27505



27508



Jaw width mm	Clamping width mm	Jaw height mm	RÖHM 27505	...	RÖHM 27508	...
85	70	28.0		201		
100	90	28.0		202		
100	93	15.0				102
120	110	35.0		203		
150	150	13.5		104		

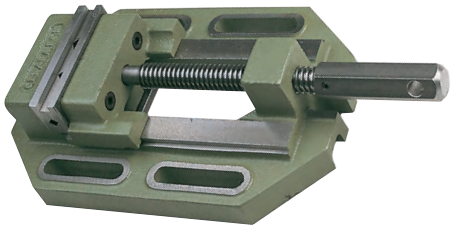
27510 - 27511 Prismatic vices

CEKABA

27510
Prismatic vices
Design
- With offset, exchangeable prism jaws for clamping round, hexagonal and flat material
- Open base plate, for clamping and drilling through workpieces
- **Long guide covering the entire clamping range**
- All jaws with horizontal prisms
- Size 1 with 1 additional vertical prism
- Sizes 2/3/4 with 2 vertical prisms in different sizes

27511
Replacement jaws
Design
- Pairs

27510



27511

Size	Jaw width mm	Clamping width mm	Overall height mm	Base plate L x W mm	Clamping groove width mm	Weight approx. kg	Vice 27510	...	Replacement jaws 27511	...
1	80	70	62	150 x 140	12	4		101		101
2	100	115	74	280 x 180	14	9		102		102
3	125	130	85	350 x 205	14	15		103		103
4	160	225	102	460 x 255	18	29		104		104

27530 Drill vices with quick adjustment

ATORN®

Design
- Flat and stable
- Max. clamping force 10 kN
- **Includes guide rail**

Applications
For fast and safe clamping. Can be used with guide rail, **base and side clamping,** single-handed operation with just one lever handle.

27530 101
Jaw width 110 mm.

27530 102
Jaw width 135 mm.

27530

Jaw width mm	Clamping width mm	Jaw height mm	Weight approx. kg	27530	...
110	130	32	12.5		101
135	160	40	19.0		102

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27534 - 27536 Drill vices/quick-action clamping vices

ROHM

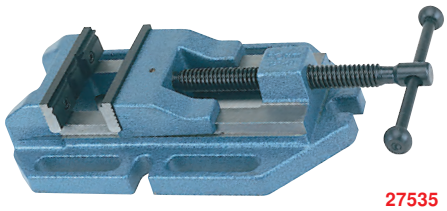
27534 - 27535
Design
- With **large clamping ranges**
- One clamping surface
- **Long flat guides**
- **High clamping force** and clamping safety
- The rear jaw has additional horizontal and vertical V-shaped recesses

27534
Design
- Adjustment via **threaded spindle**

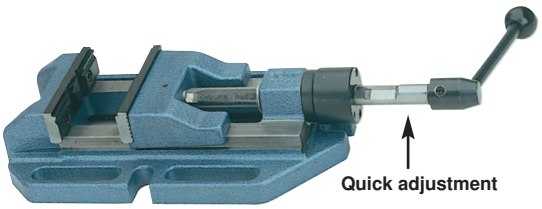
27535
Design
- **Single-handed quick adjustment** via push rod with pointed teeth
- Without threaded spindle

27536
Replacement jaws
Design
- Prism jaw and normal jaw with workpiece support
- Soft and bronzed
- Pairs

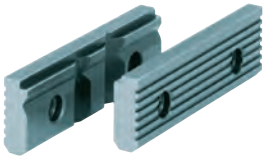
27534



27535



27536



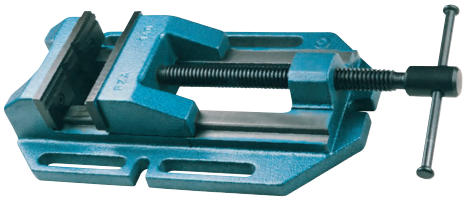
Jaw width mm	Clamping width mm	Jaw height mm	Overall height mm	Clamping groove width mm	Base plate L x W mm	Weight approx. kg	Vice 27534	...	Vice 27535	...	Replacement jaw 27536	...
90	90	25	60.0	14	195 x 145	5.5		101				101
110	130	32	72.5	17	315 x 175	9.5		102		101		102
135	160	40	80.5	17	365 x 205	13.5		103		102		103
160	220	50	95.5	17	445 x 245	25.0		104				104

27537 Drill vices

Design
- Broad range of uses
- **Large clamping width,** flat design
- The **reversible clamping jaws** are **hardened and ground**
- One jaw with horizontal and vertical prism for round material
- The other jaw is grooved
- Both **jaws** have one smooth side and can be reversed **as required**
- For clamping flat parts, **both jaws are stepped at the top**
- Open base plate with 8 chip grooves

Quality
The body and the moving parts are made of special cast iron.

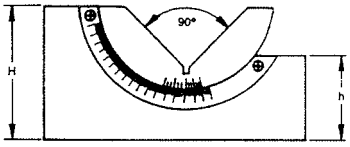
27537



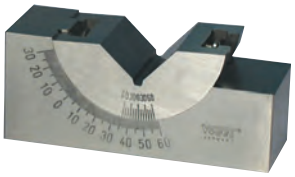
Jaw width mm	Clamping width mm	Jaw height mm	Overall height mm	Weight kg	27537	...
110	130	32	72.5	9.5		101
135	160	40	80.5	14.0		102
160	220	50	95.5	25.5		103

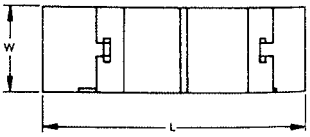
27610 Adjustable optical squares

Design
Accuracy +/- 0.1 mm,
angle accuracy +/- 10 min.
Applications
Universal use for grinding, drilling, measuring and marking off. The prism is clamped in a vice. The desired angle is set and locked with a locking screw.
Quality
Alloyed tool steel, hardened to HRC 55.



27610

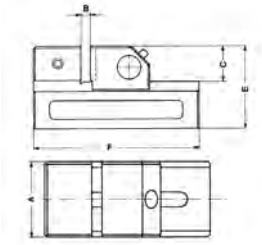




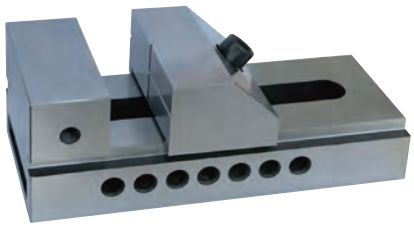
Length mm	W mm	H mm	h mm	Weight approx. g	27610	...
75	25	33	23	380		101
102	30	46	29	850		102

27617 Precision clamps

Design
Surface **precision-ground.**
Perpendicularity: 0.005/100 mm.
Parallelism: 0.005/100 mm.
Applications
For precise clamping on NC machines during grinding, eroding, measuring and milling work.
Quality
Tool steel, hardened, HRC 58.



27617



Clamping width B mm	A mm	C mm	E mm	F mm	Weight approx. kg	27617	...
65	50	25	50	140	1.4		101
100	73	35	67	190	4.1		102
125	100	45	90	245	7.3		103

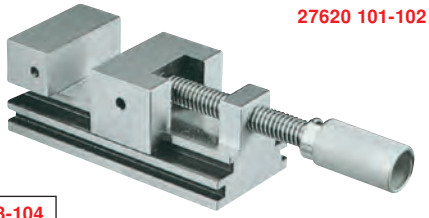
27620 Grinding and control vices

Design
Surface **precision-ground.** The **precision-angled design** allows the machining of workpieces from 4 sides.
Perpendicularity: 0.002/100 mm.
Parallelism: 0.002/100 mm.
Applications
For highly accurate machining of workpieces—grinding, drilling, milling, measuring—on all precision machines.
Quality
Tool steel, hardened, HRC 60.

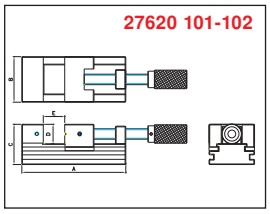
27620 101-102
With threaded spindle.

27620 103-104
With quick adjustment (no spindle). The movable jaw is pushed towards the workpiece on the V-guide and clamped by a screw.

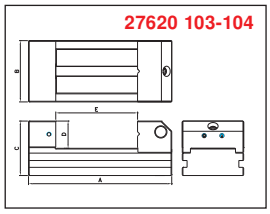
27620 101-102



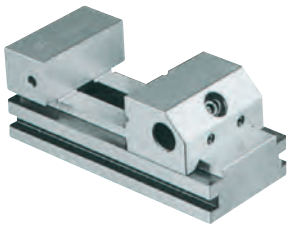
27620 101-102



27620 103-104



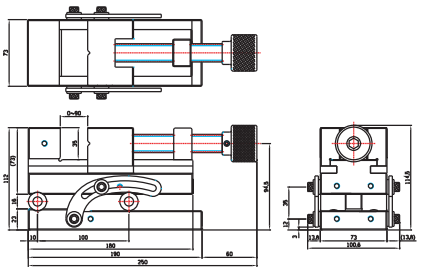
27620 103-104



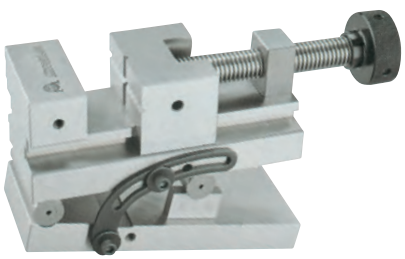
Clamping width E mm	A mm	B mm	C mm	D mm	Weight kg	27620	...
0–35	90	60	50	25	1.6		101
0–80	160	70	62	30	4.3		102
0–80	160	70	62	30	3.3		103
0–120	210	90	80	40	8.3		104

27622 Sine bar vice

Design
Surface **precision-ground.**
Perpendicularity: 0.005/100 mm.
Parallelism: 0.005/100 mm.
Axis distance: 100 mm.
Applications
For highly accurate machining of workpieces—grinding, drilling, milling, measuring—on all precision machines. For precise clamping; can be pivoted around the transverse axis.
Quality
Tool steel, hardened, HRC 58.



27622



Clamping width mm	Length mm	Width mm	Height mm	Weight kg	27622	...
0–90	190	73	112	10		101

= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

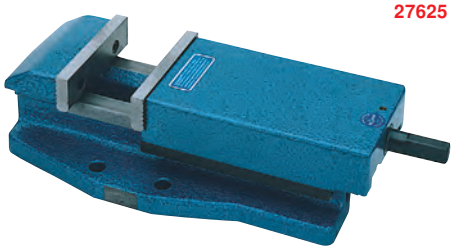
27625 - 27627 Machine vices

ROHM

27625
Design
Made of special cast iron, top pressure clamp, **long flat track guide** for the movable jaw, turned spindle, clamping jaws reversible, smooth and grooved.

27627
Standard turntable
Design
With ground support edge for additional support of the vice (for art. no. 27625 105 with additional clamping slots).

27627


27625

Jaw width mm	Clamping width mm	Jaw height mm	Overall height mm	Clamping groove width mm	Base plate L x W mm	Clamping force kN	Weight approx. kg	Vice 27625	...	Turntable 27627	...
113	105	31.6	90	14	300 x 160	25	13.5		102		102
135	125	39.6	104	14	365 x 200	35	25.0		103		103
160	145	49.6	120	18	410 x 240	45	40.0		104		104
200	185	62.6	145	22	460 x 280	55	65.0		105		105

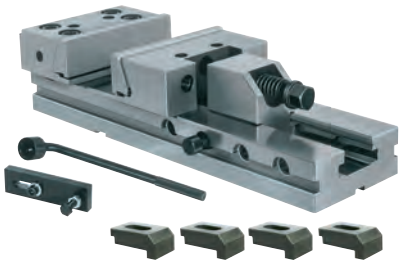
27628 Machine vices, type MSR

ROHM

Design
Mechanical clamping system. Body made of **hardened steel 60 HRC. Clamping repeat accuracy 0.02 mm.**

Scope of delivery:
Includes spanner, workpiece stop and 4 adjustable clamps (without T-groove screws).
Applications
For milling machines and machining centres.

27628



Jaw width mm	Clamping width mm	Jaw height mm	Clamping groove width mm	Base plate L x W mm	Clamping force kN	Weight approx. kg	27628	...
125	150	40	20	345 x 95	30	12.7		101
150	200	50	20	420 x 125	50	25.6		102
150	300	50	20	520 x 125	50	29.5		103
175	400	58	20	655 x 145	60	51.2		104

27629 Adjustable clamps for vices, type MSR

ROHM

Design
Complete, for base mounting. Individual.

Applications
For art. no. 27628.

Note:
Four adjustable clamps are required for proper clamping.

27629

Suitable for T-groove	For jaw width 125 27629	...	For jaw width 150/175 27629	...
12		101		201
14		102		202
16		103		203
18		104		204

27631 Turntables for vices, type MSR

ROHM

Applications
Turntables for machine vices, type MSR, see art. no. 27628.

27631

For jaw width mm	A mm	B mm	C mm	D mm	27631	...
125	226	23	47	95		101
150	290	28	58	125		102
175	320	28	58	145		103

27632 - 27635 Special clamping jaws for vices, type MSR

ROHM

Design
Individual.
Applications
For art. no. 27628.

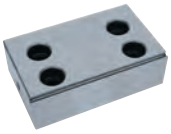
27632
Stepped jaws
Applications
For fixed jaw.

27633
Stepped jaws
Applications
For movable jaw.

27634
Prism jaws with jaw step
Applications
For movable jaw.

27635
Angle jaw
Applications
For movable jaw (for round parts).

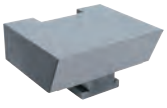
27632



27633

27634

27635



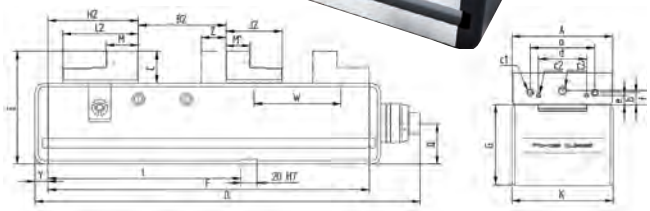
For jaw width mm	27632	...	27633	...	27634	...	27635	...
125		101		101		101		101
150		102		102		102		102
175		103		103		103		103

27656 NC compact clamp, type RKE

ROHM

27656

Design
With mechanical power transmission; can be clamped horizontally, vertically or laterally. Steel basic body with all sides **hardened and ground.** Stepped jaws, **fixed,** reversible; **stepped jaws**, **movable,** reversible. Long sliding clamp with transverse grooves. Drive spindle with default clamping force setting. Mounting thread M12 for workpiece stop. Clamping surfaces for adjustable clamps; reliable chip protection prevents the penetration of chips into the interior of the body.



Note:
For accessories, see art. no. 27657–27663 and 27682–27684.
Standard interchangeable jaw grips on request.
Clamping width for reversible stepped jaws: Jaw width 125 = 97–312 mm, 160 = 131–451 mm.

Jaw width A mm	B2 mm	E mm	F mm	G mm	H2 mm	K mm	W mm	Clamping force kN	Weight approx. kg	27656	...
125	0–216	140	400	100	112.5	126	1 x 108.0	40	41		**201**
160	0–320	165	530	115	130.0	162	2 x 102.5	60	79		**202**

27649 NC compact clamp, type MM-G 125/160

ATORN®

27649 101

Design
Standard version, can be clamped on the base. Clamping system **mechanical/mechanical. Basic body made of GGG. Stepped jaws reversible, hardened and ground.** Long sliding clamp with transverse grooves, drive spindle with default clamping force setting. Mounting thread M 12 for workpiece stop. Clamping surface for adjustable clamps. Reliable chip protection prevents chips from penetrating into the interior of the body.
Applications
Locating holes compatible with ATORN zero-point clamping system. Depth gauge 200 mm.

Note:
For accessories, see art. no. 27657–27663 and 27682–27684.

Jaw width mm	Jaw offset range mm	Travel of slide mm	Total length mm	Total height mm	Jaw height mm	Clamping range (high side) mm	Clamping range (step side) mm	Clamping force kN	Weight kg	27649	...
125	1 x 108.0	109	463	140	40	0–216	97–312	40	41		**101**
160	2 x 102.5	117	618	165	50	0–320	131–451	60	79		**102**

27657 - 27663 Accessories for NC compact clamp, type RKE + MMG

27657
Set of stepped jaws

27658
Set of support jaws

27659
Claw insert, single with fastening screw suitable for support jaws.

27663
Angle drive, 90°
Applications
Ideal for side-mounted clamping or for large machine tables.

27663 101
Dimensions: A = 133 mm, B = 106 mm, C = 98 mm.

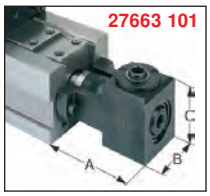
27663 102
Dimensions: A = 166 mm, B = 111 mm, C = 98 mm.

27657

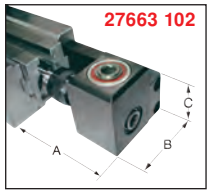
27658

27659 201-202

27663 101



27663 102



For jaw width mm	27657	...	27658	...	27659	...	27663	...
92–125		**101**		**101**		**201**		**101**
160		**102**		**102**		**202**		**102**

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27651 High-pressure vice, NCA

kesel

Design
- ALLMATIC compatible jaw interface
- Small dimensions
- Optimum ratio between the clamping width and overall length
- Rigid basic body made of GJS 600
- Inductively hardened
- Upper and lower side ground
- Pairing accuracy 0.02 mm

Advantages:
- Fully enclosed spindle
- Increased functional safety
- Optimised chip protection
- Minimal cleaning effort
- Mechanical power booster
- Quick-change system for spindle unit

Scope of delivery:
- Basic body with stepped jaws
- 1 hand crank
- 4 adjustable clamps

Note:
The overall length remains unchanged even when clamping large workpieces.

① Clamping with hand crank; highest clamping forces are achieved with max. 2 spindle revolutions

② Maintenance-free high-pressure spindle with constant pressure. Wear-resistant, purely mechanical power booster. No decrease in clamping force

③ Guideways inductively hardened and ground

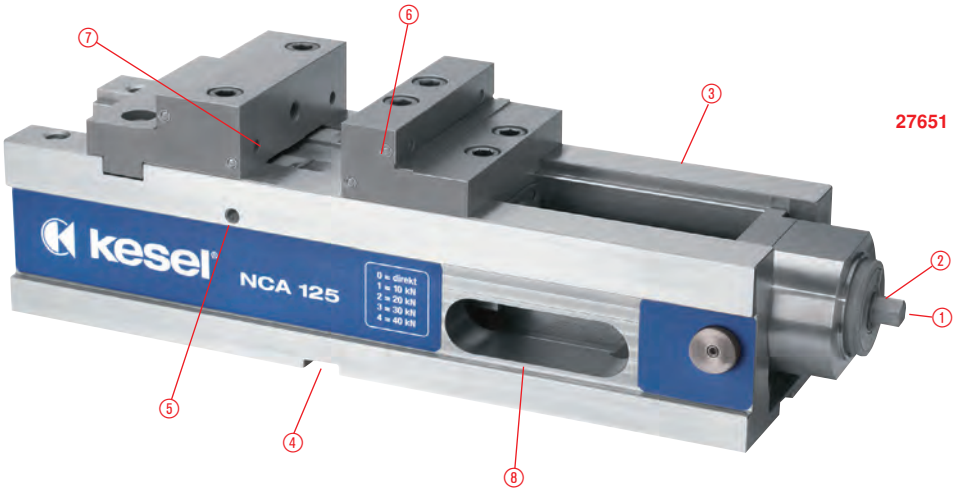
④ Precise cross-directional aligning grooves on the underside

⑤ Thread for workpiece stop

⑥ Quick-change click system, Kesel

⑦ Thread for holding Kesel/ALLMATIC interchangeable jaws (except for ALLMATIC step strips)

⑧ Outlet for chips and coolant



27651

Type	Jaw width mm	Clamping width (high side) mm	Clamping width (step side) mm	Clamping force max. kN	Clamping force steps	Basic body (L x W x H) mm	Total length mm	Bed height mm	Weight kg	27651	...
NCA 90	90	0–126	91–217	28	11	305 x 90 x 80	340	80	15		101
NCA 125	125	0–182	131–313	40	4	424 x 126 x 100	483	100	35		102
NCA 160	160	17–263	187–433	60	4	560 x 164 x 115	616	115	65		103

27592 5-axis clamp, TCA 70

ATORN®

NEW

Design
- Guides hardened and ground on all sides
- Mechanical clamping system without power transmission with manual control
- Centric clamping with two movable jaws

Advantage:
- Repeat accuracy 0.02 mm with the same clamping force/clamping properties
- Symmetrical design = workpiece is centred and parallel
- Telescopic spindle; interference contour remains unchanged
- Centric clamping and simple programming without zero offset
- Integrated scale ring for fine adjustment of the centre position
- Material allowance is distributed symmetrically
- Conventional clamping and grip clamping possible without pre-stamping
- Support height of the workpiece 192 mm
- Quick-change jaw system without tools, using quick-release fastener
- Change time per pair of jaws less than 10 seconds
- Jaws reversible for max./min. clamping widths with one pair of jaws
- Location holes for ATORN zero-point clamping system, depth gauge 200 mm, as standard
- Mounting on machine table with through bolts/ fitting screws in 50/63 mm increments
- Fastening also possible with adjustable clamps
- Low weight (without jaws):
  TCA 70 K (27592 101) = 17.5 kg
  TCA 70 M (27592 102) = 19.5 kg

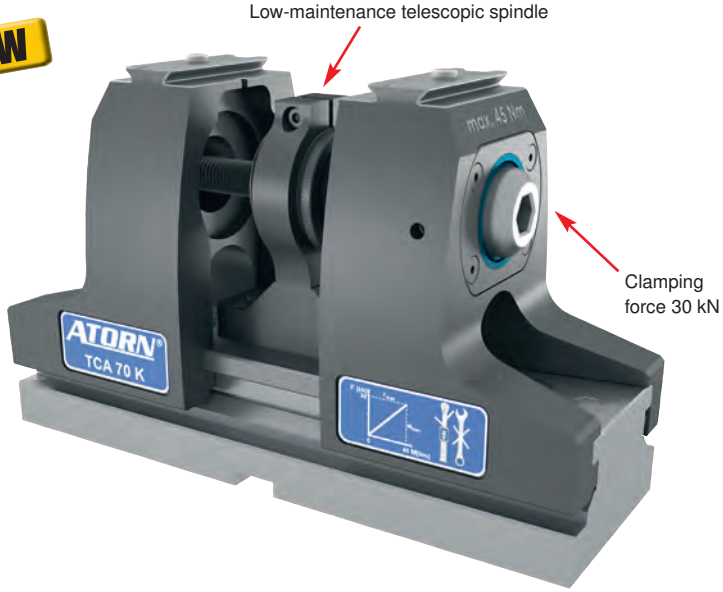
Scope of delivery:
- ATORN TCA 70 without jaws
- Quick start guide
- Hook eye for transport by crane hook
- Hand crank for presetting with hexagon socket AF 14 mm

Applications
Ideal for use on 5-axis machining centres. Operation with torque wrench/max. 45 Nm = **30 kN clamping force.**

Note:
For suitable torque wrench, 1/2 inch, see art. no. 55640 204.
For suitable hexagon screwdriver bit see art. no. 51424 120.

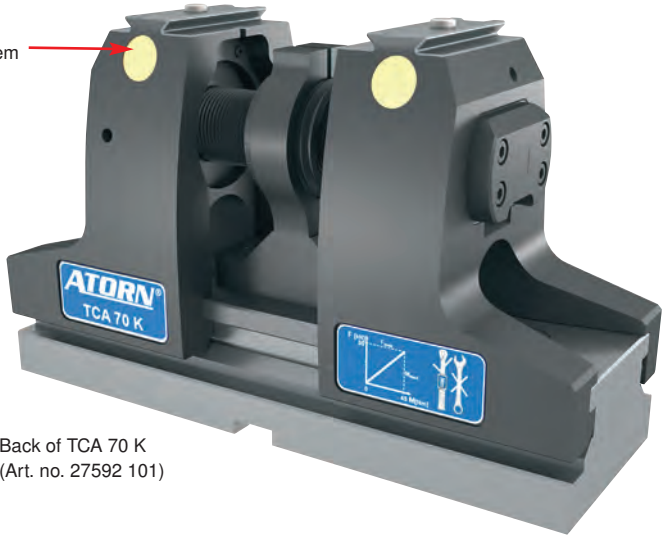
Low-maintenance telescopic spindle

27592 101

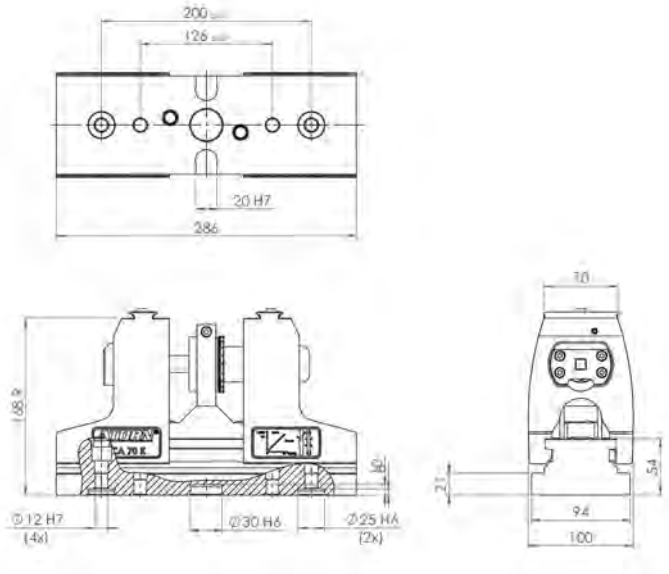


Clamping force 30 kN

Quick jaw change system



Back of TCA 70 K
(Art. no. 27592 101)



Type	Total length mm	Basic body height mm	Workpiece support height smooth mm/grip mm	Clamping width smooth/grip mm	Groove widths mm (H7)	Max. clamping force kN	Max. required torque Nm	27592	...
TCA 70 K	286	168.9	185/191 / 185/192	9–135* / 9–134*	20	30	45		**101**
TCA 70 M	351	168.9	185/191 / 185/192	42–200* / 42–199*	20	30	45		**102**

*Different clamping steps

For accessories see next page

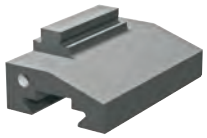
Continued

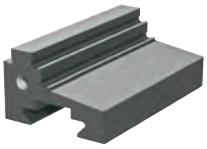
ATORN®

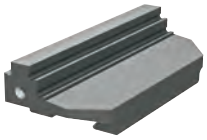
NEW

Stepped jaws

27592 103-105
Stepped jaws
- Steps are hardened and coated
- For parallel workpieces
- Contents: 1 piece


27592 103

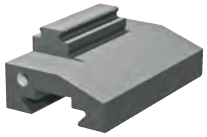

27592 104


27592 105

	Stepped jaw (2nd clamping)	
Jaw width mm	27592	...
38		103
70		104
100		105

Grip jaws

27592 106-108
Grip jaws
- Clamping of unmachined parts
- Integrated row of grips in horizontal position to prevent vibration when parts are placed on edge
- Additional clamping surfaces ground on both sides
- Minimum lost clamping edge 4 mm
- Suitable for material up to 1000 N/mm²
- Contents: 1 piece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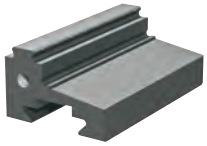
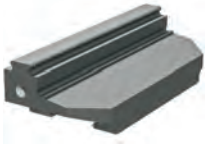

27592 107


27592 108

	Grip jaw (1st clamping)	
Jaw width mm	27592	...
38		106
70		107
100		108

Prism jaw

27592 109
Vee block jaw
- Clamping width at TCA 70 K (27592 101):
  horizontal: 10–40 mm
  vertical: 16 - 80 mm
- Clamping width at TCA 70 M (27592 102):
  horizontal: 10–40 mm
  vertical: 47 - 110 mm
- Contents: 1 piece

27592 109

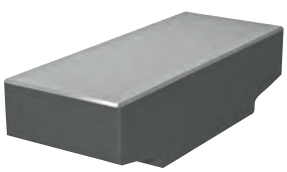
	Vee block jaw	
Jaw width mm	27592	...
70		109

Soft jaws

27592 110-111
Soft jaws
- For self-production of special jaws
- Max. machining depth 15 mm
- Contents: 1 piece

27592 110
Design
Material: Case-hardening steel 21MnCr5G

27592 111
Design
Material: AlZn5.5MgCu


27592 110

27592 111

		Soft jaw	
Jaw width mm	Material	27592	...
120	Steel		110
120	Aluminium		111

Continued

27592 Accessories for 5-axis clamp, TCA 70

Continued

ATORN®

NEW

Workpiece stops

27592 112
Design
- Mechanical, complete

27592 113
Design
- Magnetic, complete

27592 112

27592 113

Version	27592	...
Mechanical		112
Magnetic		113

Adjustable clamps (pair)

27592 114
- For mounting the clamp on the machine table
- Delivery: 1 pair

27592 114

Thread	27592	...
M 10/12/16		114

Alignment and fixing sets

27592 115-117
For aligning (positioning) and mounting the clamp on a pallet or machine table.

27592 115-117

Groove size mm	Thread	27592	...
14	M 12		115
16	M 12		116
18	M 12		117

Alignment and fixing sets including mounting base

27592 118-122
For aligning (positioning) and mounting the clamp on a pallet or machine table.

27592 118-122

Groove size mm	Thread	27592	...
12	M 10		118
14	M 12		119
16	M 14		120
18	M 16		121
22	M 16		122

Shoulder screw

27592 123

Ø mm	Thread	27592	...
12	M 12		123

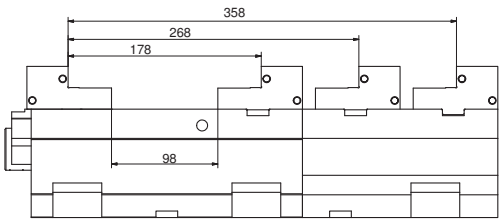
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27590 ATORN 5-axis compact clamp

Design
Sturdy, compact basic body (GGG60). Guideways inductively hardened and ground. Maintenance-free, enclosed high-pressure spindle with retensioning spring assembly. Precise aligning grooves. Optimised chip protection. Minimal cleaning effort. Mechanical/mechanical clamping system.

Advantages:
- Max. accessibility during machining
- Patented quick adjustment
- Little clamping loss even when clamping close to the edge
- Very low clamping loss even when clamping with grip inserts
- Stepped jaws with clipping devices for underlay bars

Applications
For 5-axis machines or on CNC machines. Safe and fast clamping of blanks. Exchangeable grip jaws for flame and saw cuts.

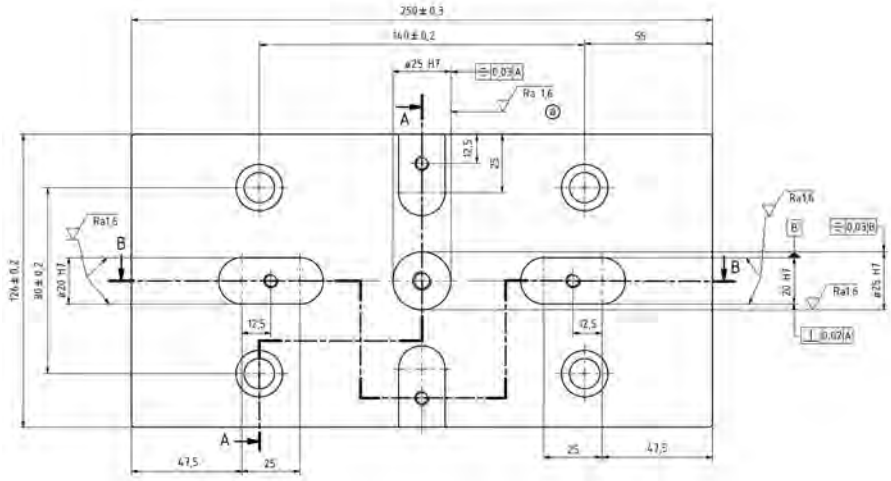


Scope of delivery, basic body:
- Without jaws
- Including 4 adjustable clamps

Scope of delivery, substructure console:
- Without fastening material

27590 101

Basic body art. no. 27590 101	
Height mm:	100
Width mm:	126
Body length mm:	250
Total length mm:	273
Clamping force at 110 Nm kN:	40



27590 104

Substructure console art. no. 27590 104	
Height mm:	100
Width mm:	126
Body length mm:	250

27590 201 27590 202 27590 203 27590 204 27590 301 27590 401 27590 402 27590 501-502 27590 601 27590 602

Design	Dimensions H x W x L mm	Clamping width mm	Pieces	27590 ...
Basic body including accessories	100 x 126 x 250	-	1	101
Substructure console	100 x 126 x 250	-	1	104
Stepped jaws, fixed	39.5 x 125 x 78	0–178	2	201
Stepped jaw, movable	39.5 x 125 x 78	0–178	1	202
Grip jaw, fixed	25 x 160 x 105	10–202	1	203
Grip jaw, movable	25 x 160 x 105	10–202	1	204
Pendulum jaw with 2 grip inserts	20 x 156 x 65	6–168	1	301
Screw-on grip strips	19.5 x 125 x 5	39–172	2	401
Screw-on grip strips	39.5 x 125 x 6.4	5–82	2	402
Step strips for clipping	15–125	10–178	2	501
Step strips for clipping	35–125	10–178	2	502
Screw-on jaws for large clamping widths	15 x 125 x 45	75–240	2	601
Screw-on jaws for narrow workpieces	15 x 60 x 45	7–168	2	602

27591 Mechanical centric clamp, MZE

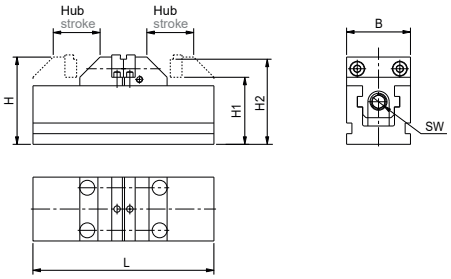
SPREITZER

27591 101-106
Design
- Robust steel design
- Basic body, plain jaws and spindle surface-hardened
- High clamping force
- Compact design
- Maximum freedom of movement for 5-sided and multi-sided machining
- Centring accuracy 0.03 mm
- Mounting drilling template on the underside.

Scope of delivery:
- Includes 1 pair of hard stepped jaws with undercut
- 1 operating key

Applications
Specially designed for clamping and machining of unmachined parts on multi-axis machining centres and for use as an economical centric clamping solution on palletising or automation systems.

27591 101-106



Jaw width mm	L mm	H mm	H1 mm	H2 mm	Clamping width mm	Clamping force kN	AF mm	Weight approx. kg	27591	...
36	80	50	39	48	4–40	8.0	8	1		**101**
60	170	82	63	80	18–90	12.5	12	4		**103**
100	280	114	90	112	50–190	22.5	15	15		**105**
125	360	140	110	138	58–250	32.5	18	30		**106**

Short clamping jaws, hardened

27591 201-206
Applications
- For form-fit clamping of workpieces during roughing
- 15° undercut (dovetail), maximum retention force on workpiece

Jaw width mm	Clamping depth mm	27591	...
36	4		**201**
60	4		**203**
100	4		**205**
125	4		**206**

27591 201-206

Grip jaws, hardened and coated

27591 211-216
Applications
- For increasing the retention forces on workpiece blanks

Jaw width mm	Clamping depth mm	27591	...
36	4		**211**
60	4		**213**
100	4		**215**
125	4		**216**

27591 211-216

Interchangeable jaw grips, hardened and ground

27591 223-226
Applications
- Increased clamping position allows the use of short tools, especially for small workpieces
- Suitable for holding all standard clamping jaws and self-manufactured jaws

Jaw width mm	H1 mm	Clamping width mm	27591	...
60	20	7–42		**223**
100	28	7–146		**225**
125	40	7–195		**226**

27591 223-226

Substructure

27591 233-235
Scope of delivery:
Includes centring bolts and fastening screws.
Applications
- For collision-free machining with short tools
- To reduce the Z movement of the machine spindle

Jaw width mm	L mm	W mm	H mm	27591	...
60	170	160	78		**233**
100	280	160	78		**235**

27591 233-235

Fastening material

27591 243-246
Scope of delivery:
2 centring pins, d = 14 mm; 4 adjustable clamps; 4 screws, M 12; 4 T-sliding blocks, 14 mm.
Applications
- For mounting the centring clamp MZE on the machine table
- T-groove dimension 14 mm.

Jaw width mm	27591	...
60		**243**
100		**245**
125		**246**

27591 243-246

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27595 Mechanical centre clamping device

ATORN®

Design
- Robust steel design
- Basic body hardened and ground. spindle nitrided
- Compact design, high clamping force
- Sturdy chip guard and scraper to protect the spindle and spindle nut against dirt and damage
- Centring and repeat accuracy 0.02 mm
- Mounting of the vice:
  - From above through the basic body
  - From below with threads in the basic body
  - With adjustable clamps

Advantage:
- The precise grinding height means the clamp can also be mounted in series

Applications
Ideal for 5-sided machining or for use as an economical solution on palletising or automation systems.

Scope of delivery:
- Basic body with plain jaw set for ATORN interchangeable jaw click system (art. no. 27870)

Note:
*Supplied **without interchangeable jaw grips.***

						Centre clamping device		Adjustable clamp	
Basic body W x D x H mm	**System**	**Max. clamping range* mm**	**Width of interchangeable jaw grips min.–max. mm**	**Clamping force max. kN**	**Torque max. Nm**	**27595**	**...**	**27595**	**...**
90 x 180 x 45	2	96	65–180	30	80		**101**		
125 x 250 x 66	3	152	80–250	40	100		**102**		
For screw M 10	-	-	-	-	-				**110**
For screw M 12	-	-	-	-	-				**111**

				Torque wrench	
Driving square inch	**Adjustment range Nm**	**Scale graduation Nm**	**Length mm**	**55640**	**...**
1/2	20–120	1	456		**204**

3/8"

			Hex socket wrench insert	
AF mm	**Length mm**	**Outer Ø mm**	**51222**	**...**
15	30	20.8		**110**

27870 Interchangeable jaws (single)

ATORN®

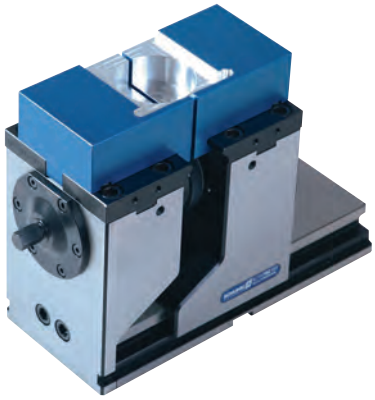
Design
- Quick-change system can be adapted for use with many common vices
- Mounting, guide and lock offer a high degree of production safety
- Plain jaws and stepped jaws nitrided
- Interchangeable jaw grips made of high-strength aluminium or case-hardening steel

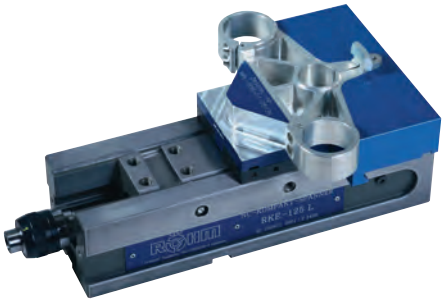
Advantage:
- Unprecedented economy and measurable advantages in daily use
- Quick change, even of special jaws
- Jaws in the system compatible with one another
- Jaw width up to 400 mm

Note:
Plain jaw sets also deliverable for other vice types on request.

Plain jaw set

Vice	Type	Design mm	For system	27870	...
ATORN	MM-G	125	3		101
ATORN	MM-G	160	4		102
ATORN	5-axis clamp	125	3		142
Allmatic	Centro Grip	125	3		103
Allmatic	Duo Plus	125	3		104
Allmatic	LC/TC up to April 98	125	3		105
Allmatic	LC/TC from May 98	125	3		106
Allmatic	T-Rex (14 mm groove)	125	3		107
Allmatic	T-Rex (XL)	125	3		108
Allmatic	Titan	125	3		109
Arnold Arno	NC Twin	125	3		110
Fresmak Arno	MB2	125	3		111
Fresmak Arno	Twin	90	2		112
Fresmak Arno	Twin	125	3		113
Garant	NC-LC	125	3		114
Garant	NC-TC	125	3		115
Gressel	Centrinos	65	2		116
Gressel	Centrinos	100	2		117
Gressel	Duogrip (all types)	100	3		118
Gressel	Duogrip (all types)	125	3		119
Gressel	Grepos 5X	125	3		120
Gressel	Gripos	100	3		121
Gressel	Gripos	125	3		122
Hilma	CS	80	2		123
Hilma	DCS	80	2		124
Hilma	DS/TS	100	2		125
Hilma	DS/TS	125	3		126
Hilma	KNC	100	3		127
Hilma	KNC	125	3		128
Hilma	KNC	160	4		129
Hilma	SCS	80	2		130
Hilma	SCS	120	3		131
Röhm	KZS	80	2		132
Röhm	KZS	125	3		133
Röhm	RKD	125	3		134
Röhm	RKE/RKG	125	3		135
Röhm	RKE	160	4		136
Röhm	RKZ	125	3		137
Schunk	KSP-250. KSH-250	125	3		138
WNT	DSG	125	3		139
WNT	NCG	125	3		140
WNT	ZSG	125	3		141





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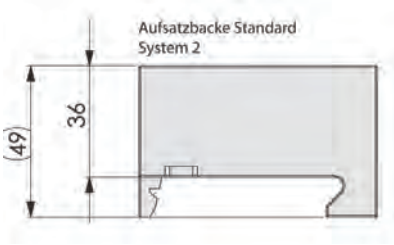
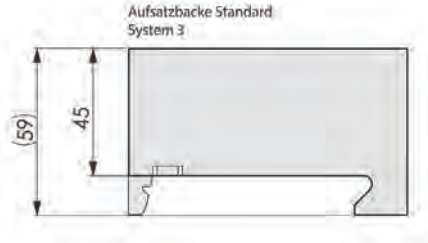
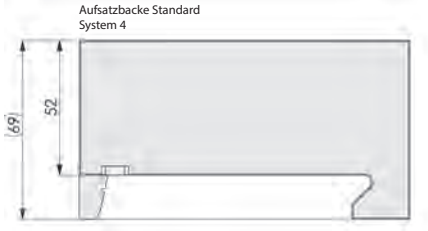
Continued

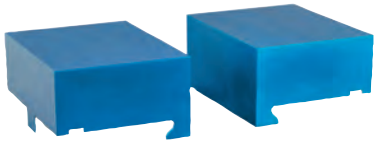
Design
- Block interchangeable jaw grips made of high-strength aluminium or nitrided case-hardening steel
- Stepped jaws made of case-hardening steel

Advantage:
- Wide variety and many possible combinations
- Milling down the old clamping contours enables the jaws to be used multiple times









Steel interchangeable jaw grips 1 piece

System	Jaw width mm	27870 ...
2	65	202
2	70	205
2	80	209
2	90	215
2	100	221
2	150	228
2	160	237
2	180	243
2	200	247
3	80	210
3	90	216
3	100	222
3	125	229
3	140	233
3	160	238
3	180	244
3	225	251
3	250	254
4	80	211
4	100	223
4	125	230
4	160	239
4	200	248
4	250	255
4	300	257
4	400	259

Alu interchangeable jaw grips 1 piece

System	Jaw width mm	27870 ...
2	65	201
2	70	204
2	80	206
2	90	213
2	100	218
2	125	225
2	160	234
2	180	241
3	80	207
3	90	214
3	100	219
3	125	226
3	140	232
3	160	235
3	180	242
3	200	245
3	225	250
3	250	252
4	80	208
4	100	220
4	125	227
4	160	236
4	200	246
4	250	253
4	300	256
4	400	258

Grip inserts

Design
- Optimal clamping results with workpieces that require short-term clamping

Advantage:
- High transmission of clamping forces at minimal clamping depths
- Optimum absorption of vibrations that can occur during machining
- Extension of the service life of the tools used

Note:
A calculation tool for positioning the grip inserts is available on our website at www.hhw.de. Enter a few details and the tool will calculate the ideal installation position for your grip inserts.

27870 301-306

Grip insert

Size	27870 ...
M 4 x 8	301
M 5 x 10	302
M 6 x 12	303

Grip insert

Size	27870 ...
M 8 x 16	304
M 10 x 20	305
M 12 x 24	306

27870 401

Accessories

	27870 ...
Lifting device for clamping jaws	401

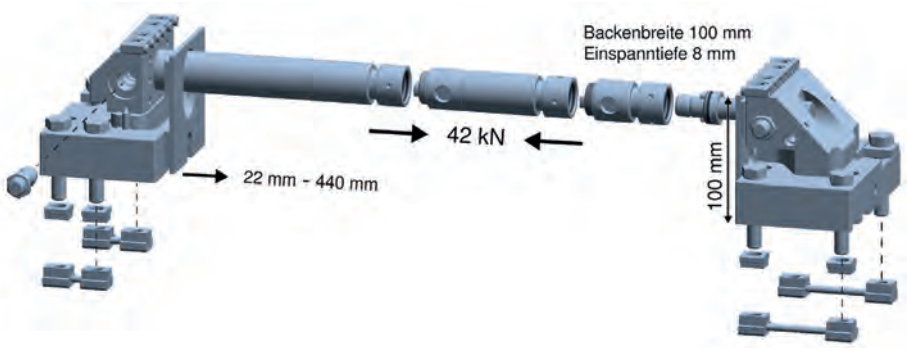
27669 Clamping systems 3AX-100 and 5AX-100

ATORN®

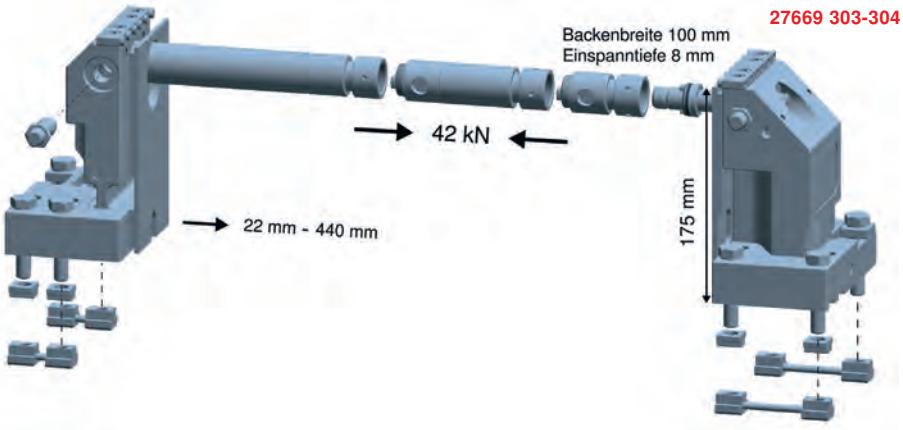
Design
- High clamping force (up to 42 kN) where it is required
- Feed spindle immediately below the workpiece support
- No widening of the jaws under load
- No distortion of the machine table
- Extreme system rigidity
- Clamping depth of 3 or 8 mm
- 3- or 5-axis machining with no projecting edges
- Any clamping width

Applications
For clamping workpieces on a 3- or 5-axis milling machine.

27669 301-302



27669 303-304

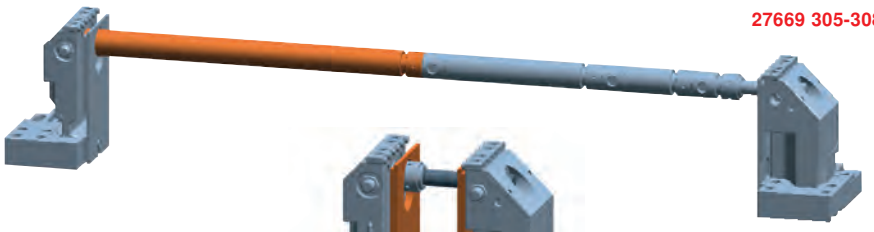


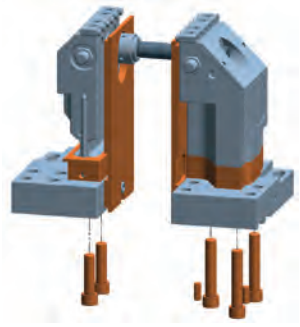
Type	For groove mm	27669 ...
3AX-100	14	301
3AX-100	18	302
5AX-100	14	303
5AX-100	18	304

Extension shaft with nut

Length mm	27669 ...
60	305
120	306
240	307
480	308

27669 305-308

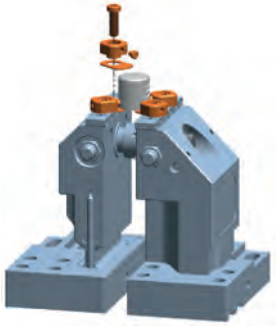


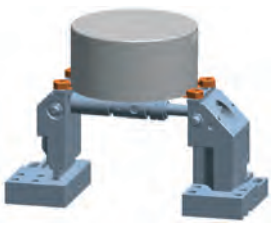


27669 309-313

For clamp	Height increase to mm	27669 ...
3AX-100	125	309
3AX-100	150	310
5AX-100	200	311
5AX-100	225	312
5AX-100	250	313

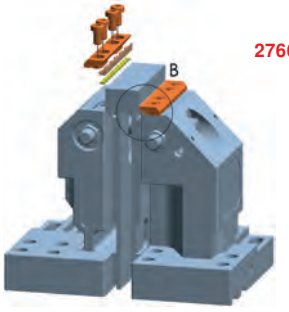
27669 314





Description	27669 ...
Round clamping chucks including pins, fastening material and support	314

27669 315



Description	27669 ...
Pull-down jaws, smooth	315

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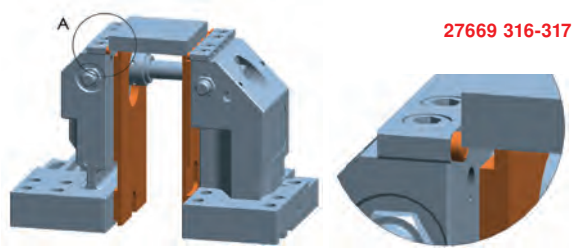
Continued

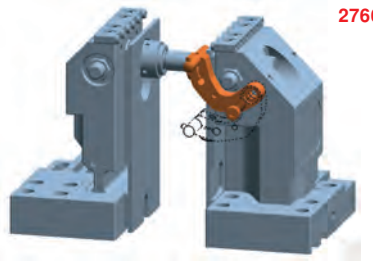
Designation	For clamp	27669 ...
Support strip, 105 mm, clamping depth 3 mm including 12 pins, ring cutter, 6 mm	3AX-100	316
Support strip, 180 mm, clamping depth 3 mm including 12 pins, ring cutter, 6 mm	5AX-100	317

27669 316-317



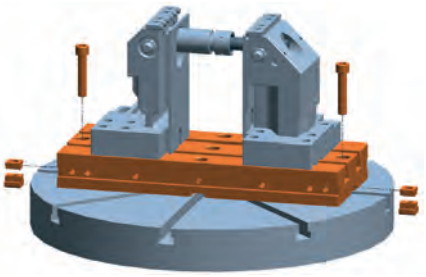
Description	27669 ...
Stop set, swivelling	318

27669 318



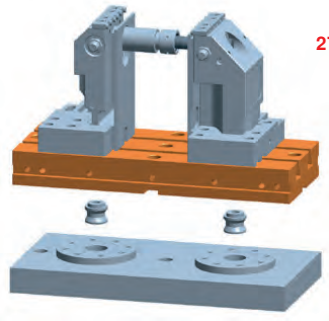
Designation	27669 ...
T-groove plate, 400 mm, including mounting for groove width 14 mm	319
T-groove plate, 400 mm, including mounting for groove width 18 mm	320

27669 319-320



Description	27669 ...
T-groove plate, 400 mm, with NP pin bore	323

27669 323

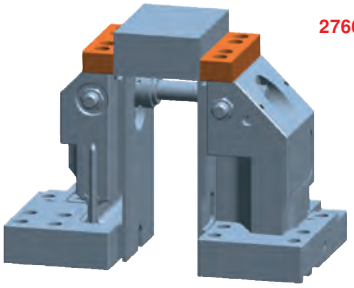


Designation	27669 ...
Pin, smooth	324
Pin with ring cutter Ø 4 mm	325
Pin with ring cutter Ø 6 mm	326

27669 324-326

Description	27669 ...
Clamping jaw, rough	327

27669 327



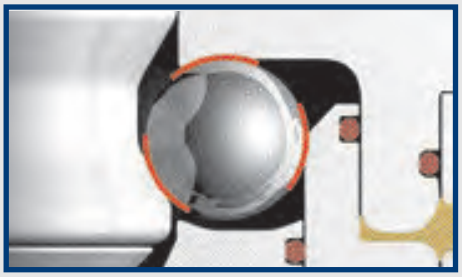
Your benefits at a glance!

10 distinctive features give you priceless benefits. The sum of these benefits is a new product line that meets your requirements 100% with experience in zero point clamping technology since 1985.

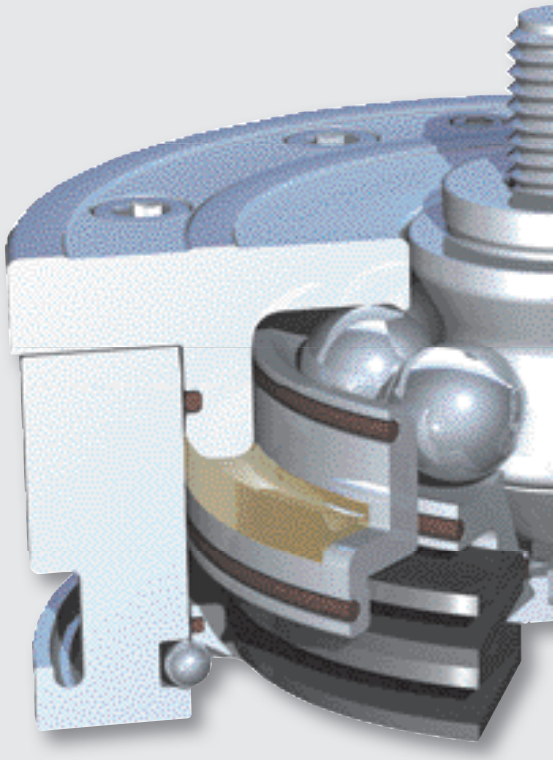
Stainless steel!

High-alloy hardened tool steel - so no corrosion.

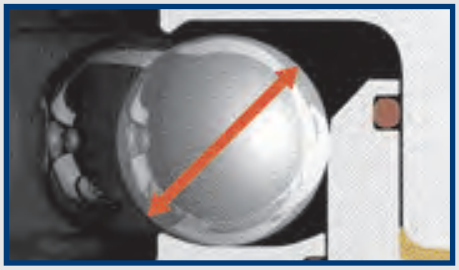
Form fit!



The balls are optimally enclosed on three sides.

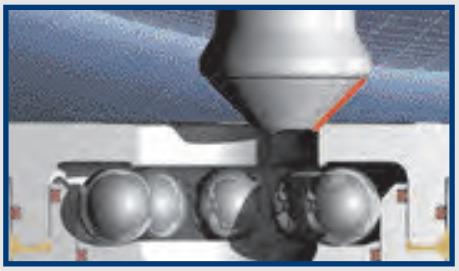


Large ball diameter!



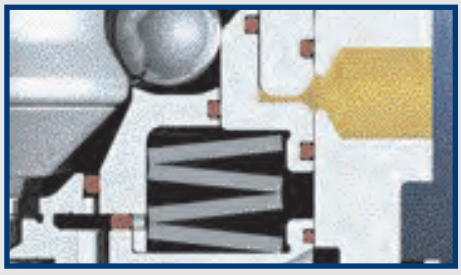
Ball surfaces 784% larger than conventional ball systems.

Large catchment!



Pre-positioning of 12 mm is sufficient.

Safety system!

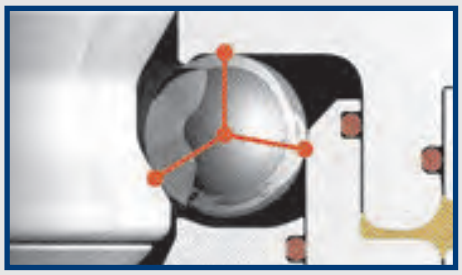


Process-safe - The clamping module can always be opened.

- **Secure the future**
  by optimising the product quality (repeat accuracy up to 2 µm
- **Increase the efficiency of processes**
  to ensure competitiveness
- **Increase profitability**
  by minimising set-up costs, increasing product quality and protecting the machine
- **Optimisation of production**
  through variability and flexibility with the market-leading system
- **Precise and user-friendly clamping**
  with maximum precision for a wide and demanding range of users

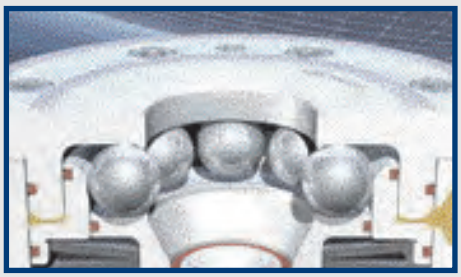
Zero-point clamping system

Three-cycle principle!

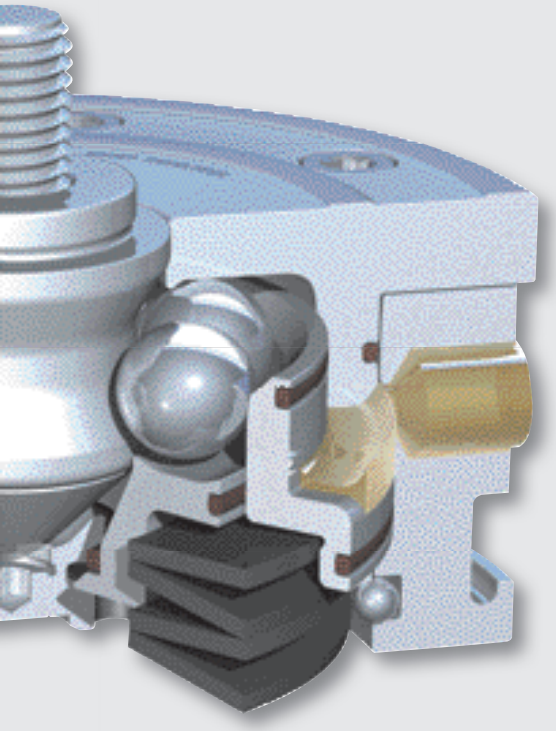


Power transmission by means of three-stroke principle. Due to the optimum distribution of force, there is no shear stress on the balls.

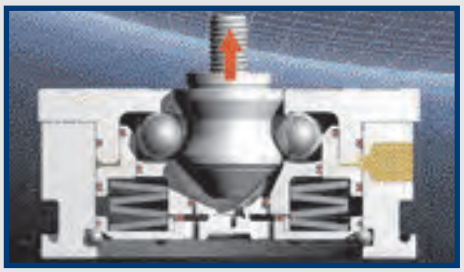
No ball cage!



The balls lie freely in the ball channel. Due to the freedom of movement of the balls, they always reposition themselves.

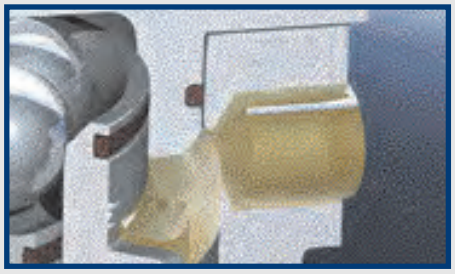


High holding, retraction and sealing forces!



size	Holding force [kN]	Retraction/sealing force up to [kN]	
		hydr.	pneum.
K 5	13	5	1.5
K 10	25	10	8
K 20	55	20	17
K 40	105	40	30

Media supply system!



Low installation depth, fewer supply holes required.

Tilt-free!

Tilt-free retraction and extension over the own supporting edge.

- **Optimum safety**
  even under difficult operating conditions for the demanding user
- **Individual adaptation**
  to the various tasks in order to meet the diverse requirements of the market
- **Sustainability and longevity**
  outstanding product quality and precision ensure the long-term success of the company
- **Technology transfer through optimal consulting**
  achieves success with difficult machining tasks, especially with 6-sided machining

27830 - 27845 Integrated clamping modules K10.2 and K20

ATORN®

Design
- Hydraulic opening
- Pneumatic blow-out
- Open operating pressure: min. 50 bar to max. 60 bar
- Cover and piston hardened
- Repeat accuracy < 0.005 mm

Applications
Zero-point clamping system for clamping with optimised setup time, for cutting and non-cutting machining in all areas and in the food, pharmaceutical and chemical industries.

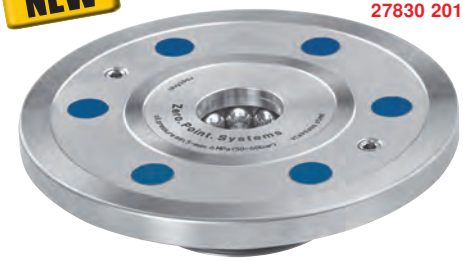
Note:
The integrated clamping module K10.2 is opened via the air hydraulic pump (optional, see art. no. 27843 201) with pneumatic input pressure of 5 bar.

The clamping module has high retention, retracting and locking forces. It is opened hydraulically (1) and locked mechanically by spring force. Subsequent uncoupling of the pressure lines is possible at any time (module is clamped without pressure).

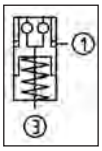
The clamping module with blow-out and support control has two connections: 1x hydraulic opening (1), 1x pneumatic blow-out and support control (3). (The pneumatic blow-out and support control can be connected optionally.)

NEW

27830 201

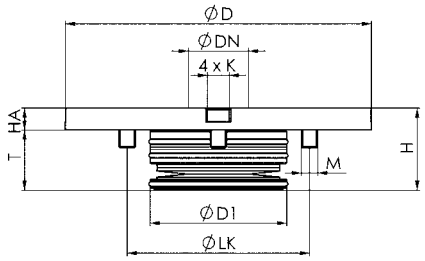


Without indexing

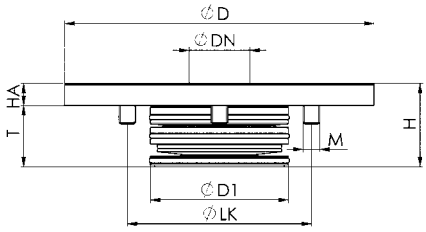


27830 202

With indexing



Without indexing



With indexing

													K10.2	
Design	**Retention force N**	**Retracting/ locking force kN**	**D mm**	**DN mm**	**D1 mm**	**H mm**	**HA mm**	**LK mm**	**M mm**	**K mm**	**T mm**	**Weight kg**	**27830**	**...**
K10.2/without indexing	25	10	112	22	50	30	8	77	M6	-	22	0.6		**201**
K10.2/with indexing	25	10	112	22	50	30	8	77	M6	8	22	0.6		**202**

													K20	
Design	**Retention force N**	**Retracting/ locking force kN**	**D mm**	**DN mm**	**D1 mm**	**H mm**	**HA mm**	**LK mm**	**M mm**	**K mm**	**T mm**	**Weight kg**	**27845**	**...**
K20/without indexing	55	20	112	32	78	44	10	88	M6	-	34	1.4		**101**
K20/with indexing	55	20	112	32	78	44	10	88	M6	8	34	1.4		**201**

27831 Multiple clamping stations, K10.2

ATORN®

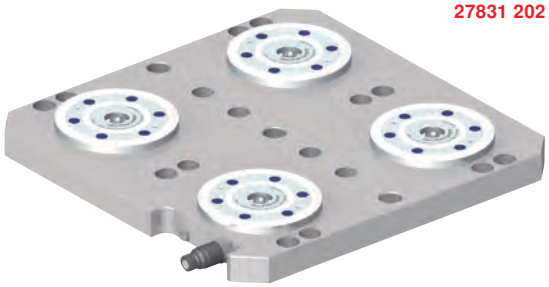
Design
- Hydraulic unlocking
- Pneumatic blow-out
- Steel, unhardened
- Repeat accuracy < 0.005 mm

Advantage:
- Low overall height of just 36 mm

Applications
Hydraulic clamping stations for clamping with optimised setup time on machine tables with 63, 100 and 125 mm groove spacing. Mounted using M12 cheese head screws. At least two locating holes are provided for alignment. The pitch of the clamping modules is 200 mm. The quick-action coupling plug is pre-assembled and the integrated blow-out function can be connected individually.

NEW

27831 202



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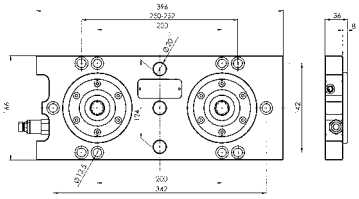
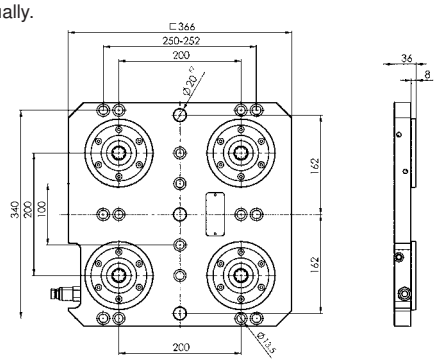
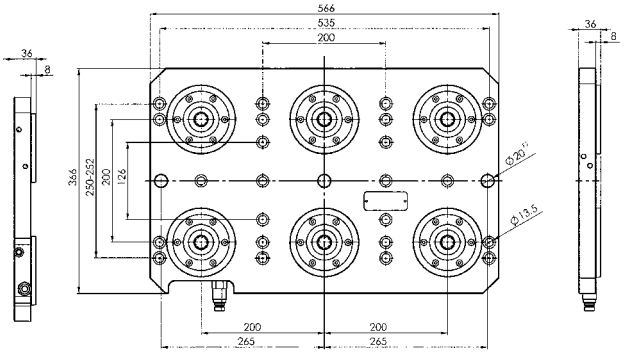


27831 202



27831 203



Design	Retraction/ locking force up to kN	Retention force kN	Weight kg	K10.2 27831	...
K10.2/2x	2 x 10	2 x 25	14		201
K10.2/4x	4 x 10	4 x 25	30		202
K10.2/6x	6 x 10	6 x 25	46		203

27846 Multiple clamping stations, K20

ATORN®

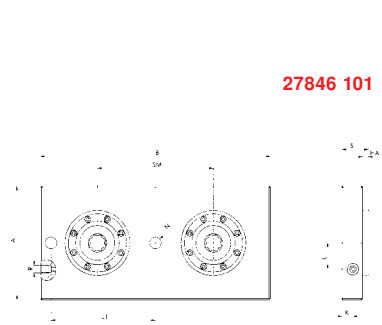
Design
- Hydraulic unlocking
- Steel, unhardened
- Repeat accuracy < 0.005 mm

Note:
On request, mounting holes can be created in the base plate according to your specifications.

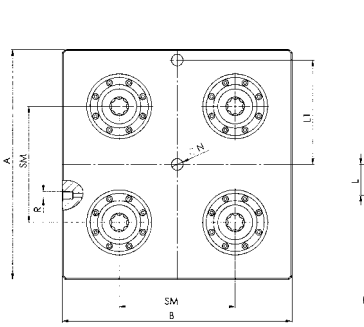
NEW

27846 201

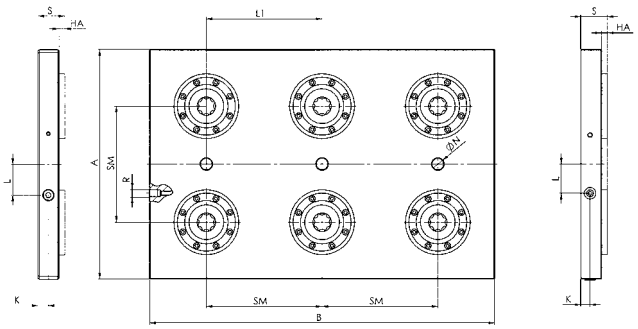
27846 101



27846 201



27846 301



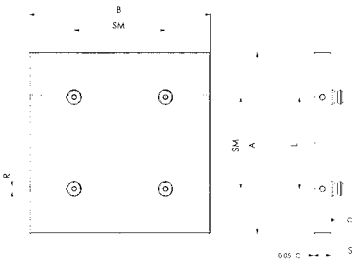
Design	Retraction/ locking force up to kN	Retention force kN	A mm	B mm	HA mm	K mm	L mm	L1 mm	N mm	R	S mm	SM mm	Weight kg	K 20 27846	...
K20/2x	2 x 20	2 x 55	196	396	10	19	45	180	20	G1/4	46	200	21.9		101
K20/4x	4 x 20	4 x 55	396	396	10	19	50	180	20	G1/4	46	200	44.0		201
K20/6x	6 x 20	6 x 55	396	596	10	20	50	200	20	G1/4	46	200	75.0		301

27836 - 27847 Replacement pallets for K10.2 and K20

ATORN®

Design
- High-strength aluminium
- Including clamping nipple and nipple catchment screw

Note:
On request, mounting holes can be drilled into the replacement pallet according to your specifications.
Different dimensions, pitches and number of clamping nipples deliverable on request.



NEW

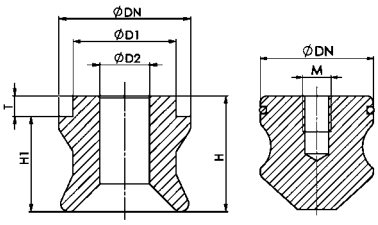
27836 202

For clamping station Size/design	A mm	B mm	L mm	R	S mm	SM mm	Weight kg	K10.2 27836	...	K20 27847	...
K10.2/2x	166	396	90	M12	30	200	6		201		
K10.2/4x	366	366	200	M12	30	200	10		202		
K10.2/6x	366	566	200	M12	30	200	16		203		
K20/2x	196	396	120	M12	40	200	6				101
K20/4x	396	396	200	M12	40	200	16				201
K20/6x	396	596	200	M12	40	200	25				301

27837 - 27848 Clamping nipples

ATORN®

Design
- Hardened, for hydraulic and pneumatic clamping modules



NEW

27837 - 27848

Size	Type	ØDN mm	ØD1 mm	ØD2 mm	H mm	H1 mm	M mm	T mm	Weight g	K10.2 27837	...	K20 27848	...
K10.2	Zero-point nipple	22.0	15	8	19	16	-	3	30		201		
K10.2	Sword nipple	22.0	15	8	19	16	-	3	30		202		
K10.2	Undersize nipple	21.8	15	8	19	16	-	3	30		203		
K10.2	Protection nipple	21.8	-	-	-	-	M8	-	30		204		
K20	Zero-point nipple	32.0	25	12	28	23	-	5	110				101
K20	Sword nipple	32.0	25	12	28	23	-	5	110				102
K20	Undersize nipple	31.8	25	12	28	23	-	5	110				103
K20	Protection nipple	31.8	-	-	-	-	M8	-	110				104

27838 - 27849 Nipple catchment screws

ATORN®

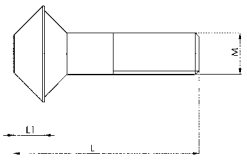
Design
- Strength class 10.9

Applications
Suitable for clamping nipples.

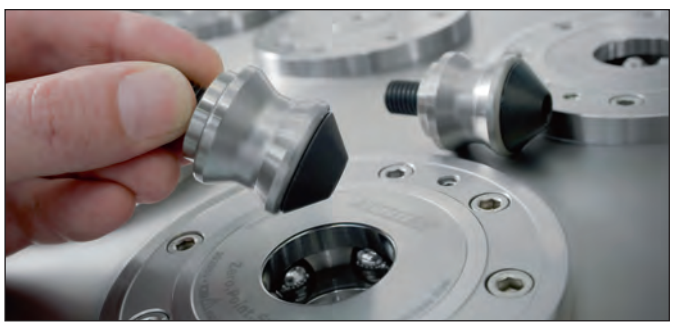
Note:
Versions in different lengths and materials (e.g. stainless steel) on request.

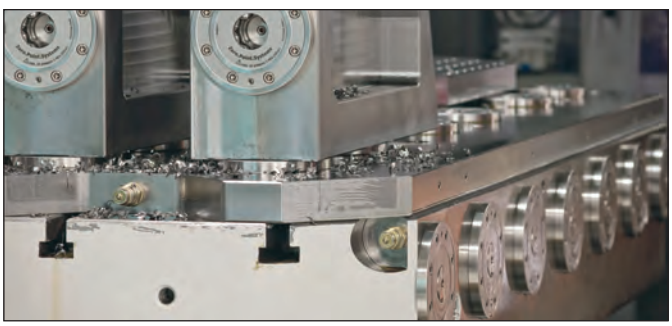
NEW

27838 - 27849



Size	M mm	L mm	L1 mm	Weight g	K10.2 27838	...	K20 27849	...
K10.2	M8	37	6	30		201		
K20	M12	54	9	70				101





= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27840 High-pressure hose

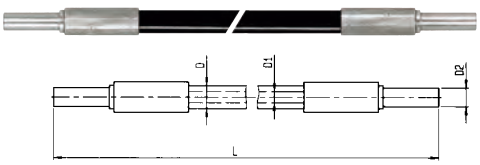
ATORN®

Design
- Fitting made of steel, zinc-plated and passivated
- Plastic hose with brass-plated steel wire and high tensile strength

Applications
The high-pressure hose is used for the hydraulic connection of surface-mounted clamping modules or clamping stations to the pressure generator, e.g. pressure booster or air hydraulic pump.
Bending radius min. 30 mm.

NEW

27840



Size	Test pressure bar	Operating pressure bar	ØD mm	ØD1 mm	ØD2 mm	L mm	Weight g	27840 ...
K10.2/K20	750	375	9.8	5	8	2000	265	201

27841 Quick-action coupling

ATORN®

Design
- Zinc-plated
- Max. operating pressure 325 bar

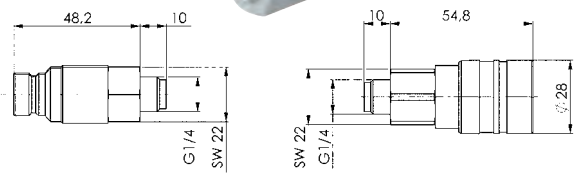
Applications
Because the clamping modules are mechanically locked after the opening pressure is released, the hose can then be uncoupled using the quick-action couplings. The advantage is that there are no annoying leads.

Note:
Flat-sealing quick-action coupling with female thread G1/4. A set screw is included for male thread G1/4.

NEW

27841 201

27841 202



Size	Type	Nominal width NW	Nominal flow l/min	AF mm	Weight g	27841 ...
K10.2/K20	Plug	6	12	22	100	201
K10.2/K20	Sleeve	6	12	22	170	202

27842 Pipe fitting

ATORN®

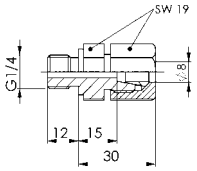
Design
- With cutting ring

Applications
For high-pressure hose, outer Ø 8 mm, inner Ø 4 mm.

Note:
Sealing to DIN 3852 type B via sealing edge and cutting ring.

NEW

27842



Size	AF mm	Weight g	27842 ...
K10.2/K20	19	55	201

27843 Air hydraulic pump

ATORN®

Design
- Compact, compressed air operated hydraulic pump for single-acting circuits
- The pump is equipped with an integrated safety valve which regulates the hydraulic output pressure
- The factory default setting for the safety valve is a max. operating pressure of 60 bar
- The expansion body in the oil tank enables the pump to be used horizontally and vertically

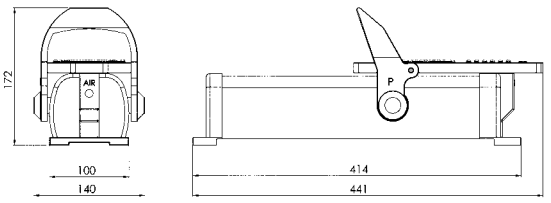
- Connecting thread, air: G1/4
- Connecting thread, oil: G1/4

Applications
The air hydraulic pump is used to open hydraulic clamping modules or hydraulic clamping stations.

Note:
When operating the pump, the use of cleaned and lubricated compressed air is recommended.

NEW

27843



Size	Air pressure min. bar	Air pressure max. bar	Usable oil volume cm^3	Delivery volume max. cm^3/min	Weight kg	27843 ...
K10.2/K20	4	6	1000	750	5.9	201

27701 Force measuring cell for machine vices

Applications
For monitoring the clamping force.

Note:
For more force measuring cells, see HHW catalogue volume 2 (Tools + Machines) art. no. 38801.

27701

For jaw width mm	Display range kN	27701 ...
100/125/160	0–60	101

27680 Claw jaw sets, SKB

ROHM

Design
Form-fit clamping due to penetration of the hardened claw tips. **Retention force 3–5 times higher** than with standard jaws. **5-sided machining** in one clamping operation, low material loss, shortened throughput times, reduced production and unit costs.

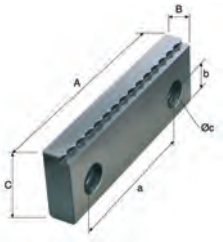
Applications
For use on vices. Easily screwed onto ROHM NC compact clamps. Simple and secure clamping of parallel blanks and sawn parts. Hydraulic or manual clamping possible.

27680 101–103
Design
With fine step for clamping depth to 2 mm.

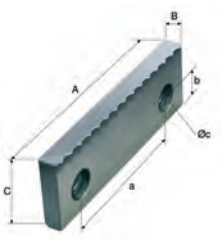
27680 201-203
Design
Without fine step for clamping depth greater than 2 mm.

Fine step	Clamping depth	A mm	B mm	C mm	a mm	b mm	Øc mm	27680 ...
x	Less than 2 mm	92	14	32	63	13.6	7 (M 6)	101
x	Less than 2 mm	125	16	40	80	15.6	9 (M 8)	102
x	Less than 2 mm	160	18	50	100	19.6	9 (M 8)	103
-	More than 2 mm	92	14	32	63	13.6	7 (M 6)	201
-	More than 2 mm	125	16	40	80	15.6	9 (M 8)	202
-	More than 2 mm	160	18	50	100	19.6	9 (M 8)	203

27680 101-103



27680 201-203



27682 Single adjustable clamps for NC clamps

ROHM

Design
Complete, for front and base mounting. **Individual.**

Applications
For art. no. 27655, 27656.

Note:
Four single adjustable clamps are required for proper clamping.

27682

Suitable for T-groove	27682 ...
12	201
14	202

Suitable for T-groove	27682 ...
16	203
18	204

27683 Double adjustable clamp for NC clamps

ROHM

Design
Complete, for supporting opposing sides during front-face paired clamping. **Individual.**

Applications
For art. no. 27655, 27656.

27683

	27683 ...
	201

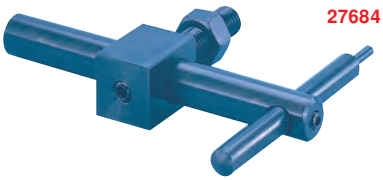
27684 Workpiece stop for NC clamps

ROHM

Design
Connecting thread M 12, universally adjustable.

Applications
For art. no. 27655, 27656 and 27710.

27684



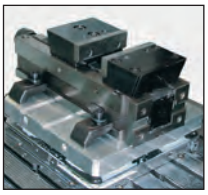
	27684 ...
	101

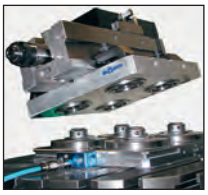
Info Power Grip modular palletising system

ROHM

Zero-point clamping system with guaranteed repeat accuracy ± 0.002 mm

Unproductive machine downtimes are reduced to a minimum. The resulting machine uptime increases productivity and profitability.





27750 Multiple clamping rails (sets)

ATORN®

Design
Multiple clamping system based on the wedge clamping device principle. Simple yet precise design. Extension of the clamps by means of a connecting system, resulting in optimum utilisation of the machine table. Excellent price/performance ratio.

Applications
Fast and precise clamp for all machine tools.

Advantage:
- All components of the system are compatible
- Can also be used on the ATORN zero-point clamping system
- Completely flexible
- Easy-to-mount stop system
- Solve all clamping tasks with one clamping system
- Replaces any vice

Note:
Very high clamping forces can be generated with the wedge clamping device. However, workpieces that only allow a low clamping force can also be clamped without any problems.
The clamping elements are mounted on the rail. Other combinations must be assembled individually. See art. no. 27751–27754.

27750 208

Clamping rail L x W x H mm	Jaws L x W x H mm	Fixed jaw (pieces)	Wedge clamping device (pieces)	27750	...
200 x 50 x 80	50 x 42 x 22	2	1		**201**
200 x 80 x 80	72 x 42 x 29	2	1		**202**
300 x 50 x 80	50 x 42 x 22	3	2		**203**
300 x 80 x 80	72 x 42 x 29	3	2		**204**
400 x 50 x 80	50 x 42 x 22	3	2		**205**
400 x 80 x 80	72 x 42 x 29	3	2		**206**
500 x 50 x 80	50 x 42 x 22	3	2		**207**
500 x 80 x 80	72 x 42 x 29	3	2		**208**

27751 Multiple clamping rails (individual)

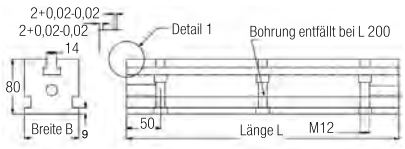
ATORN®

Design
Without jaws (see art. no. 27752) and wedge clamping device (see art. no. 27753).

Note:
For additional accessories, see art. no. 27754.

27751

Length mm	Width mm	Height mm	27751	...
200	50	80		**101**
200	80	80		**102**
300	50	80		**103**
300	80	80		**104**
400	50	80		**105**
400	80	80		**106**
500	50	80		**107**
500	80	80		**108**



27752 Fixed jaws (individual)

ATORN®

Design
Includes sliding block and screw.

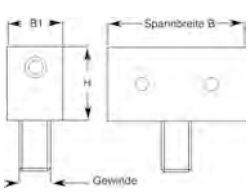
27752 101-109
Design
With smooth clamping surface.

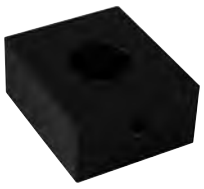
27752 201-209
Design
With serrated clamping surface.

27752 301-309
Design
With claws.

Note:
T-sliding block with M 8 thread required for art. no. 27752 101–103, 27752 201–203 and 27752 301–303.

27752 201-209





Clamping width B mm	B1 mm	H mm	Screw DIN 912	Smooth 27752	...	Serrated 27752	...	With claws 27752	...
22	22	15	M 8		**101**		**201**		**301**
32	22	15	M 8		**102**		**202**		**302**
42	22	15	M 8		**103**		**203**		**303**
30	42	22	M 12		**104**		**204**		**304**
40	42	22	M 12		**105**		**205**		**305**
50	42	22	M 12		**106**		**206**		**306**
42	42	29	M 12		**107**		**207**		**307**
57	42	29	M 12		**108**		**208**		**308**
72	42	29	M 12		**109**		**209**		**309**

27753 Wedge clamping device (individual)

ATORN®

Design
Includes sliding block and screw.

27753 101-109
Design
With smooth clamping surface (standard clamp).

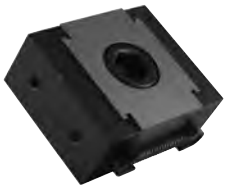
27753 201-209
Design
With serrated clamping surface (blank clamp).

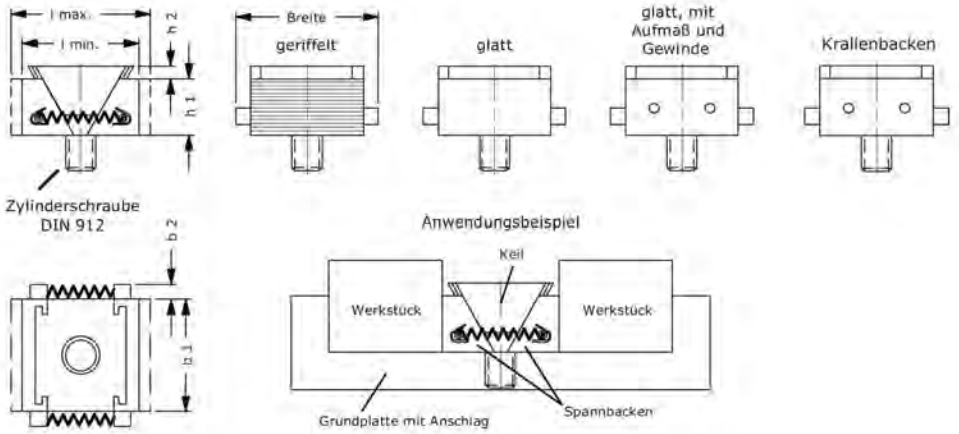
27753 301-309
With allowance.

27753 401-409
With claws.

Note:
T-sliding block with M 8 thread required for art. no. 27753 101–103, 27753 201–203, 27753 301–303 and 27753 401–403.

27753 101-109





Width mm	Clamping force kN	L min. mm	L max. mm	h1 mm	b1 mm	b2 mm	h2 mm	Screw DIN 912	Smooth 27753 ...	Serrated 27753 ...	With allowance 27753 ...	With claws 27753 ...
30	15	27	31	15	22	4	4	M 8		101	201	301	401
40	15	27	31	15	32	4	4	M 8		102	202	302	402
50	15	27	31	15	42	4	4	M 8		103	203	303	403
40	30	39	45	22	30	5	7	M 12		104	204	304	404
50	30	39	45	22	40	5	7	M 12		105	205	305	405
60	30	39	45	22	50	5	7	M 12		106	206	306	406
54	50	52	62	29	42	6	11	M 12		107	207	307	407
69	50	52	62	29	57	6	11	M 12		108	208	308	408
84	50	52	62	29	72	6	11	M 12		109	209	309	409

27754 Accessories

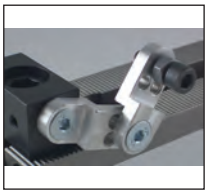
ATORN®

Applications
Accessories for ATORN multiple clamping rails, see art. no. 27750–27751.

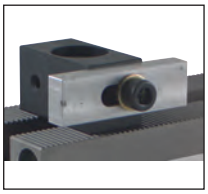
Note:
** The length of the adapter is 72 mm. The adapter is used to connect two clamping rails without spacing. Any length is deliverable on request to provide appropriate spacing between the clamping rails.*

27754 101

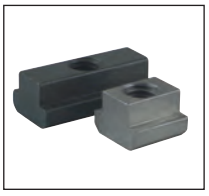
27754 102



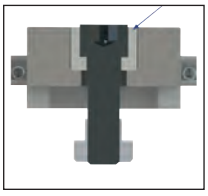
27754 103



27754 104-107

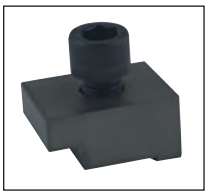


27754 108



27754 109-110

27754 111



Designation	Pieces	27754 ...
Adapter set*	1	101
Stop, adjustable	1	102
Stop, fixed	1	103
Sliding block, short, M 8	5	104
Sliding block, short, M 12	5	105
Sliding block, long, M 12	5	107
Screw bushing	5	108
Positioning sleeve, 20 x 14	1	109
Positioning sleeve, 20 x 18	1	110
Adjustable clamps	4	111

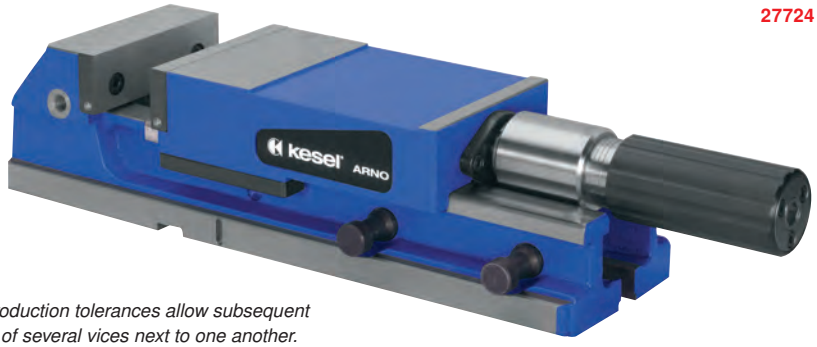
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27724
High-pressure machine vices
Design
- Basic body and upper slide made of spheroidal graphite iron GGG60
- Guideways hardened and ground
- Ground camber to compensate for tilting
- Maintenance-free and fully enclosed high-pressure spindle with integrated mechanical power amplifier
- Lower section with longitudinal and transverse grooves for exact alignment
- Quick adjustment via stud bolts

Scope of delivery:
- 4 adjustable clamps
- 1 pair of hardened clamping jaws
- 1 hand crank

Applications
For vibration-free, absolutely safe clamping with extremely high cutting and feed forces.

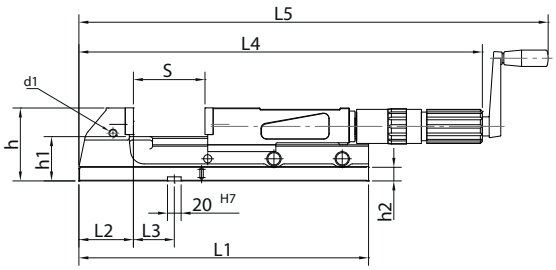
27724

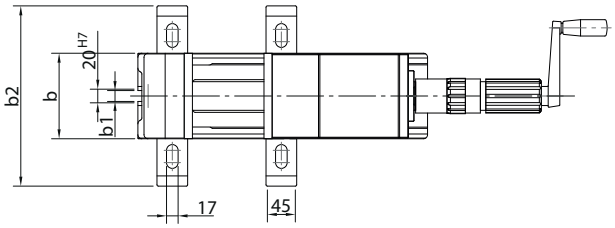


Note:
Narrow production tolerances allow subsequent assembly of several vices next to one another.

Technical data:		
Art. no.	**27724 101**	**27724 102**
Jaw width mm:	125	160
Clamping range S, step 1/2 mm:	0–105/100–205	0–155/150–305
Clamping range, extended mm*:	255	365
Clamping force, max. kN:	40	50
L1 mm:	425	570
L2 mm:	80	90
L3 mm:	60	95
L4 min./max. mm:	489/694	575/880
L5 min./max. mm:	613/818	712/1007
h mm:	107	130
h1 (+0.002) mm:	65	80
d1:	M 12	M 16

* Clamping range extended by fixing the bolt in the transverse groove of the spindle nut

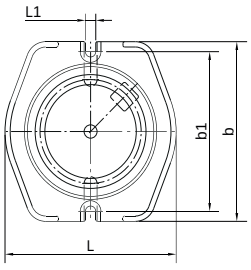




Vices		
Jaw width mm	**27724**	**...**
125		**101**
160		**102**

27725 201-202
Turntables
Design
- Turntable with 360 easily readable graduation lines (4 x 90°)
- Clamping slots for easy fastening on the machine table

27725 201-202



Turntables								
For jaw width mm	**L mm**	**L1 mm**	**Height mm**	**b mm**	**b1 mm**	**Weight kg**	**27725**	**...**
125	264	16	28	270	240	10.8		**201**
160	325	16	32	325	295	18.4		**202**

27725 301-305
Clamping jaws

27725 301-302

27725 304-305

Clamping jaws	With longitudinal groove		With step	
For jaw width mm	**27725**	**...**	**27725**	**...**
125		**301**		**304**
160		**302**		**305**

27708 High-pressure machine vices

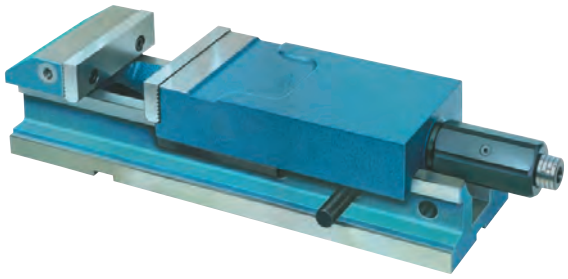
ATORN®

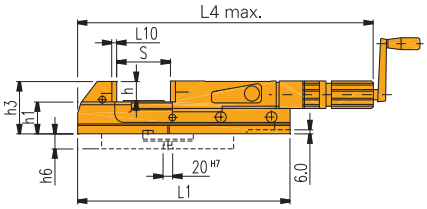
27708 101-102

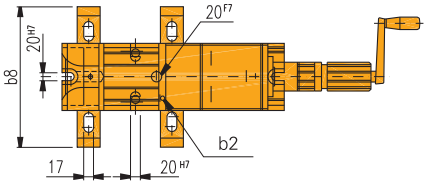
Design
- **Mechanical/hydraulic**
- Steel **body, guideways hardened** and **ground**
- Alignment on the machine table: longitudinal and transverse via groove and sliding blocks
- Rough adjustment of the clamping range via rigging pin
- **Clamping repeat accuracy** with a constant clamping force: **0.01 mm**
- **Clamping force adjustment** for fast pre-selection of the clamping force, precise repeatability
- Pre-clamping facility for elastic parts
- Package clamping
- Compensation jaws

Scope of delivery:
- 1 set of jaws (1 side smooth, 1 side serrated)
- 4 adjustable clamps
- Hand crank

27708 101-102





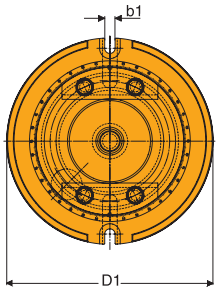


Technical data:		
Item no.	**27708 101**	**27708 102**
Jaw width b2 mm:	90	125
Clamping width S mm:	0–150	0–220
Jaw height h mm:	39.6	39.6
Jaw thickness L10 mm:	15.6	15.6
h3 x h1 x b8 mm:	99 x 53 x 230	120 x 70 x 265
L1 x l4 mm:	370 x 553	470 x 681
Clamping force kN:	25	40

	Vices	
Jaw width mm	**27708**	**...**
90		**101**
125		**102**

27708 201-202
Turntables

27708 201-202

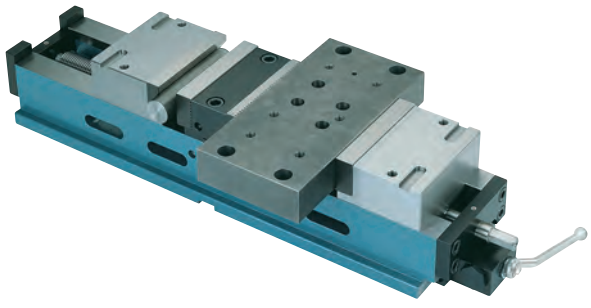


			Turntables	
For jaw width mm	**Slot width b1 mm**	**d x h6 mm**	**b5 x L8 x h6 mm**	**27708**	**...**
90	14	242 x 30	230 x 220 x 25		**201**
125	16	280 x 30	270 x 264 x 28		**202**

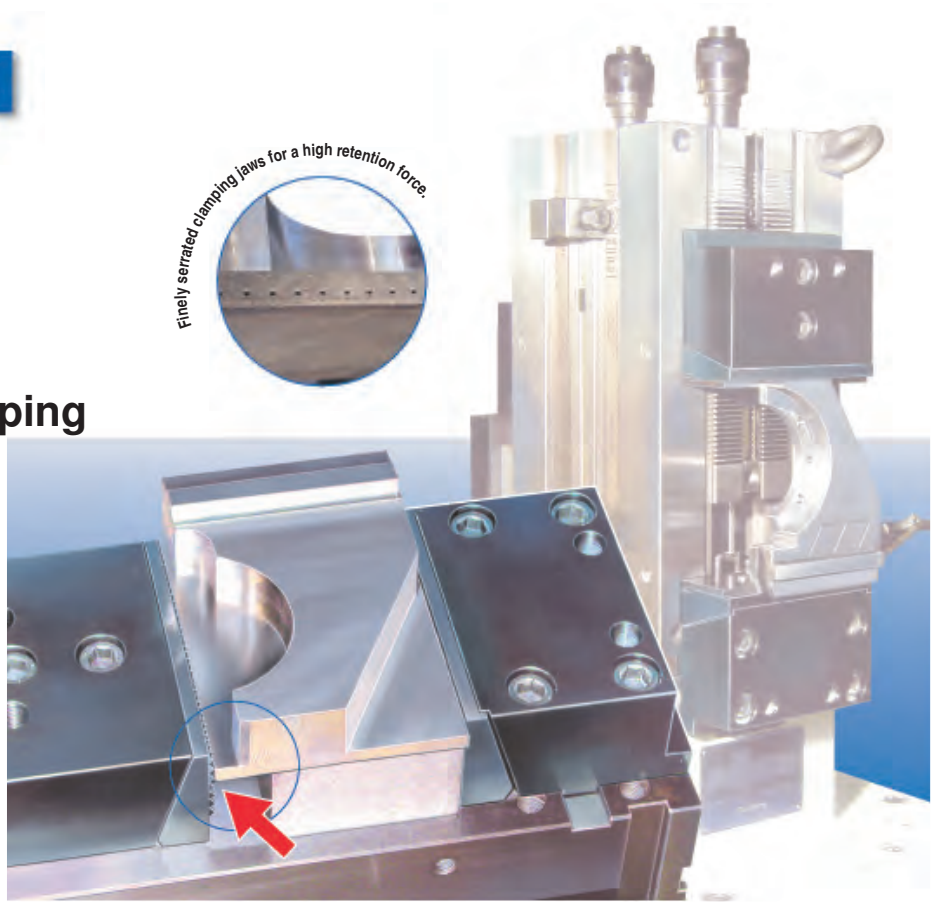
Info Single, double and multiple vices

MULTI 2000 – versatile, economical, compact –
A sophisticated enhancement to the standard double vice and single vice ranges.
- Multifunctional use possible
- Mechanical or fully hydraulic operation
- Change to other workpiece sizes in seconds
- High clamping and repeat accuracy
- Same clamping pressure at both clamping points
- Basic body made of case-hardening steel, guides inductively hardened
- Two independent spindles (only one operating side)
- Can be equipped with workpieces of different sizes
- Side slots on the underside of the vice divert chips and cooling water
- Small dimensions
- Ideal for use on vertical machining centres

Please contact us!



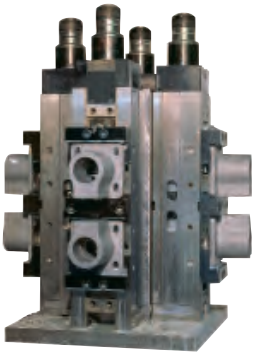
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.



Precise workpiece clamping

Flexibility with Röhm clamping jaws

Can be used on NC compact clamps and machine vices



QUATRO clamping tower
With four NC compact clamps RKD mounted in a star shape

5-sided machining:
Multiple clamping (blank) in RKD 125 with pull-down claw inserts

Clamping jaws with 4 pendulum supports, serrated, compensation +/-9°, pendular movable jaw, without pull-down for clamping forged parts

27710 - 27715 High-pressure machine vices, RB

27710
High-pressure machine vices, RB
Design
- **Mechanical/hydraulic**
- With mechanical pre-clamping via hand crank
- Clamping force can be preset via stop
- Alignment on the machine table via longitudinal grooves
- Rough adjustment of the clamping range via rigging pin
- **Clamping repeat accuracy** with a constant clamping force: **0.01 mm**

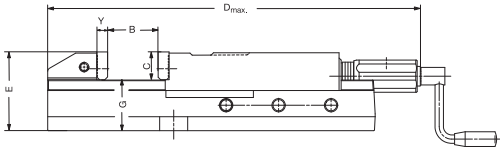
Scope of delivery:
- 1 set of standard jaws (1 side smooth, 1 side grooved)
- Hand crank

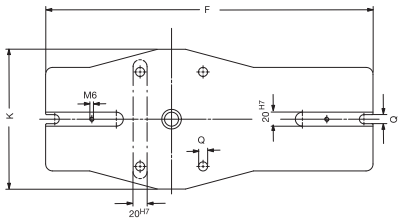
Applications
For individual and series production on drills and milling machines.
Quality
Steel body, forged (jaws made from nodular cast iron, jaw width 200 mm). Guideways hardened and ground.

Note:
For workpiece stop see art. no. 27684. Vices with jaw width 250 and 315 mm and additional angle drive deliverable on request.

27710

Technical data:				
Art. no.	**27710 101**	**27710 102**	**27710 103**	**27710 104**
Jaw width mm:	113	135	160	200
Clamping width B mm:	170	220	310	350
Jaw height C mm:	31.6	39.6	49.6	66.6
Length D mm:	583	681	817	1022
Height E mm:	97	112	133	171
Length F mm:	390	468	574	685
Height G +/- 0.02 mm:	65.5	72.5	83.5	104.5
Width K mm:	160	200	240	280
Slot width Q mm:	13	13	17	21
Jaw thickness y mm:	12	16	16	20
Clamping force, max. kN:	30	40	50	100
Weight kg:	24	39	60	112





	Vices	
Jaw width mm	**27710**	**...**
113		101
135		102
160		103
200		104

27711
Turntables
Design
- With ground support edge to support the vice
- Graduation, fastening screws and sliding blocks for fixing the vice on the turntable

27711 101-103

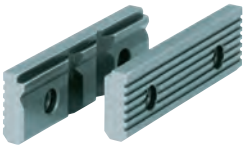
27711 104

	Turntables	
For jaw width mm	**27711**	**...**
113		101
135		102
160		103
200		104

27715
Prism and normal jaw
Design
- With workpiece support
- Soft and bronzed
- Pairs

Applications
Screw-on.

27715



	27715	
For jaw width mm		**...**
113		101
135		102
160		103

27716 Machine vice, MH-S 125

ATORN®

Design
- Basic body and jaws made of case-hardening steel, nitrided on all sides
- Repeat accuracy ≤ 0.01 mm
- Clamping force up to 40 kN
- Mechanical/hydraulic spindle made of high-strength special steel
- Transverse grooves for fast positioning on tool table
- Basic body clampable and ground on 3 sides (for bed length 470 mm, otherwise optional)
- Ground internal guideway 58 HRC
- Positioning holes Ø 12H7 on underside in 40 and 50 mm pitch for grid plate clamping
- Use of pull-down quick-change jaws and interchangeable stepped jaw grips
- Spindle nut with double trapezoidal thread for quick adjustment
- Thread for workpiece stop

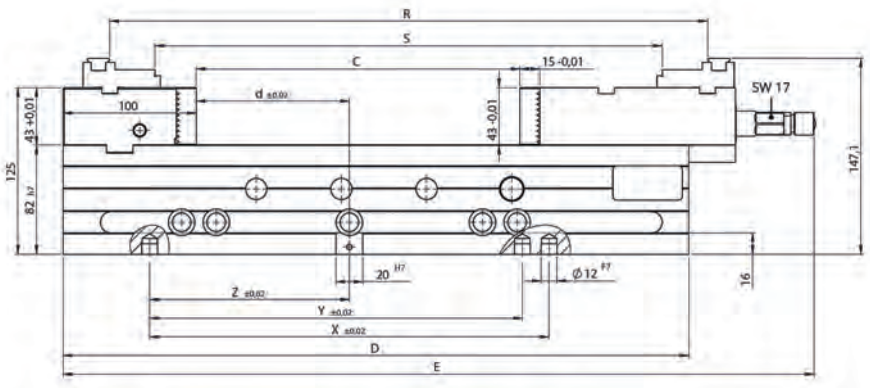
Scope of delivery:
- Delivery includes reversible screw-in jaws (serrated and smooth side)
- Hand crank
- Crank extension
- For bed length greater than 662 mm, crank extension deliverable on request

Applications
For precise clamping of workpieces.

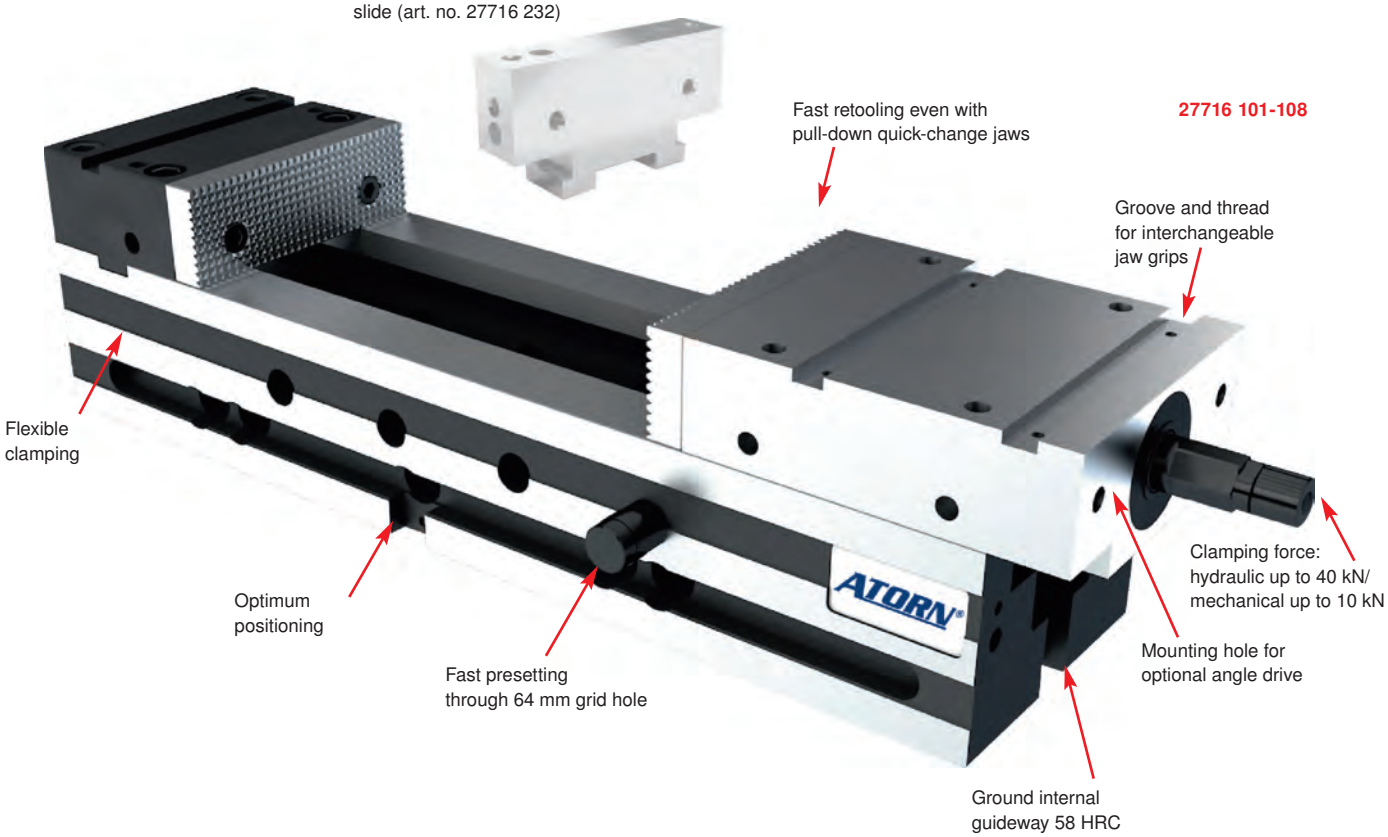
Note:
Can also be used for tower clamping.
For workpiece stops see art. no. 27410.

Bed length up to 1200 mm and hydraulically operated versions deliverable on request.

NEW



Multiple clamping optionally possible with interchangeable slide (art. no. 27716 232)



Jaw width mm	Bed length D mm	Total length E mm	Clamping width C mm	Clamping width R mm	Clamping width S mm	Bed height mm H7	Groove width mm H7	Jaw height +/- mm	27716 ...
125	470	564	0–239	131–445	63–377	82	20	43	**101**
125	534	628	0–303	131–509	63–441	82	20	43	**102**
125	598	692	0–367	131–573	63–505	82	20	43	**103**
125	662	756	0–431	131–637	63–569	82	20	43	**104**
125	726	820	0–495	131–701	63–633	82	20	43	**105**
125	790	884	0–559	131–765	63–697	82	20	43	**106**
125	854	948	0–623	131–829	63–761	82	20	43	**107**
125	918	1012	0–687	131–893	63–825	82	20	43	**108**

See next page for accessories

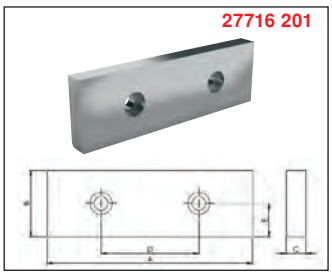
27716 Accessories for machine vice MH-S 125

Continued

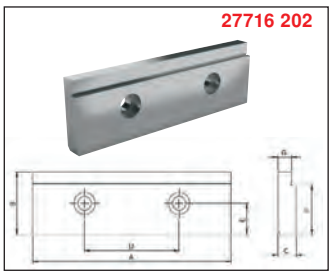
Scope of delivery:
All jaws 1 piece each.

NEW

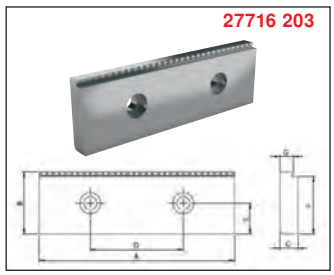
27716 201



27716 202



27716 203



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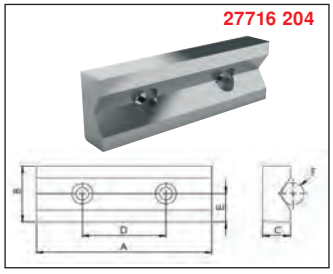

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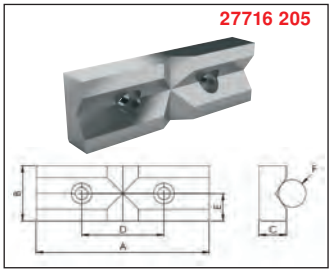

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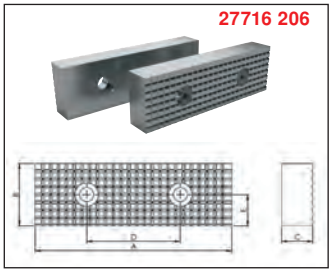

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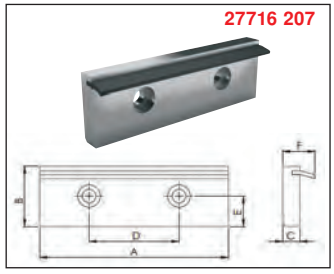

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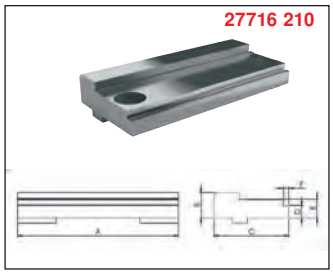

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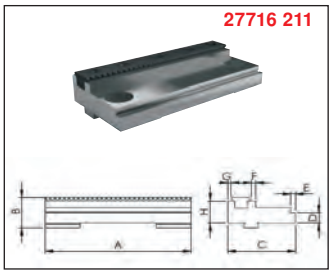

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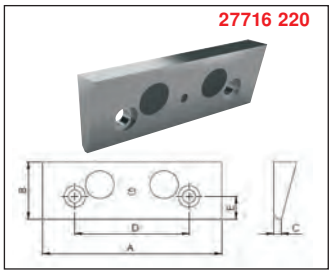

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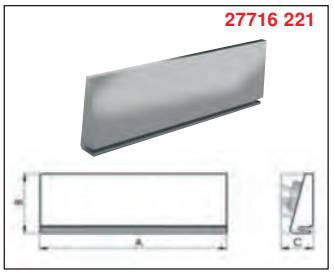

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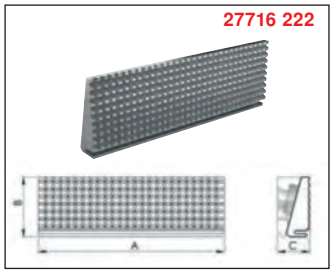

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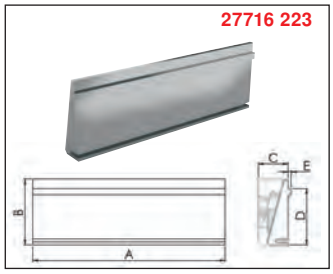

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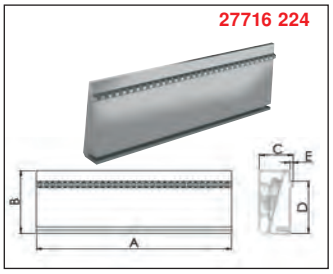

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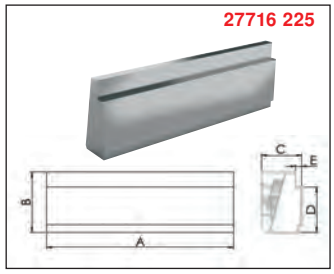

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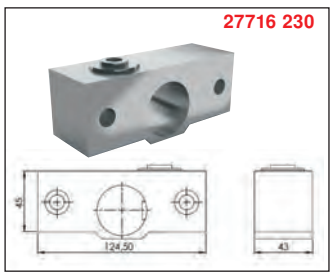

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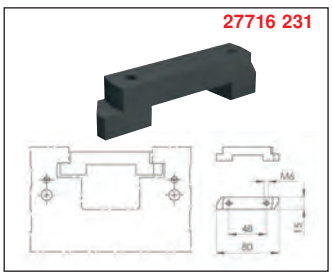

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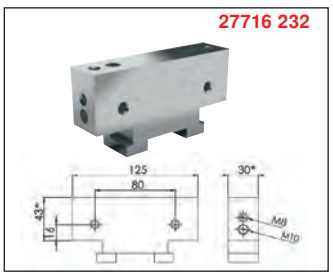

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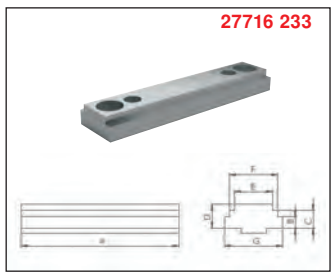

Type	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	27716 ...
Soft jaw	125	43.4	15.4	80	16	-	-	-	201
Stepped jaw	125	43	11.5	80	16	35	8.5	-	202
Grip stepped jaw	125	43	11.5	80	16	40	8.5	-	203
Prism jaw, vertical	125	43	20	80	16	8–38	-	-	204
Prism jaw, horizontal and vertical	125	43	20	80	16	8–38	-	-	205
Reversible screw-in jaw	125	43	15	80	16	-	-	-	206
Pull-down jaw with spring plate	125	43	11.5	80	16	21.5	-	-	207
Interchangeable stepped jaw	125	19	58	9	14	4	-	-	210
Interchangeable stepped jaw with grip insert	125	26.1	58	9	4	4	3	19	211
Plain jaw with two permanent magnets	125	43	6	80	16	-	-	-	220
Interchangeable jaw, smooth	125	43	21.5	-	-	-	-	-	221
Interchangeable jaw, serrated	125	43	21.5	-	-	-	-	-	222
Line interchangeable jaw	125	43	21.5	37	2	-	-	-	223
Serrated line interchangeable jaw	125	43	21.5	37	2	-	-	-	224
Stepped interchangeable jaw	125	43	26.9	33	4	-	-	-	225
Angle drive	-	-	-	-	-	-	-	-	230
Rhombic T-sliding block	-	-	-	-	-	-	-	-	231
Interchangeable slide	-	-	-	-	-	-	-	-	232
Interchangeable stepped jaw for interchangeable slide	124.9	-	-	105	-	-	-	-	233

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= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27695 Hydro machine vices, EuroLine

ROEMHELD HILMA • STARK

Design

Mechanical/hydraulic. The redesigned power transmission requires a minimum crank force. An angle drive (see art. no. 27703) facilitates operation, e.g. for longitudinal clamping on the machine table. An optional clamping force pre-selector (see art. no. 27705) enables 6-stage limitation of the maximum clamping force to partial values.

Function:

When the hand crank is turned, the mechanical/hydraulic clamping jaw is quickly brought to the workpiece via a steep threaded hollow spindle. After contact with the workpiece: Automatic disengagement of the inner pressure spindle. When the hand crank is turned further: Infinitely variable increase in the clamping force up to the maximum. To release the clamping force, the hand crank is turned in the opposite direction.

Scope of delivery:

Standard reversible jaws, smooth/serrated, hand crank and operating instructions.

Applications

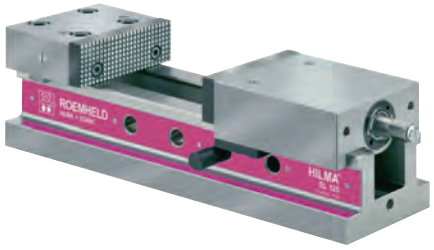
For tool and mould making, jig manufacturing and production.

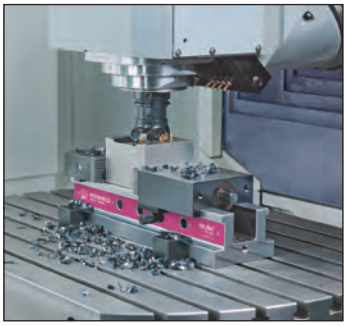
Note:

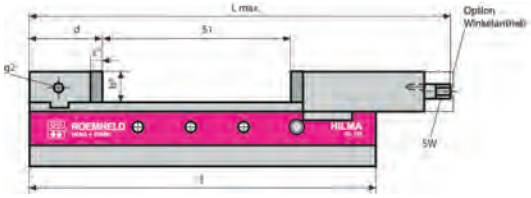
Cannot be used with turntable.

For adjustable clamp sets, see art. no. 27805.

27695 302







Type	Jaw width mm	Clamping width S1 mm	Clamping force approx. kN	Jaw height b mm	Total length L max. mm	Lower section f mm	Crank force N	Crank radius mm	Weight approx. kg	27695	...
EL 100	100	205	25	34	464	380	50	80	18.5		**301**
EL 125	125	225	40	45	526	430	75	100	31.5		**302**
EL 160	160	309	50	54	684	550	95	125	58.5		**303**
EL 160 L	160	509	50	54	884	750	95	125	75.0		**304**

27800 Hydro machine vices, type NC

ROEMHELD HILMA • STARK

Design

Mechanical/hydraulic. Manual clamping with hydraulic power transmission. Precise alignment on the machine table using longitudinal and transverse grooves. Extension of the clamping range with interchangeable stepped jaws or customer-specific special jaws via grooves and threaded holes on slides and fixed jaws. Threaded holes for holding extra-high clamping jaws as standard.

Function:

When the hand crank is turned, the mechanical/hydraulic clamping jaw is quickly brought to the workpiece via a steep threaded hollow spindle. After contact with the workpiece: Automatic disengagement of the inner pressure spindle. When the hand crank is turned further: Infinitely variable increase in the clamping force up to the maximum. To release the clamping force, the hand crank is turned in the opposite direction.

Applications

For tool and mould making, jig manufacturing and production.

Note:

1 = Interchangeable stepped jaws option

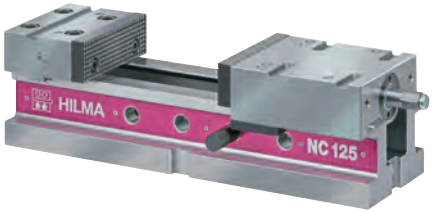
2 = Angle drive option

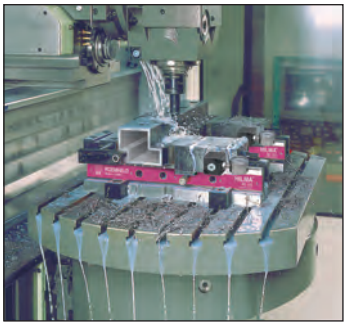
3 = Clamping force display in kN option

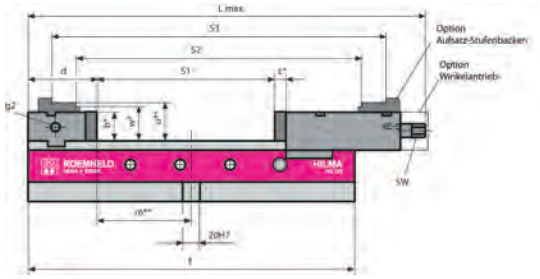
For adjustable clamp sets, see art. no. 27805.

Hydraulically operated version on request.

27800 102







Type	Jaw width mm	Clamping width S1/S2/S3 max. mm	Clamping force kN	Jaw height b mm	Total length L max. mm	Lower section f mm	Crank force N	Crank radius mm	Weight approx. kg	27800	...
NC 100	100	205/330/386	25	34	464	380	50	80	18.5		**101**
NC 125	125	225/363/431	40	45	526	430	75	100	31.5		**102**
NC 160	160	309/503/573	50	54	684	550	95	125	58.5		**103**

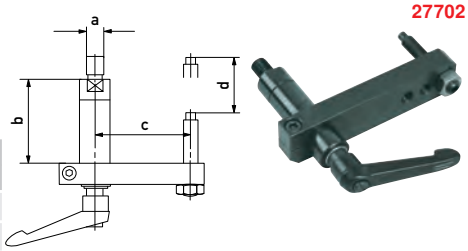
27702 Workpiece stops for type EL, NC

ROEMHELD HILMA • STARK

Applications

Coordinate workpiece stops, for self-assembly on all HILMA machine vices; can be swivelled away for 3-sided machining.

27702



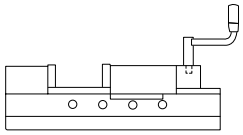
Type	For jaw width mm	a	b mm	c mm	d mm	27702	...
9.3291.0201	100/125	M 12	61	95	46		**101**
9.3291.0401	160	M 20	81	124	66		**102**

27703 Angle drives for type EL, NC-M

ROEMHELD HILMA • STARK

Design
Fast assembly with just 2 screws (overall length L max. of the machine vice does not change).
Supplied without hand crank.

Applications
Important accessory for longitudinal clamping on the machine table or when normal crank operation is difficult.



Type	For jaw width mm	b mm	27703	...
9.3294.0605	125	43		102
9.3294.0705	160	46		103

27705 Clamping force pre-selector, 6-stage

ROEMHELD HILMA • STARK

Design
The clamping force pre-selector limits the travel of the pressure spindle and thus enables gradual adjustment of the clamping force. The maximum clamping force is reached in stage 6.
Safety instructions:
The set clamping force must be high enough to ensure that the machining forces cannot move the workpiece.

Scope of delivery:
6-stage clamping force pre-selector, including fastening screw and two shims for tolerance compensation.
Applications
The 6-stage clamping force pre-selector is used to clamp thin-walled parts, sensitive materials and workpieces for fine machining with an adapted clamping force. For mechanical/hydraulic machine vices, type EL, NC-M.

27705

Type	For jaw width mm	Thread of pressure spindle	Spacing X mm	27705	...
9.3762.0100	100	M 6 x 12	0.7–1.0		101
9.3762.0125	125	M 8 x 14	1.0–1.5		102
9.3762.0160	160	M 8 x 14	1.0–1.5		103

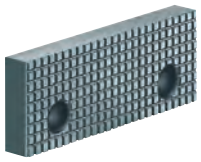
27729 Standard clamping jaws

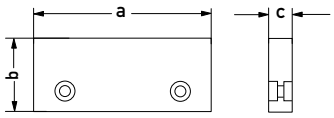
ROEMHELD HILMA • STARK

Design
Can be used on both sides
1. Serrated side.
2. Smooth side.

Applications
For hydro machine vices, type EL, NC.

27729





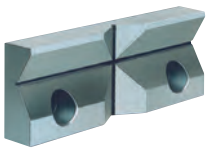
Type	a mm	b mm	c mm	Pieces 27729	...
5.2058.1003	100	34	13		101
5.2058.1004	125	45	15		102
5.2058.1005	160	54	18		103

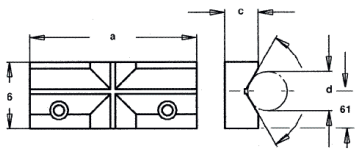
27734 Vee block jaw

ROEMHELD HILMA • STARK

Applications
For clamping round workpieces horizontally and vertically.
For hydro machine vices, type EL, NC.

27734





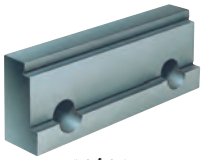
Type	a mm	b mm	b1 mm	c mm	d mm	Pieces 27734	...
5.3030.0002	100	34	19	17	8–35		101
5.3030.0003	125	45	27	19	10–50		102
5.3030.0004	160	54	32	21	12–60		103

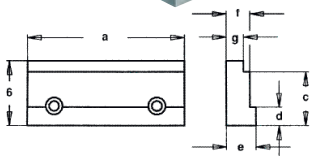
27738 Precision stepped jaws

ROEMHELD HILMA • STARK

Applications
For use in pairs. For clamping rectangular workpieces without parallel pieces. For producing bores close to the edge. For hydro machine vices, type EL, NC.

27738





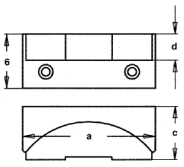
Type	a mm	b mm	c mm	d mm	e mm	f mm	g mm	Pieces 27738	...
5.2082.0001	100	34	29	10	19	15	11		201
5.2082.0002	125	45	39	13	25	20	16		202
5.2082.0003	160	54	45	15	25	20	16		203

27739 Pendulum jaws

ROEMHELD HILMA • STARK

Applications
For clamping workpieces with non-parallel clamping surfaces or 2 workpieces with different tolerances.
For hydro machine vices, type EL, NC.

27739



Type	a mm	b mm	c mm	d mm	Pieces 27739	...
8.3711.0208	100	34	35	16		101
8.3711.0308	125	45	50	22		102
8.3711.0408	160	54	55	26		103

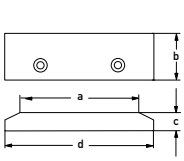
27741 Clamping jaws, extra-wide

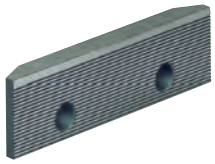
ROEMHELD HILMA • STARK

Applications
For safe clamping of workpieces that exceed the normal jaw widths.

For use in pairs.
For hydro machine vices, type EL, NC.

27741





Type	a mm	b mm	c mm	d mm	Pieces 27741	...
5.2058.1025	100	34	13	125		201
5.2058.1026	125	45	15	160		202
5.2058.1027	160	54	18	200		203

27803 - 27804 Interchangeable stepped jaws

ROEMHELD HILMA • STARK

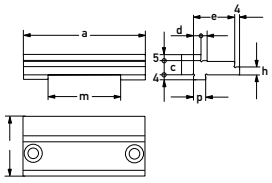
Design
For achieving very large clamping widths. Includes fastening screws.
Applications
For machine vices art. no. 27800.

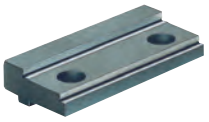
27803
For fixed jaws.

27804
For slides.

Note:
Recess dimension m for art. no. 27804 only.

27803





Type	a mm	c mm	d mm	e mm	h mm	m mm	p mm	27803 ...	27804 ...
9.3284.0201	100	11.5	6	34	6.5	60	10h6	101	
9.3284.0301	125	14.0	6	40	9.0	58	12h6	102	
9.3284.0401	160	17.0	8	43	12.0	64	18h6	103	
9.3284.1201	100	11.5	6	34	6.5	60	10h6		201
9.3284.1301	125	14.0	6	40	9.0	58	12h6		202
9.3284.1401	160	17.0	8	43	12.0	64	18h6		203

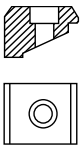
27805 Adjustable clamp sets for type EL/NC/DS

ROEMHELD HILMA • STARK

Design
4 pieces, with screws.

Applications
For machine vices art. no. 27695, 27800.

27805



Type	For type	Clamping edge mm	Groove mm	Cheese head	27805	...
9.3777.2011	EL/NC 100, DS 100	24	14	M 12		101
9.3777.3011	EL/NC 125/160, DS 125	27	14	M 12		102
9.3777.3021	EL/NC 125/160, DS 125	27	18	M 16		103

Info Double clamping system, DS

The ideal component for efficient multiple clamping. One-sided spindle action and 3rd manual function enables successive loading and unloading of the clamping points with workpieces of the same size or different sizes. The spindle chamber is completely enclosed, providing optimum protection against chips and coolant.
A zero-backlash linear guide ensures maximum precision. Pre-selectable clamping force via torque wrench.

Please enquire as necessary.

27895 Clamping jaws with positioning pins, pneumatic operation

ATORN®

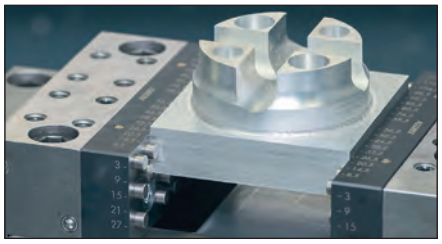
Design
- Fast and precise clamping of a wide variety of workpieces
- Changeover in seconds for different machining operations
- Loose surfaces become superfluous, as does time-consuming cleaning
- Stable and robust construction, also suitable for high clamping forces
- Compressed air supply via valves on both front ends
- Enclosed on all sides when installed, thus low maintenance
- Recommended air pressure: 5.5 bar
- Contents: 1 piece

Applications
Clamping jaw system with positioning pins eliminates the need for complex and time-consuming clamping devices; practical, fast and uncomplicated position fixing of workpieces in seconds.

NEW

Quality
High-quality tool steel, hardened, ground and treated with a special oxidation process.

Advantage: Actuate once with the blow-out gun and all pins are driven out



27895 201

27895 202

27895 203

27895 204

Jaw width mm	For vice brand	For vice type	Pitches of mounting hole (w x h)	27895 ...
125	Hilma:	NC 125, NC 125 H, EL 125, KNC 125	2 x M 8	**201**
125	ATORN:	MM-G 125		**202**
	Gressel:	Gripos GPS 125, Gripos GPS 125-VS, Gripos2,		
		Grepos-5X, Grepos-5X-S, Grefors, S2, Duogrip, C2, Ecopos	2 x M 8/1 x M 10	
	Kesel:	CNC 125, Bull pneumatic 125, Bull 125 mechanical, ARNO 125		
	Röhm:	RKE 125, RKE-L 125, RKE-U 125, RKG-L 125, RKE-LV 125		
160	Hilma:	NC 160, NC 160 H, EL 160, KNC 160	2 x M10	**203**
160	ATORN:	MM-G 160		**204**
	Gressel:	Gripos GPS 160, Gripos GPS 160-VS, Gripos2,		
		Grepos-5X, Grefors, S2, Duogrip, C2, Ecopos	3 x M 10	
	Kesel:	CNC 160, Bull pneumatic 160, Bull 160 mechanical, ARNO 160		
	Röhm:	RKE 160, RKE-L 160, RKE-U 160, RKG-L 160, RKE-LV 160		

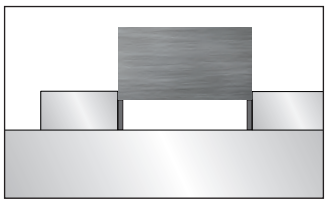
= The specified prices are unit prices. Only sold in the specified packing units. Always specify number of units in order information.

27890 Magnetic parallel rest sets

ATORN®

Design
- Made from hardened, bronzed and distortion-free tool steel
- High retention force of the magnets

Advantage:
Strip width 2.5 mm, enabling machining close to the edge.



27890

Height tolerance +/- mm	Length mm	Width mm	Contents, pairs	Contents, height mm	27890	...
0.01	100	2.5	5	20/27/29/31/32		101
0.01	125	2.5	5	15/30/35/37/39		102
0.01	160	2.5	5	22/30/37/42/47		103

36600 Precision parallel rest sets

AMF

Design
- Pairs
- Plane parallel, finely ground
- Size specifications on the face
- Sets cover a wide range with 1 mm increment
- Case-hardened.
- **Nominal dimension tolerance +/- 0.01 mm**
- Remaining dimensions in accordance with **DIN ISO 2768 m**
- In wooden holder

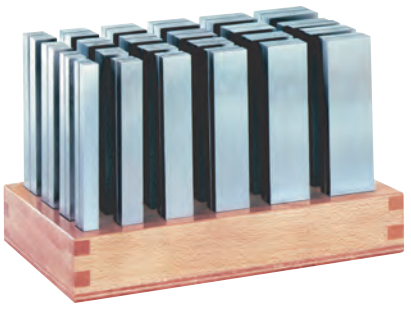
Applications
For clamping and positioning a wide range of workpieces, e.g. when grinding, milling, eroding, measuring and marking off.
In connection with corresponding clamping tools such as the precision grinding and eroding vice, ideal for exact-angle or exact-parallel processing of a wide range of workpieces.

Note:
Designs of special dimensions, in high precision or as individual pairs available on request.

36600 101
Design
Length 100 mm.
Box contents one pair each:
2 x 5 / 2 x 10 / 2 x 15 / 2 x 20 / 3 x 6 / 3 x 11 / 3 x 16 / 3 x 21 / 4 x 7 / 4 x 12 / 4 x 17 / 4 x 22 / 5 x 8 / 5 x 13 / 5 x 18 / 5 x 23 / 6 x 9 / 6 x 14 / 6 x 19 / 6 x 24 mm.

36600 103
Design
Length 125 mm.
Box contents one pair each:
8 x 11 / 8 x 16 / 8 x 21 / 8 x 26 / 8 x 31 / 8 x 36 / 10 x 13 / 10 x 18 / 10 x 23 / 10 x 28 / 10 x 33 / 10 x 38 / 12 x 15 / 12 x 20 / 12 x 25 / 12 x 30 / 12 x 35 / 12 x 40 / 14 x 17 / 14 x 22 / 14 x 27 / 14 x 32 / 14 x 37 / 14 x 42 mm.

36600 102
Design
Length 150 mm.
Box contents one pair each:
8 x 11 / 8 x 16 / 8 x 21 / 8 x 26 / 8 x 31 / 8 x 36 / 10 x 13 / 10 x 18 / 10 x 23 / 10 x 28 / 10 x 33 / 10 x 38 / 12 x 15 / 12 x 20 / 12 x 25 / 12 x 30 / 12 x 35 / 12 x 40 / 14 x 17 / 14 x 22 / 14 x 27 / 14 x 32 / 14 x 37 / 14 x 42 mm.


36600

Pair tolerance in height mm	Length mm	Contents pairs	36600	...
IT 5	100	20		101
IT 5	125	24		103
IT 5	150	24		102

36602 Parallel rest sets

Design
- Case-hardened and ground
- Contact surfaces finely ground
- **Nominal dimension tolerance** up to height 30 mm = **+/- 0.2 mm,** from height 35 mm = **+/- 0.3 mm.**
- Nominal dimensions in accordance with **ISO 2768 m**
- In wooden case with removable hinged lid

Contents:
1 pair each (= 14 pairs).
Height of the measuring surfaces mm:
14/16/18/20/22/ 24/26/28/30/32/35/40/45/50.

36602

Pair tolerance, height mm	Length mm	Width mm	Contents, pairs	36602	...
0.01	150	10	14		101

36615 Parallel rest sets

AMF

Design
- Case-hardened and ground
- Contact surfaces finely ground
- **Nominal dimension tolerance, height +/- 0.004 mm**
- Nominal length and width in accordance with **ISO 2768 m**
- In wooden case with removable hinged lid

Contents:
1 pair each (= 14 pairs).
Height of the measuring surfaces mm:
14/16/18/20/22/24/26/28/30/32/35/40/45/50.

Applications
As spacers for workpieces in a wide variety of machining operations.
The constant width means that the parallel rests can be built up in height.
The removable hinged lid allows the set to be stored open in the tool cabinet.

36615

Pair tolerance, height mm	Length mm	Width mm	Contents, pairs	36615	...
0.004	150	10	14		101

28007 Permanent magnetic clamping plates

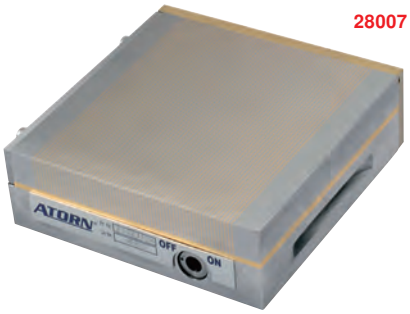
ATORN®

Design
- Double neodymium magnet system for exceptionally high retention forces (up to 120 N/cm²)
- Very robust structure with rugged basic body and solid pole plate
- Sealed against dirt and coolant
- Extremely close pole pitch (ST 1.4/NF 0.5)

Scope of delivery:
With 2 limit stop strips,
2 adjustable clamps,
indexing wrench,
operating instructions.

Applications
For precise grinding and erosion work. Universal magnet for small, thin and large workpieces.

28007



Length mm	Width mm	Height mm	Weight kg	Thickness of pole plate mm	Of which usable mm	Pole pitch: steel/non-ferrous metals mm	28007	...
175	100	49	7	20	5	1.4/0.5		202
200	100	49	8	20	5	1.4/0.5		203
250	150	51	15	20	5	1.4/0.5		204
350	150	51	22	20	5	1.4/0.5		205
400	200	51	35	20	5	1.4/0.5		206

28009 Sine bars with permanent magnetic clamping plate

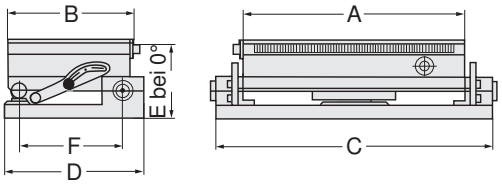
ATORN®

Design
- Angle adjustment using gauge blocks
- Base plate hardened and precision-ground, HRC 60
- Plane parallelism +/- 0.005/100 mm
- Pivots through 0-45° around longitudinal axis
- Sealed against dirt and coolant
- Repeat accuracy +/- 5 sec.
- Adhesive force: max. 80 N/cm²
- Magnetic field height 6 mm

Scope of delivery:
With 2 limit stop strips,
spanner,
operating instructions,
sine table.

Applications
For precise angle and erosion work.
For small and large workpieces.

28009



A mm	B mm	C mm	D mm	E mm	Roller distance F mm	Pole pitch Steel/Non-ferrous metals mm	Weight kg	28009	...
140	70	170	100	68	55	1.4/0.5	5.5		101
175	100	215	115	77	85	1.4/0.5	10.0		102
250	150	290	165	79	135	1.4/0.5	20.5		103
350	150	390	165	87	135	1.4/0.5	35.0		104
450	150	490	165	87	135	1.4/0.5	44.0		105

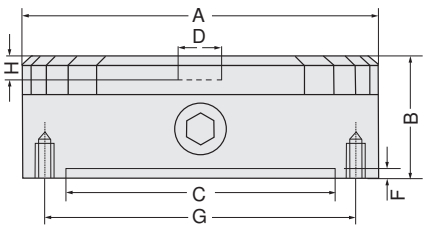
28010 Round permanent magnetic chucks

Design
- **Extremely high-strength magnet system with fine parallel pole pitch**
- On/off switching via hand lever
- Machined centring grooves for easier alignment
- Infinitely **adjustable adhesive force**
- Adhesive force: max. 80 N/cm²

Applications
For grinding and eroding, even of small workpieces.

Note:
Centring holes possible if required. Holes can also be drilled into the top plate (steel 15 mm/non-ferrous metals 6 mm) without impairing the adhesive force.

28010



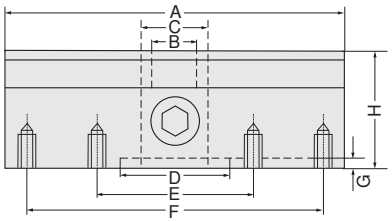
A mm	B mm	C mm	D mm	F mm	G mm	H mm	Threaded hole	Pole pitch, steel/non-ferrous metals mm	Weight kg	28010	...
130	62	90	15	2.5	120	7	4 x M 6	4/1.5 + 2/1.5	5		102
160	75	125	20	3.0	142	6	4 x M 8	6/1.5 + 2/1.5	8		103
200	80	150	20	4.5	182	6	4 x M 8	6/1.5 + 2/1.5	13		104
250	80	200	20	4.5	232	6	4 x M 8	6/1.5 + 2/1.5	20		105

28012 Round permanent magnetic chucks

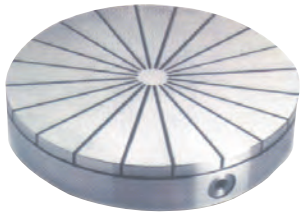
Design
- **High-strength neodymium magnet system with radial parallel pole pitch**
- On/off switching via hand lever
- Machined centring grooves for easier alignment of workpieces
- Adhesive force: max. 100 N/cm²

Applications
For grinding and turning.

Note:
The chucks can be provided with a through-bore on request.



28012



A mm	H mm	B mm	C (max.) mm	D mm	G mm	F mm	Threaded holes	Number of poles	Weight kg	Switching points	28012 ...
150	60	15	20	90	4	115	M 8 x 15 (4)	10	8	1	**101**
200	60	20	25	160	4	180	M 8 x 15 (4)	12	14	1	**102**
250	60	20	25	200	4	235	M 10 x 15 (4)	12	23	1	**103**
300	80	35	40	250	4	270	M 12 x 20 (7)	14	43	1	**104**

28042 Laminated blocks

Design
- **Silver-soldered steel/brass connection**
- **Flat**
- With transverse pole pitch (piece)
- Laminations made from 3 mm steel/1 mm brass
- Magnetic

Applications
For use with magnetic clamping plates only.

Note:
The blocks can be machined on all sides in order to customise them to the workpiece.

28042

Length x width x height mm	28042 ...
150 x 75 x 25	**202**
250 x 75 x 25	**203**

28050 Manual demagnetising device

Design
- With signal lamp
- On/off switch and connecting cable with plug
- Voltage: AC 230 V, 50 Hz

Applications
Easy demagnetisation of workpieces with residual magnetism.

Note:
Max. switch-on time 10 minutes

28050

Length x width x height mm	Power VA	28050 ...
120 x 105 x 180	1330	**101**

Info Electro permanent magnetic clamping plates

wagner magnete

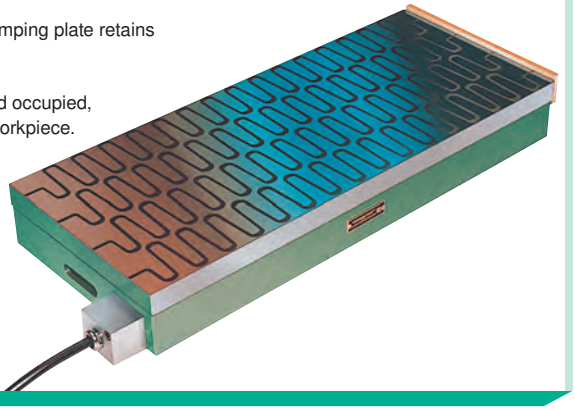
A new generation of clamping plates that offer striking advantages over the familiar electromagnetic or permanent magnetic clamping plates:

Greater accuracy	• No heat generation
Optimum safety	• By remote control of the magnet
Extremely economical	• Only requires a short current pulse to initiate the clamping process; the clamping operation then runs without a current supply until it is switched off
Direct connection to machines	• Via pulse control with NC control
High operational reliability	• In the event of a power failure, the actuated clamping plate retains its full adhesive force

The adhesive force depends on the type of pole pitch and the percentage of the board occupied, as well as the contact surface, thickness, surface quality and material quality of the workpiece.

A complete clamping unit consists of:
- Electro permanent magnetic plate
- Pulse control
- Control unit

Please contact us for information!



29001 Vertical collet vice

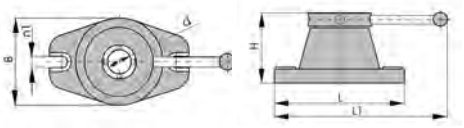
HOFMANN

Design
- Basic body lacquered RAL 7035, light grey, union nut and clamping lever bronzed
- Collet chucks are not included in the scope of delivery

Applications
For quick fixing of workpieces with push-type collet chucks. Suitable for drilling and milling machines and thread-cutting equipment, and for use in measuring devices.

Note:
For collet chucks with round bore, see art. no. 21568 and 21570.
Hex and square collet chucks on request.

29001



Clamping range d mm	W mm	H mm	L x L1 mm	n1 mm	For collet type	29001 ...
3–42	135	100	210 x 347	14	173 E	**103**

29003 - 29004 Horizontal and vertical index units, type HRTE 165/HRTU 165

Design
- With three-jaw chuck
- Rotary indexing table made of high-quality Meehanite cast iron, reliable and precise with precision tapered roller bearings
- Large spindle opening for clamping longer workpieces
- Direct indexing by means of a locking plate for higher speeds of mass-produced parts
- 24 positions (15° graduation)
- 7 locking discs for 2, 3, 4, 6, 8, 12 and 24-x graduations
- Includes clamping disc with 3 grooves

29003 101
HRTE 165
Design
Indexing in degrees using 360° scale.

29004 101
HRTU 165
Design
Indexing in degrees using 360° scale with crank and vernier.

29003

Art. no.	29003 101	29004 101
Type	**HRTE 165**	**HRTU 165**
Three-jaw chuck Ø:	165 mm	165 mm
Overall height:	200 mm	221 mm
Length x width:	218 x 260 mm	235 x 250 mm
Centre height:	130 mm	130 mm
Clamping disc Ø:	203 mm	203 mm
Clamp Ø of chucks, max.:	210 mm	210 mm
Aperture:	36 mm	36 mm
Weight:	32.5 kg	48.0 kg

29004

Type	29003 ...	29004 ...
HRTE 165	**101**	
HRTU 165		**101**

29005 Height-adjustable tailstocks, type HRST

29005 101
HRST 1
Applications
For **rotary indexing table HRT 150**
see art. no. 29210 102.

29005 102
HRST 2
Applications
For **rotary indexing table HRT 200**
see art. no. 29210 103
and **rotary indexing unit HRTE 165**
see art. no. 29003 101
and **rotary indexing unit HRTU 165**
see art. no. 29004 101.

29005

Type	Centre height mm	29005 ...
HRST 1	97–101	**101**
HRST 2	103–166	**102**

29210 - 29211 Horizontal/vertical rotary indexing tables, type HRT

29210
Design
- Rotary indexing table made of high-quality Meehanite cast iron, reliable and precise with precision bearings
- Large spindle opening for clamping longer workpieces
- Quick indexing by means of a locking plate for higher speeds of mass-produced parts
- Worm gear hardened and ground
- Transmission ratio 90:1
- Workbench is scaled to 360°
- 1 complete turn of the hand wheel = 4° of rotation
- Option of indexing via scaled hand wheel with vernier scale

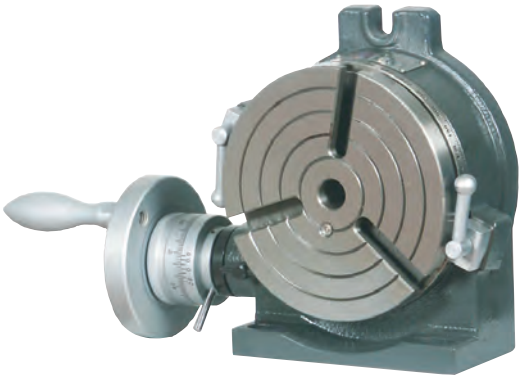
29211 101
Chuck flange
Applications
Suitable for **rotary indexing table HRT 150**
see art. no. 29210 102.

29211 102
Chuck flange
Applications
Suitable for **rotary indexing table HRT 200**
see art. no. 29210 103.

29211 103
Three-jaw chuck
Design
130 mm diameter.
Applications
Suitable for **rotary indexing table HRT 150**
see art. no. 29210 102.

29211 104
Three-jaw chuck
Design
165 mm diameter.
Applications
Suitable for **rotary indexing table HRT 200**
see art. no. 29210 103.

29210 101



Art. no.	29210 101	29210 102	29210 103
Type	HRT 100	HRT 150	HRT 200
Self-centring taper:	MK 2	MK 2	MK 3
Plate size:	Ø 110 mm	Ø 150 mm	Ø 200 mm
Overall height:	72 mm	79 mm	104 mm
Length x width:	138 x 118 mm	204 x 156 mm	265 x 199 mm
Centre height:	80 mm	102 mm	133 mm
Width/number of grooves:	11 mm/3	11 mm/3	14 mm/3
Weight:	9 kg	12 kg	30 kg

Type	29210 ...	29211 ...
HRT 100	101	
HRT 150	102	
HRT 200	103	
Chuck flange for HRT 150		101
Chuck flange for HRT 200		102
Three-jaw chuck for HRT 150		103
Three-jaw chuck for HRT 200		104

29212 Indirect dividing units, type HIT

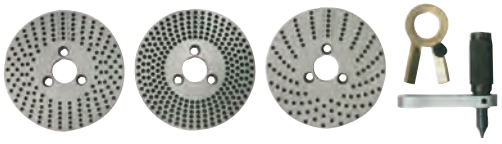
29212 101
HIT 150
Design
- Includes 3 dividing discs, sector arm, angle cutter with spring plate

Applications
For **rotary indexing table HRT 150**
see art. no. 29210 102
and **rotary indexing unit HRTU 165**
see art. no. 29004 101.

29212 102
HIT 200
Design
- Includes 2 dividing discs, sector arm, angle cutter with spring plate

Applications
For **rotary indexing table HRT 200**
see art. no. 29210 103.

29212 101



Type	29212 ...
HIT 150	101
HIT 200	102

29220 Small rotary table, type RH

HOFMANN

Design
- Stable and precise with low height and low weight
- With measuring drum for angle adjustment in degrees, minutes and seconds
- Adjustable worm gear eccentrically mounted in the housing

Applications
Specially designed for engraving and light milling machines.

29220

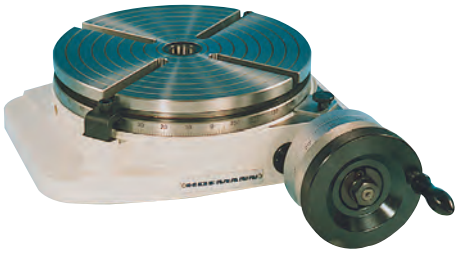


Table Ø mm	Overall height mm	Gear ratio	Readability/ adjustment	Indexing capability	Vernier accuracy	Weight scale	approx. kg	29220	...
200	75	1:90	6 sec.	+/- 30 sec.	x	19			**103**

29231 Rotary tables, RI

HOFMANN

29231

Design
- With indirect dividing unit and coolant drain gutter
- Indexing accuracy +/- 15 sec.
- Manually operated rotary tables for horizontal use on machine tools

Type	Table Ø mm	29231	...
RI-250	250		**101**
RI-320	320		**102**
RI-400	400		**103**

29236 Swivelling precision rotary tables, HPRS

HOFMANN

29236

Design
- With indirect dividing unit
- Indexing accuracy of +/- 10 sec. in the rotating axis and +/- 60 sec. in the swivel axis
- With graduating drum/vernier scale for use on machine tools and for measuring and testing facilities
- Swivel range from 0° to 90°

Type	Table Ø mm	29236	...
HPRS-320	320		**102**

Info — NC precision dividing units, type RW/NC · RS/NC · RSM

HOFMANN

NC divider as a modular system for integrating as a fourth axis or for retrofitting with its own control system and hydraulic unit.

Sizes
- Centre height 75, 100, 125, 160, 220, 300 and 450 mm
- Faceplate diameter 80, 100, 150, 200, 250, 320, 400, 500, 630, 800 and 1000 mm.
- For use on machining centres, milling machines, measuring equipment, grinding machines, engraving machines and laser machines, plus special versions for use on eroding machines.

Designs

Type RW/NC	Basic version as single-axis NC dividing unit
Type RW/NC	2- to 4-spindle, single-axis NC dividing unit
Type RS/NC	Swivelling NC dividing unit with 2 NC axes also with 2–4 rotary axes
Type RSM	Swivelling NC dividing unit with manual swivel axis

Accessories
- Faceplate
- Three- and four-jaw chucks, also power-operated
- Collet chuck
- Tailstocks, manual or hydraulic

Technical features
- Use with horizontal or vertical rotating axis
- Hydraulic part spindle clamping for high machining forces
- Use of selected precision bearings
- Adjustable worm drive
- Splash-proof
- Spindle design with
  SK 30, 40, 50,
  HSK 32, 40, 50, 63, 80 and 100,
  MK 2, 3, 4, 5, 6
- Direct measurement systems possible
- Servomotor available on request as a fourth axis
- Positioning controller and separate hydraulic unit available for retrofitting

Please contact us!

29517 Coordinate tables

Design
- With dovetail guide
- Made from special cast iron, ground clamping surface and guides
- Flatness accuracy 0.03 mm
- Dovetail guides adjustable via guide strips
- Twisted trapezoidal threaded spindles with axial bearings
- Thimbles with zero point adjustment; directly readable
- Scale graduation 0.05 mm

Note:
Size 2–4 (art. no. 29517 102–104) with water channel and clamping levers on both axes to enable clamping in any position.

29517 101

29517 104

Size	Table area L x W mm	Base area L x W mm	Total height mm	Longitudinal movement mm	Transverse movement mm	T-slot width mm	T-slot spacing mm	Load capacity kg	Weight approx. kg	29517	...
1	300 x 160	160 x 160	78	180	100	10	50	75	16		101
2	450 x 240	259 x 200	126	275	155	14	60	280	52		102
3	580 x 240	259 x 200	126	375	155	14	60	280	60		103
4	650 x 270	365 x 200	140	450	250	14	70	300	90		104

Info

TANi-CNC - 4th and 5th positioning axis for upgrading and retrofitting

walter PRÄZISION **driven by perfection**

TANi-CNC NEG with positioning control as an extension of your machine.
Can be controlled via the M function or limit switch
- Driven via high-precision worm gear
- Resolution 0.001°
- Rotation speeds up to 66 rpm
- Indexing accuracy +/- 15 arc seconds
- Pneumatic or hydraulic clamping option with control

Used in combination with a complete WALTER 1-axis CNC control, our dividers are the ideal extension for
- Conventional milling machines
- Conventional drills
- Tool milling machines
- Grinding machines
- Eroding machines
- Machining centres

Additional axes or multi-spindle units enable corresponding multi-sided machining right up to genuine 5-sided machining without re-clamping.

TANi - multi-spindle for efficient large-scale series production

TANiH2-S - 4th and 5th axis of a machine tool

- Large selection of sizes
- Stable clamping with exceptional holding strength
- Can be expanded with additional modules
- Many accessory variants available

Please contact us and we will prepare a quotation tailored to your requirements!

Wide range of accessories available!

Info

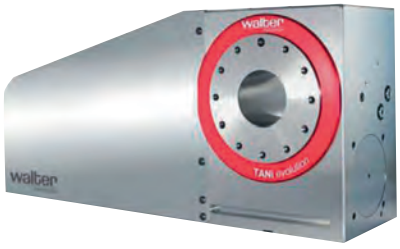
TANi evolution

walter PRÄZISION **driven by perfection**

TANi evolution

NC dividers and NC rotary tables from Walter are renowned worldwide for their excellent quality, cost-effectiveness and process reliability, dating back more than 75 years. Continuous refinement of our devices guarantees maximum precision and state-of-the-art technology. This has resulted in the latest generation of the successful TANi series.

Higher quality, improved precision, stronger performance:
The new standard is red.



The new generation
Ideal conditions for any production process where accuracy is a priority. The compact modular concept allows a combination of multiple spindles and axes. High-quality materials and an innovative design guarantee seamless application in any position.

- Centre heights from 80 to 320 mm
- Highest indexing accuracies (up to +/- 1.5 arc seconds possible)
- High radial and axial runout accuracy
- High loads
- Stable clamping with exceptional holding strength
- Can be expanded with additional modules
- Many accessory variants available

Technical tables i.2 – i.15

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– Fax order form i.54

This goes together...
Standard screwdriver inserts

Test torques	Slotted screws																				
	Metric screws												Sheet metal screws						Wood screws		
	Tapping-		Oval head countersunk		Cylinder		Pan head				Set screws		Tapping-		Oval head countersunk		Pan head		Tap-ping-	Oval head countersunk	Half-round
	DIN 5263	ISO 2009	DIN 963	ISO 2010	DIN 964	ISO 1207	DIN 84	ISO 1580	DIN 85	DIN 920	DIN 921	ISO 4766 7435	DIN 417 427	ISO 1482	DIN 7972	ISO 1483	DIN 7973	ISO 1481	DIN 7971	DIN 97	DIN 95	DIN 96
Nm		M	M	M	M	M	M	M	M	M	M	M	M	B	B	B	B	B	B	H	H	H
2 x 0,4	0,35											2,5 3	2,5 3							1,6		1,6
2,5 x 0,4	0,42	1,6	1,6	1,6	1,6		1,6 1,8	1,6		2,5	1,6	3,5	3,5								1,6	2
3 x 0,5	0,8	2	2	2	2		2	2		3 3,5	2	4	4	2,2	2,2	2,2	2,2	2,2		2	2	
4 x 0,5	1,1							2		3,5	2							2,2				
3,5 x 0,6	1,4	2,5	2,5	2,5	2,5		2,5	2,5		4	2,5								2,2	2,5	2,5	2,5
4,5 x 0,6	1,8							2,5		4	2,5								2,2			2,5
4 x 0,8	2,9	3	3 3,5	3	3 3,5			3	3	5	3 3,5	5 6	5 6	2,9	2,9	2,9	2,9	2,9	2,9	3 3,5	3 3,5	3 3,5
5,5 x 0,8	3,9		3,5		3,5		3 3,5	3	3	5	3 3,5							2,9	2,9			3,5
5,5 x 1	6,2	3,5	4	3,5	4	3,5	4	3,5	3,5	6	4			3,5	3,5 3,9	3,5	3,5 3,9	3,5	3,5 3,9	4 4,5	4 4,5	4 4,5
6,5 x 1,2	10,5	4 5	5	4 5	5	4	4					8	8	4,2 4,8	4,2 4,8	4,2 4,8	4,2			5	5	5 5,5
8 x 1,2	12,9					5	5	4 5	4 5	8	5						4,8	4,2 4,8	4,2 4,8	5,5	5,5	
8 x 1,6	22,9	6	6	6	6							10 12	10 12	5,5 6,3	5,5 6,3	5,5 6,3	5,5			6	6	6
10 x 1,6	28,7					6	6	6	6	10	6		14				6,3	5,5 6,3	5,5 6,3	7 8	7	
12 x 2	53,8	8	8	8	8	8	8	8	8		8		16	8		8		8			8	7-8
14 x 2,5	98,0	10	10	10	10	10	10	10	10		10		18-20	9,5		9,5		9,5		10		

Size		Test torques	Phillips head, PH + PZ									
			Metric screws			Sheet metal screws			Wood screws			American screws
			Tapping-	Oval head countersunk	Oval head	Oval head	Tapping-	Oval head countersunk	Oval head countersunk	Half-round	Tapping-	
		Phillips	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚
		Pozidriv	✚	✚	✚	✚	✚	✚	✚	✚	✚	✚
		DIN 5261	DIN 965	DIN 966	DIN 7985	DIN 7981	DIN 7982	DIN 7983	DIN 7995	DIN 7996	DIN 7997	
⊕	⊕	Nm	M	M	M	B	B	B	H	H	H	No.
00	00	*	*	*	*	*	*	*	*	*	*	
0	0	2	1,6 2	1,6 2	1,6 1,8				2	2	2	0 - 1
1	1	5	2,5 3	2,5 3	2 3	2,2 2,9	2,2 2,9	2,2 2,9	2,5 3	2,5 3	2,5 3	2 - 4
2	2	14	3,5 5	3,5 5	3,5 5	3,5 4,8	3,5 4,8	3,5 4,8	3,5 5	3,5 5	3,5 5	5 - 10
3	3	42	6	6	6	5,5 6,3	5,5 6,3	5,5 6,3	5,5 7	5,5 7	5,5 7	12 - 16
4	4	88,7	8 10	8 10	8 10				8	8	8	18 - ...

*Special screws

TORX® This goes together... Screwdriver inserts

TORX® Socket wrench inserts

	TORX®	mm	Test torques Nm	Internal-TORX® Metric screws Cylinder ISO 4762 DIN 912	Metric screws Tapping- DIN 963 965	Metric screws Oval head countersunk DIN 964 966	Metric screws Cylinder DIN 7984 6912	Metric screws Oval head saucer head DIN 7985	Metric screws Tapping- DIN 7991	Sheet metal screws Oval head DIN 7981	Sheet metal screws Tapping- DIN 7972 7982	Sheet metal screws Oval head countersunk DIN 7973 7983
Size 1:1	Size	⎈		M	M	M	M	M	M	B	B	B
✱	T 5	1,42	0,51	*	*	*	*	*	*	*	*	*
✱	T 6	1,70	0,9	*	*	*	*	*	*	*	*	*
⎈	T 7	1,99	1,7	*	*	*	*	*	*	*	*	*
⎈	T 8	2,31	2,6	2,5	2,5	2,5		2,5		2,9	2,9	2,9
⎈	T 9	2,50	3,4							2,9		
⎈	T 10	2,74	4,5	3	3	3	3	3	3	3,5	3,5	3,5
⎈	T 15	3,27	7,7		3,5	3,5		3,5		3,9	3,9	3,9
⎈	T 20	3,86	12,7	4	4	4	4	4	4	4,2	4,2	4,2
⎈	T 25	4,43	19,0	5	5	5	5	5	5	4,8 5,5	4,8 5,5	4,8 5,5
⎈	T 27	4,99	26,9	**	**	**	**	**	**	**	**	**
⎈	T 30	5,52	37,4	6	6	6	6	6	6	6,3	6,3	6,3
⎈	T 40	6,65	65,1	8	8	8	8	8	8			
⎈	T 45	7,82	104	**	**	**	**	**	**	**	**	**
⎈	T 50	8,83	159	10	10	10	10	10	10			
⎈	T 55	11,22	257	12			12		12			
⎈	T 60	13,25	446	14			14					

* Special screws M 1.6 and 2.0 for carbide indexable inserts
** Special screws

Size 1:1	TORX® Size	mm	External-TORX® Metric screws Flange ISO 4014 4017 DIN 931 933	Flange DIN 6921
		⎈	M	M
⎈	E 4	3,83	3	
⎈	E 5	4,72	4	
⎈	E 6	5,69	5	4
⎈	E 7	6,17	**	**
⎈	E 8	7,47	6	5
⎈	E 10	9,37	8	6
⎈	E 12	11,12	10	8
⎈	E 14	12,85	12	10
⎈	E 16	14,71	**	**
⎈	E 18	16,64	14	12
⎈	E 20	18,41	16	14

This goes together…

Standard socket wrench

	Test torques	Hexagon socket screws								Test torques	External hexagon							
		Metric screws									Metric Screws and Nuts						Screws	
		Cylinder	with guide	Cylinder	Tapping-	Threaded pin					Screws				Nuts		Sheet metal	Wood
		ISO 4762				ISO 4026 4029	ISO 4027	ISO 4028		ISO 4018	ISO 4016	ISO 4014	ISO 4017	ISO 4035 4036		ISO 1479	
		DIN 912	DIN 6912	DIN 7984	DIN 7991	DIN 913 916	DIN 914	DIN 915		DIN 558	DIN 601	DIN 931	DIN 933	DIN 439	DIN 934	DIN 7976	DIN 571
SW	Nm	M	M	M	M	M	M	M	SW	Nm	M	M	M	M	MO	MO	B	H
0,7						1,4 1,6 1,8	1,4 1,6 1,8	1,4 1,6 1,8		-					1 1,2 1,4		
0,9						2	2	2	3,2	7,08			1,6	1,6	1,6	1,6	2,2	
1,3		1,4				2,5	2,5	2,5	3,5	8,26					1,8			
1,5	0,95	1,6-2				3	3	3	4	10,4			2	2	2	2		
2	2,3	2,5		3	3	4	4	4	4,5	12,6				2,3				
2,5	4,4	3		4	4	5	5	5	5	15,1			2,5	2,5	2,5	2,5	2,9	
3	7,6	4	4	5	5	6	6	6	5,5	17,8			3	3	3	3	3,5	
4	18	5	5	6	6	8	8	8	6	20,6			3,5	3,5	3,5	3,5		
5	35	6	6	8	8	10	10	10	7	26,8			4	4	4	4	3,9 4,2	4
6	61	8	8		10	12 14	12 14	12 14	8	33,6	5	5	5	5	5	5	4,8 5,5	5
7	97			10					9	41,1	-	-	-	-	-	-	-	-
8	140	10	10	12	12	16	16	16	10	49,1	6	6	6	6	6	6	6,3	6
10	280	12	12	14	14 16	18 20	18 20	18 20	11	57,8			7	7		7		
12	480	14	14	16 18	18 20	22 24	22 24	22 24	12	67,0								7
									13	68,6	8	8	8	8	8	8	8	8
									14	68,6	-	-	-	-	-	-	-	-

	Index	
ISO	International standard	
DIN	German standard	
M	Metric screws	Thread diameter
M	Threaded pins, metric	Thread diameter
MO	Nuts, metric	Thread diameter
B	Sheet metal screws	Thread diameter
H	Wood screws	Thread diameter

	Symbols
Tool drive = screwdriver insert	
for screws with inside drive	
Tool drive = socket wrench insert	
for screws with outside drive	

This goes together...
Standard screwdrivers

Flat blade screwdrivers

Test torques		Metric screws: Tapping-		Oval head countersunk		Cylinder		Pan head				Set screws		Sheet metal screws: Tapping-		Oval head countersunk		Pan head		Wood screws: Tapping-		Oval head countersunk	Half-round
DIN 5263 Nm	DIN 5263 Nm	ISO 2009	DIN 963	ISO 2010	DIN 964	ISO 1207	DIN 84	ISO 1580	DIN 85	DIN 920	DIN 921	ISO 4766 7435	DIN 417 427	ISO 1482	DIN 7972	ISO 1483	DIN 7973	ISO 1481	DIN 7971	DIN 97	DIN 95	DIN 96	
M	M	M	M	M	M	M	M	M	M	M	M	M	M	B	B	B	B	B	B	H	H	H	
0,30	0,35											2,5 3	2,5 3							1,6		1,6	2 x 0,4
0,40	0,45	1,6	1,6	1,6	1,6		1,6 1,8	1,6		2,5	1,6	3,5	3,5								1,6	2	2,5 x 0,4
0,7	0,8	2	2	2	2		2	2		3/3,5	2	4	4	2,2	2,2	2,2	2,2	2,2		2	2		3 x 0,5
-	1,1							2		3,5	2							2,2					4 x 0,5*
1,3	1,4	2,5	2,5	2,5	2,5		2,5	2,5		4	2,5								2,2	2,5	2,5	2,5	3,5 x 0,6
-	1,8							2,5		4	2,5								2,2			2,5	4,5 x 0,6*
2,6	2,9	3	3 3,5	3	3 3,5			3	3	5	3 3,5	5 6	5 6	2,9	2,9	2,9	2,9	2,9	2,9	3 3,5	3 3,5	3 3,5	4 x 0,8
-	3,9		3,5		3,5		3 3,5	3	3	5	3 3,5							2,9	2,9			3,5	5,5 x 0,8*
5,5	6,2	3,5	4	3,5	4	3,5	4	3,5	3,5	6	4			3,5	3,5 3,9	3,5	3,5 3,9	3,5	3,5 3,9	4 4,5	4 4,5	4 4,5	5,5 x 1
9,4	10,5	4 5	5	4 5	5	4	4					8	8	4,2 4,8	4,2 4,8	4,2 4,8	4,2			5	5	5 5,5	6,5 x 1,2
11,5	12,9					5	5	4 5	4 5	8	5						4,8	4,2 4,8	4,2 4,8	5,5	5,5		8 x 1,2
20,5	22,9	6	6	6	6							10 12	10 12	5,5 6,3	5,5 6,3	5,5 6,3	5,5			6	6	6	8 x 1,6
25,6	28,7					6	6	6	6	10	6		14				6,3	5,5 6,3	5,5 6,3	7 8	7		10 x 1,6
48,0	53,8	8	8	8	8	8	8	8	8		8		16	8		8		8			8	7 - 8	12 x 2
87,5	98,0	10	10	10	10	10	10	10	10		10		18-20	9,5		9,5		9,5		10			14 x 2,5

*Only for power screwdrivers

Phillips head, PH + PZ

Size		Test torques		Metric screws: Tapping-	Oval head countersunk	Oval head	Sheet metal screws: Oval head	Tapping-	Oval head countersunk	Wood screws: Oval head countersunk	Half-round	Tapping-	American screws
		DIN 5261 Nm	DIN 5261 Nm	DIN 965	DIN 966	DIN 7985	DIN 7981	DIN 7982	DIN 7983	DIN 7995	DIN 7996	DIN 7997	
				M	M	M	B	B	B	H	H	H	No.
00	00	*	*	*	*	*	*	*	*	*	*	*	
0	0	1	1	1,6 2	1,6 2	1,6 1,8				2	2	2	0 - 1
1	1	3,5	3,9	2,5 3	2,5 3	2 3	2,2 2,9	2,2 2,9	2,2 2,9	2,5 3	2,5 3	2,5 3	2 - 4
2	2	8,2	10,3	3,5 5	3,5 5	3,5 5	3,5 4,8	3,5 4,8	3,5 4,8	3,5 5	3,5 5	3,5 5	5 - 10
3	3	19,5	32,0	6	6	6	5,5 6,3	5,5 6,3	3,5 6,3	5,5 7	5,5 7	5,5 7	12 - 16
4	4	38	88,7	8 10	8 10	8 10				8	8	8	18 - ...

Index

ISO International standard
DIN German standard

M Metric screws — Thread diameter
M Threaded pins, metric — Thread diameter
MO Nuts metric — Thread diameter
B Sheet metal screws — Thread diameter
H Wood screws — Thread diameter

Symbols

Tool drive = screwdriver
for screws with inside drive

Tool drive = socket wrench
for screws with outside drive

This goes together...

TORX® screwdriver

TORX® socket wrench

	TORX®	mm	Test torques Nm	Internal-TORX® Metric screws Cylinder ISO 4762 DIN 912	Tapping- DIN 963 965	Oval head countersunk DIN 964 966	Cylinder DIN 7984 6912	Oval head sealed head DIN 7985	Tapping- DIN 7991	Sheet metal screws Oval head DIN 7981 7982	Tapping- DIN 7972 7983	Oval head countersunk DIN 7973
Size 1:1	Size			M	M	M	M	M	M	B	B	B
	T 5	1,42	0,43	*	*	*	*	*	*	*	*	*
	T 6	1,70	0,75	*	*	*	*	*	*	*	*	*
	T 7	1,99	1,4	*	*	*	*	*	*	*	*	*
	T 8	2,31	2,2	2,5	2,5	2,5		2,5		2,9	2,9	2,9
	T 9	2,50	2,8						2,9			
	T 10	2,74	3,7	3	3	3	3	3	3	3,5	3,5	3,5
	T 15	3,27	6,4		3,5	3,5		3,5		3,9	3,9	3,9
	T 20	3,86	10,5	4	4	4	4	4	4	4,2	4,2	4,2
	T 25	4,43	15,9	5	5	5	5	5	5	4,8 5,5	4,8 5,5	4,8 5,5
	T 27	4,99	22,5	**	**	**	**	**	**	**	**	**
	T 30	5,52	31,1	6	6	6	6	6	6	6,3	6,3	6,3
	T 40	6,65	54,1	8	8	8	8	8	8			
	T 45	7,82	86	**	**	**	**	**	**	**	**	**
	T 50	8,83	132	10	10	10	10	10	10			
	T 55	11,22	218	12			12		12			
	T 60	13,25	379	14			14					

* Special screws M 1.6 and 2.0 for carbide indexable inserts
** Special screws

	TORX®	mm	External-TORX® Metric screws Flange ISO 4014 4017 DIN 931 933	Flange DIN 6921
Size 1:1	Size		M	M
	E 4	3,83	3	
	E 5	4,72	4	
	E 6	5,69	5	4
	E 7	6,17	**	**
	E 8	7,47	6	5
	E 10	9,37	8	6
	E 12	11,12	10	8
	E 14	12,85	12	10
	E 16	14,71	**	**
	E 18	16,64	14	12
	E 20	18,41	16	14

This goes together...
Standard hexagon screwdriver

Standard socket wrench

Hexagon socket screws

Metric screws

Cylinder	with guide	Cylinder	Tapping-	Threaded pin		
ISO 4762				ISO 4026 4029	ISO 4027	ISO 4028
DIN 912	DIN 6912	DIN 7984	DIN 7991	DIN 913 916	DIN 914	DIN 915

⬢		M	M	M	M	M	M	M
0,7	0,08					1,4 1,6 1,8	1,4 1,6 1,8	1,4 1,6 1,8
0,9	0,18					2	2	2
1,3	0,53	1,4				2,5	2,5	2,5
1,5	0,82	1,6-2				3	3	3
2	1,9	2,5		3	3	4	4	4
2,5	3,8	3		4	4	5	5	5
3	6,6	4	4	5	5	6	6	6
4	16	5	5	6	6	8	8	8
5	30	6	6	8	8	10	10	10
6	52	8	8		10	12 14	12 14	12 14
7	78			10				
8	120	10	10	12	12	16	16	16
10	220	12	12	14	14 16	18 20	18 20	18 20
12	370	14	14	16 18	18 20	22 24	22 24	22 24
14	590	16 18	16 18	20 22	22 24			
17	1000	20 22	20 22	24				
19	1000	24 27	24 27					
22	1000	30	30					
24	1000	33	33					
27	1000	36	36					
32	1000	42						

Inch = mm	Inch = mm
1/16 = 1,59	9/32 = 7,14
5/64 = 1,98	5/16 = 7,94
3/32 = 2,38	11/32 = 8,73
7/64 = 2,78	3/8 = 9,53
1/8 = 3,18	7/16 = 11,11
9/64 = 3,57	1/2 = 12,90
5/32 = 3,97	9/16 = 14,29
3/16 = 4,76	5/8 = 15,88
7/32 = 5,56	3/4 = 19,05
1/4 = 6,35	

External hexagon

Metric Screws and Nuts — Screws / Nuts; Screws: Sheet metal, Wood

Screws				Nuts		Sheet metal	Wood
ISO 4018	ISO 4016	ISO 4014	ISO 4017	ISO 4035 4036		ISO 1479	
DIN 558	DIN 601	DIN 931	DIN 933	DIN 439	DIN 934	DIN 7976	DIN 571

⬢ SW	Test torques DIN 899 Nm	M	M	M	M	M	M	B	H
2,5	-						1		
3	1,1						1,2 1,4		
3,2	1,3			1,6	1,6	1,6	1,6	2,2	
3,5	1,6					1,8			
4	2,4			2	2	2	2		
4,5	3,3				2,3				
5	4,4			2,5	2,5	2,5	2,5	2,9	
5,5	5,8			3	3	3	3	3,5	
6	7,4			3,5	3,5	3,5	3,5		
7	11,4			4	4	4	4	3,9 4,2	4
8	16,6	5	5	5	5	5	5	4,8 5,5	5
9	23,0	-	-	-	-	-	-	-	-
10	31,0	6	6	6	6	6	6	6,3	6
11	40,4			7	7		7		
12	51,5								7
13	64,5	8	8	8	8	8	8	8	8
14	79,4	-	-	-	-	-	-	-	-
15	96,2	-	-	-	-	-	-	-	-
16	115	10	10	10	10	10			
17	134	10	10	10	10	10	10		10

Square

Metric screws			Metric nuts			
DIN 478	DIN 479	DIN 480	DIN 557	DIN 562		

⬢ SW	M	M	M	M	M		
3,5					1,8		
4					2		
4,5	-	-	-	-	-		
5	5	5			2,5		
5,5					3		
6	6	6			3,5		
7					4		
8	8	8	8	5	5		
9	-	-	-	-	-		
10	10	10	10	6	6		
11	-	-	-	-	-		
12	-	-	-	-	-		
13	12	12	12	8	8		
14	-	-	-	-	-		

Units of measure

Metric dimensions

Wrench sizes: Nominal size	Minimal dimension in mm, in compliance with DIN 475/2	Maximal dimension in mm, in compliance with DIN 475/2, line 1	Maximal dimension in mm, in compliance with DIN 475/2, line 2	ø-screw thread: Metric dimensions in compliance with DIN: Standard hexagon	Small hexagon	Large hexagon	ISO R272 1968: Standard hexagon	Small hexagon
3	3,02	3,08		1,2 1,4				
3,2	3,22	3,28		1,6			1,6	
3,5	3,52	3,60		1,7				
4	4,02	4,12		2			2	
4,5	4,52	4,62		2,3				
5	5,02	5,12		2,5 2,6			2,5	
5,5	5,52	5,62		3			3	
6	6,03	6,15		3,5				
7	7,03	7,15		4			4	
8	8,03	8,15	8,18	5	6		5	
9	9,03	9,15	9,18					
10	10,04	10,19	10,24	6	8		6	
11	11,04	11,19	11,24	7			7	
12	12,04	12,24	12,30					8
13	13,04	13,24	13,30	8	10		8	
14	14,05	14,27	14,35					10
15	15,05	15,27	15,35	10				
16	16,05	16,27	16,35	(Kfz)				
17	17,05	17,30	17,40	10	12		10	12
18	18,05	18,30	18,40					
19	19,06	19,36	19,46	12	16		12	14
20	20,06	20,36	20,46					
20,8	20,86	21,16	21,26					
21	21,06	21,36	21,46					
22	22,06	22,36	22,46	14		12	14	16
23	23,06	23,36	23,46					
24	24,06	24,36	24,46	16	20		16	18
25	25,06	25,36	25,46					
26	26,08	26,48	26,58					
27	27,08	27,48	27,58	18		16	18	20
28	28,08	28,48	28,58					
29	29,08	29,48	29,58					
30	30,08	30,48	30,58	20	24		20	22
32	32,08	32,48	32,58	22		20	22	24
33	33,08	33,48	33,58					
36	36,10	36,60	36,70	24	30	22	24	27
38	38,10	38,60	38,70					
41	41,10	41,60	41,70	27		24	27	30
42	42,10	42,60	42,70					
46	46,10	46,60	46,70	30	36	27	30	33
50	50,10	50,60	50,70	33			33	36
54	54,10	54,60	54,70					
55	55,12	55,72	55,92	36	42		36	39
58	58,12	58,72	58,92					
60	60,12	60,72	60,92	39			39	
63	63,12	63,72	63,92					
65	65,12	65,72	65,92	42	48		42	
67	67,12	67,72	67,92					
70	70,12	70,72	70,92	45			45	
71	71,12	71,72	71,92					
75	75,15	75,85	76,15	48	56		48	
77	77,15	77,85	78,15					
80	80,15	80,85	81,15	52			52	
85	85,15	85,85	86,15	56			56	
90	90,15	90,85	91,15	60			60	
95	95,15	95,85	96,15	64			64	
100	100,15	100,85	101,15	68			68	
105	105,20	106,00	106,40	72			72	
110	110,20	111,00	111,40	76			76	
115	115,20	116,00	116,40	80			80	
120	120,20	121,00	121,40	85			85	
125	125,20	126,00	126,40					
130	130,20	131,00	131,40	90			90	
135	135,20	136,00	136,40	95			95	
140	140,20	141,00	141,40					
145	145,20	146,00	146,40	100			100	
150	150,25	151,25		105			105	
155	155,25	156,25		110			110	
160	160,25	161,25						
165	165,25	166,25					115	
170	170,25	171,25						
175	175,25	176,25					120	
180	180,25	181,25					125	
185	185,25	186,25					130	
190	190,25	191,25					135	
195	195,25	196,25						
200	200,25	201,25					140	
210	210,25	211,25					150	
220	220,30	221,50						
230	230,30	231,50						

U.S. customary units

Wrench sizes: Nominal size	Decimal-inch	Decimal-metric	ø-screw thread: ISO R 272 1962: Bolts	Nuts	United Standard: normal series BS 1768	heavy series BS 1769	American Standard B 18.2 1972: Nuts: finished thick series	regular square series	heavy series	Bolts+Screws: finished and regular bolt series, hex. head cap screws	finished and heavy bolt series
1/8	.1250	3,18	No.2								
5/32	.1563	3,97		No. 0, 1							
3/16	.1875	4,76	No. 3, 4, 5	No. 2, 3							
13/64	.2031	5,16									
7/32	.2188	5,56									
15/64	.2344	5,95									
1/4	.2500	6,35	No. 6, 8	No. 4							
17/64	.2656	6,75									
9/32	.2813	7,14								No.10	
5/16	.3125	7,94	No. 10, 12	No. 5, 6							
11/32	.3438	8,73		No. 8							
3/8	.3750	9,52		No. 10							
13/32	.4062	10,32									
7/16	.4375	11,11	1/4	No. 12 1/4	1/4		1/4	1/4		1/4	
1/2	.5000	12,70	5/16	5/16	5/16		5/16		1/4	5/16	
17/32	.5313	13,49									
9/16	.5625	14,29	3/8	3/8	3/8		3/8	5/16	5/16	3/8	
19/32	.5938	15,08									
5/8	.6250	15,87	7/16		7/16			3/8		7/16	
21/32	.6563	16,67									
11/16	.6875	17,46		7/16			7/16		3/8		
3/4	.7500	19,05	1/2	1/2	1/2		1/2	7/16	7/16	1/2	
25/32	.7813	19,84									
13/16	.8125	21,26	9/16		9/16			1/2		9/16	
7/8	.8750	22,22		9/16		1/2	9/16	9/16	1/2		1/2
15/16	.9375	23,81	5/8	5/8	5/8		5/8		9/16	5/8	
31/32	.9688	24,61									
1	1.0000	25,40						5/8			
1.1/16	1.0625	26,99				5/8			5/8		5/8
1.1/8	1.1250	28,57	3/4	3/4	3/4		3/4	3/4		3/4	
1.3/16	1.1875	30,16									
1.1/4	1.2500	31,75				3/4			3/4		3/4
1.5/16	1.3125	33,34	7/8	7/8	7/8		7/8	7/8		7/8	
1.3/8	1.3750	34,92									
1.7/16	1.4375	36,51				7/8			7/8		7/8
1.1/2	1.5000	38,10	1	1	1		1	1		1	
1.5/8	1.6250	41,28				1			1		1
1.11/16	1.6875	42,86	1 1/8	1 1/8	1 1/8		1 1/8	1 1/8		1 1/8	
1.3/4	1.7500	44,45									
1.13/16	1.8125	46,04				1 1/8			1 1/8		1 1/8
1.7/8	1.8750	47,62	1 1/4	1 1/4	1 1/4		1 1/4	1 1/4		1 1/4	
2	2.0000	50,80				1 1/4			1 1/4		1 1/4
2.1/16	2.0625	52,39	1 3/8	1 3/8	1 3/8		1 3/8	1 3/8		1 3/8	
2.3/16	2.1875	55,56				1 3/8			1 3/8		1 3/8
2.1/4	2.2500	57,15	1 1/2	1 1/2	1 1/2		1 1/2	1 1/2		1 1/2	
2.3/8	2.3750	60,32				1 1/2			1 1/2		1 1/2
2.7/16	2.4375	61,91					1 5/8	1 5/8		1 5/8	
2.9/16	2.5625	65,09							1 5/8		1 5/8
2.5/8	2.6250	66,67	1 3/4	1 3/4	1 3/4		1 3/4	1 3/4		1 3/4	
2.3/4	2.7500	69,85				1 3/4			1 3/4		1 3/4
2.13/16	2.8125	71,44					1 7/8	1 7/8		1 7/8	
2.15/16	2.9375	74,61							1 7/8		1 7/8
3	3.0000	76,20	2	2	2		2	2		2	
3.1/8	3.1250	79,37				2			2		2
3.3/8	3.3750	85,72					2 1/4	2 1/4		2 1/4	
3.1/2	3.5000	88,90							2 1/4		2 1/4
3.3/4	3.7500	95,25					2 1/4	2 1/4		2 1/4	
3.7/8	3.8750	98,42							2 1/4		2 1/4
4.1/8	4.1250	104,77					2 3/4	2 3/4		2 3/4	
4.1/4	4.2500	107,95							2 3/4		2 3/4
4.1/2	4.5000	114,30					3	3		3	
4.5/8	4.6250	117,47							3		3
4.7/8	4.8750	123,82							3 1/4	3 1/4	
5	5.0000	127,00									
5.1/4	5.2500	133,35							3 1/2	3 1/2	
5.3/8	5.3750	136,52							3 1/2		
5.5/8	5.6250	142,87							3 3/4	3 3/4	
5.3/4	5.7500	146,05							3 3/4		
6	6.0000	152,40							4	4	
6.1/8	6.1250	155,57							4		

Imperial units

ø-screw thread: Nominal size	BS 916, BS 1083	Wrench sizes: Decimal-inch	Decimal-metric
10 BA		.117	2,97
9 BA		.131	3,33
8 BA		.152	3,86
7 BA		.172	4,37
6 BA		.193	4,90
5 BA		.220	5,59
4 BA		.248	6,30
1/16	3/32	.256	6,50
3 BA		.282	7,16
3/32	1/8	.297	7,54
2 BA		.324	8,23
1/8	3/16	.340	8,64
1 BA		.365	9,27
0 BA		.413	10,49
3/16	1/4	.445	11,30
1/4	5/16	.525	13,33
5/16	3/8	.600	15,24
3/8	7/16	.710	18,03
7/16	1/2	.820	20,83
1/2	9/16	.920	23,37
9/16	5/8	1.010	25,65
5/8	11/16	1.100	27,94
11/16	3/4	1.200	30,48
3/4	7/8	1.300	33,02
13/16	15/16	1.390	35,31
7/8	1	1.480	37,59
1	1 1/8	1.670	42,42
1.1/8	1 1/4	1.860	47,24
1.1/4	1 3/8	2.050	52,07
1.3/8	1 1/2	2.220	56,39
1.1/2	1 5/8	2.410	61,21
1.5/8	1 3/4	2.580	65,53
1.3/4	2	2.760	70,10
2	2 1/4	3.150	80,01
	2 1/2	3.550	90,17
	2 3/4	3.890	98,80
	3	4.180	106,17
	3 1/4	4.530	115,06
	3 1/2	4.850	123,19
	3 3/4	5.180	131,57
	4	5.550	140,97
	4 1/2	6.380	162,05
	5	7.300	185,42
	5 1/2	8.350	212,09

The most important prefixes and their application

Mega	M	1 000 000 = 10^6	1 MW =	1 000 000 W
Kilo	k	1 000 = 10^3	1 kW =	1 000 W
Hekto	h	100 = 10^2	1 hl =	100 l
Deka	da	10	1 daN =	10 N
Dezi	d	0,1 = 10^{-1}	1 dm =	0,1 m
Zenti	c	0,01 = 10^{-2}	1 cm =	0,01 m
Milli	m	0,001 = 10^{-3}	1 mm =	0,001 m
Mikro	µ	0,000001 = 10^{-6}	1 µm =	0,000001 m

Previous names and symbols for units which will not be changed

Size	Names	Symbol	Relations to SI-unit
Volume	Litre	l	1 l = 1 dm^3 = 0,001 m^3
Masse	Ton	t	1 t = 1 Mg = 1000 kg
Pressure	Bar	bar	1 bar = 10^5 Pa
Area	Are	a	1 a = 10^2 m^2
Angle	Degrees	°	1° = 17,45 mrad
	Minute	'	1°/60 = 0,291 mrad
	Second	"	1'/60 = 4,85 rad
Time	Minute	min	1 min = 60 s
	Hour	h	1 h = 3600 s
Velocity		km/h	1 km/h = 1/3,6 m/s
			1 m/s = 3,6 km/h

Thanks to the SI-system, it is easy to distinguish between force and mass (weight). Therefore, there will be no more confusion of kp and kg.

The unit of force is newton (N).
The unit of mass (weight) is kilogramme (kg).
The difference is caused by the acceleration of gravity (9.81 m/s^2).

The most important conversions between the previous and the new SI-units

SI-unit into previous unit:

1 N	=	0,102 kp
1 Nm	=	0,102 kpm (= 1 Joule)
1 W	=	0,102 kpm/s (= 1 J/s)
1 kW	=	1,36 PS
1 KW	=	860 kcal/h
1 J	=	0,102 kpm
1 J	=	0,239 cal
1 Pa	= (1 N/m^2) =	0,102 kp/m^2
K	=	°C + 273,15

Previous unit into SI-unit:

1 kp	=	9,81 N
1 kpm	=	9,81 Nm
1 kpm/s	=	9,81 W
1 PS	=	0,736 kW
1 kcal/h	=	1,16.10^{-3} kW = 0,00116 kW
1 kpm	=	9,81 J
1 cal	=	4,19 J
1 kp/m^2	=	9,81 Pa = 9,81 N/m^2

The tables state that:
1 kp = 9,81 N and 1 N = 0,102 kp.

With a margin of error of merely 2 %, kp and N vary by a factor of 10.

Therefore, in practice, the following values are used:

1 kp	=	10 N
1 N	=	0,1 kp

*) SI-system International d'Unites = international units of measurement
**) The SI-unit for the temperature is kelvin.

The most important SI-units*

Size	Name	Symbol
Length	Meter	m
Mass	Kilogramme	kg
Time	Second	s
Electric current	Ampere	A
Force	Newton	N
Torque	Newton metre	Nm
Power	Watt	W
Energy (work)	Joule	J
Pressure	Pascal	Pa
Temperature**	Kelvin	K

Energy/work (joule)

The unit of energy has three denominations whose numerical values are equal.

1. Newton metre	Nm	(mechanical energy)
2. Watt second	Ws	(electrical energy)
3. Joule	J	(caloric energy)

The choice of denomination determines whether the energy talked about is mechanical, electrical, or caloric.

1 J = 1 Nm = 1 Ws (in relation to the absolute variable)

Conversion of mechanical tension

Unit	N/mm^2	PA	kp/mm^2
1 N/mm^2	1	106	0,102
1 PA	10^{-6}	1	0,102 – 10^{-6}
1 kp/mm^2	9,81	9,81 – 106	1

Here also, a sufficient accuracy (margin of error: 2 %) is achieved in practice as follows:

1 N/mm^2	=	0,1 kp/mm^2
1 kp/mm^2	=	10 N/mm^2

For example:

1. A girder carries a load of 10 kN.
2. The weight of the girder is 200 kg.

The kelvin scale starts at absolute zero
= – 273,15°C

The following table is meant to clarify the relation of °C and K.

	Kelvin	°C
Absolute zero	0 K	– 273,15°
Melting point	273,15 K	0 °C
Boiling point	373,15 K	+ 100°C

In practice, the information that water has a temperature of 20°C, is maintained. Only when referring to temperature differences, K has to be used. In this case, 1° C = 1 K.
For example: The difference in temperature between the outside and the inside of a window frame is 15 K. The symbol ° is not used with the unit kelvin.

Comparison table for Vickers-Brinell-Rockwell hardness and tensile strength [1)]

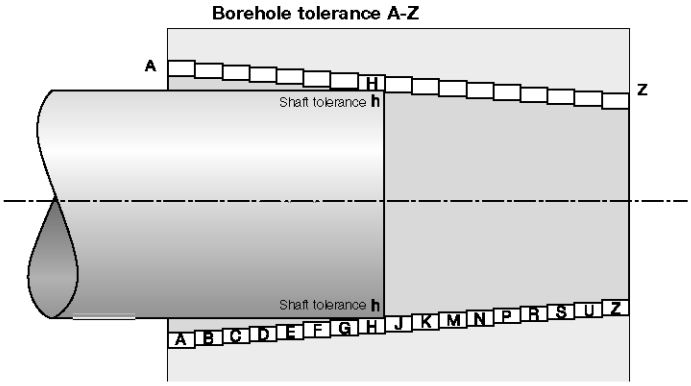
Vickers hardness HV 30	Brinell hardness HB 30	Rockwell hardness[2)] HRB	Rockwell hardness[2)] HRC	Tensile strength σ_B N/mm²
80	80	36,4	-	270
85	85	42,4	-	290
90	90	47,5	-	310
95	95	52,0	-	320
100	100	56,4	-	340
105	105	60,0	-	360
110	110	63,4	-	380
115	115	66,4	-	390
120	120	69,4	-	410
125	125	72,0	-	420
130	130	74,4	-	440
135	135	76,4	-	460
140	140	78,4	-	470
145	145	80,4	-	490
150	150	82,2	-	500
155	155	83,8	-	520
160	160	85,4	-	540
165	165	86,8	-	550
170	170	88,2	-	570
175	175	89,6	-	590
180	180	90,8	-	600
185	185	91,8	-	620
190	190	93,0	-	640
195	195	94,0	-	660
200	200	95,0	-	670
205	205	95,8	-	680
210	210	96,6	-	710
215	215	97,6	-	720
220	220	98,2	-	730
225	225	99,0	-	750
230	230	-	19,2	760
235	235	-	20,2	780
240	240	-	21,2	800
245	245	-	22,1	820
250	250	-	23,0	830
255	255	-	23,8	850
260	260	-	24,6	870
265	265	-	25,4	880
270	270	-	26,2	900
275	275	-	26,9	920
280	280	-	27,6	940
285	285	-	28,3	950
290	290	-	29,0	970
295	295	-	29,6	990
300	300	-	30,3	1010
310	310	-	31,5	1040
320	320	-	32,7	1080
330	330	-	33,8	1110
340	340	-	34,9	1140

Vickers hardness HV 30	Brinell hardness HB 30	Rockwell hardness[2)] HRB	Rockwell hardness[2)] HRC	Tensile strength σ_B N/mm²
350	350	-	36,0	1170
360	359	-	37,0	1200
370	368	-	38,0	1230
380	376	-	38,9	1260
390	385	-	39,8	1290
400	392	-	40,7	1320
410	400	-	41,5	1350
420	408	-	42,4	1380
430	415	-	43,2	1410
440	423	-	44,0	1430
450	430	-	44,8	1460
460	-	-	45,6	-
470	-	-	46,3	-
480	-	-	47,0	-
490	-	-	47,7	-
500	-	-	48,3	-
510	-	-	49,1	-
520	-	-	49,7	-
530	-	-	50,4	-
540	-	-	51,0	-
550	-	-	51,6	-
560	-	-	52,2	-
570	-	-	52,8	-
580	-	-	53,3	-
590	-	-	53,9	-
600	-	-	54,4	-
610	-	-	55,0	-
620	-	-	55,5	-
630	-	-	56,0	-
640	-	-	56,5	-
650	-	-	57,0	-
660	-	-	57,5	-
670	-	-	58,0	-
680	-	-	58,5	-
690	-	-	59,0	-
700	-	-	59,5	-
720	-	-	60,4	-
740	-	-	61,2	-
760	-	-	62,0	-
780	-	-	62,8	-
800	-	-	63,6	-
820	-	-	64,3	-
840	-	-	65,0	-
860	-	-	65,7	-
880	-	-	66,3	-
900	-	-	66,9	-
920	-	-	67,5	-
940	-	-	68,0	-

1) The hardness values are determined using different procedures and materials and can therefore only be compared in approximation.
2) The Rockwell hardness values are only given for interpolation and the final result must be rounded off.

(excerpt from DIN 7160)
Nominal deviation in µ (= 0,001 mm)

With the standard shaft system, all shafts have h-tolerances. The maximal dimension reaches all the way to the zero line and is equal to the nominal size. The minimal dimension of the shaft is smaller than its nominal size (by the tolerance value).



*) preferably in compliance with DIN 7157 (S = clearance fit)

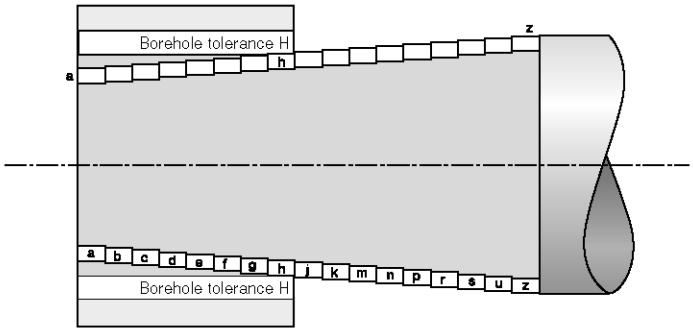
Borehole	Type of fit*)	Nominal size above . . . to . . . mm																				
		1 3	3 6	6 10	10 14	14 18	18 24	24 30	30 40	40 50	50 65	65 80	80 100	100 120	120 140	140 160	160 180	180 200	200 225	225 250
Shaft **h5**		0 − 4	0 − 5	0 − 6	0 − 8		0 − 9		0 − 11		0 − 13		0 − 15		0 − 18			0 − 20		
P 6		− 6 − 12	− 9 − 17	− 12 − 21	− 15 − 26		− 18 − 31		− 21 − 37		− 26 − 45		− 30 − 52		− 36 − 61			− 40 − 70		
N 6		− 4 − 10	− 5 − 13	− 7 − 16	− 9 − 20		− 11 − 24		− 12 − 28		− 14 − 33		− 16 − 38		− 20 − 45			− 22 − 51		
M 6		− 2 − 8	− 1 − 9	− 3 − 12	− 4 − 15		− 4 − 17		− 4 − 20		− 5 − 24		− 6 − 28		− 8 − 33			− 8 − 37		
J 6		+ 3 − 4	+ 5 − 3	+ 5 − 4	+ 6 − 5		+ 8 − 5		+ 10 − 6		+ 13 − 6		+ 16 − 6		+ 18 − 7			+ 22 − 7		
H 6		+ 6 0	+ 8 0	+ 9 0	+ 11 0		+ 13 0		+ 16 0		+ 19 0		+ 22 0		+ 25 0			+ 29 0		
Shaft **h6**		0 − 6	0 − 8	0 − 9	0 − 11		0 − 13		0 − 16		0 − 19		0 − 22		0 − 25			0 − 29		
S 7		− 14 − 24	− 15 − 27	− 17 − 32	− 21 − 39		− 27 − 48		− 34 − 59		− 42 − 72	− 48 − 78	− 58 − 93	− 66 − 101	− 77 − 117	− 85 − 125	− 93 − 133	− 105 − 151	− 113 − 159	− 123 − 169
R 7		− 10 − 20	− 11 − 23	− 13 − 28	− 16 − 34		− 20 − 41		− 25 − 50		− 30 − 60	− 32 − 62	− 38 − 73	− 41 − 76	− 48 − 88	− 50 − 90	− 53 − 93	− 60 − 106	− 63 − 109	− 67 − 113
N 7		− 4 − 14	− 4 − 16	− 4 − 19	− 5 − 23		− 7 − 28		− 8 − 33		− 9 − 39		− 10 − 45		− 12 − 52			− 14 − 60		
M 7		− 2 − 12	0 − 12	0 − 15	0 − 18		0 − 21		0 − 25		0 − 30		0 − 35		0 − 40			0 − 46		
K 7		+ 3 − 6	+ 3 − 9	+ 5 − 10	+ 6 − 12		+ 6 − 15		+ 7 − 18		+ 9 − 21		+ 10 − 25		+ 12 − 28			+ 13 − 33		
J 7		+ 3 − 6	+ 6 − 6	+ 8 − 7	+ 10 − 8		+ 12 − 9		+ 14 − 11		+ 18 − 12		+ 22 − 13		+ 26 − 14			+ 30 − 16		
H 7	**S**	+ 9 0	+ 12 0	+ 15 0	+ 18 0		+ 21 0		+ 25 0		+ 30 0		+ 35 0		+ 40 0			+ 46 0		
G 7	**S**	+ 12 + 2	+ 16 + 4	+ 20 + 5	+ 24 + 6		+ 28 + 7		+ 34 + 9		+ 40 + 10		+ 47 + 12		+ 54 + 14			+ 61 + 15		
F 7		+ 16 + 6	+ 22 + 10	+ 28 + 13	+ 34 + 16		+ 41 + 20		+ 50 + 25		+ 60 + 30		+ 71 + 36		+ 83 + 43			+ 96 + 50		
Shaft **h9**		0 − 25	0 − 30	0 − 36	0 − 43		0 − 52		0 − 62		0 − 74		0 − 87		0 −100			0 − 115		
H 8	**S**	+ 14 0	+ 18 0	+ 22 0	+ 27 0		+ 33 0		+ 39 0		+ 46 0		+ 54 0		+ 63 0			+ 72 0		
H 11	**S**	+ 60 0	+ 75 0	+ 90 0	+110 0		+130 0		+160 0		+190 0		+220 0		+250 0			+290 0		
F 8	**S**	+ 20 + 6	+ 28 + 10	+ 35 + 13	+ 43 + 16		+ 53 + 20		+ 64 + 25		+ 76 + 30		+ 90 + 36		+106 + 43			+122 + 50		
E 9	**S**	+ 39 + 14	+ 50 + 20	+ 61 + 25	+ 75 + 32		+ 92 + 40		+112 + 50		+134 + 60		+159 + 72		+185 + 85			+215 +100		
D 10	**S**	+ 60 + 20	+ 78 + 30	+ 98 + 40	+120 + 50		+149 + 65		+180 + 80		+220 +100		+260 +120		+305 +145			+355 +170		
C 11	**S**	+120 + 60	+145 + 70	+170 + 80	+205 + 95		+240 +110		+280 +120	+290 +130	+330 +140	+340 +150	+390 +170	+400 +180	+450 +200	+460 +210	+480 +230	+530 +240	+550 +260	+570 +280
Shaft **h11**		0 − 60	0 − 75	0 − 90	0 −110		0 −130		0 −160		0 −190		0 −220		0 −250			0 −290		
H 11	**S**	+ 60 0	+ 75 0	+ 90 0	+110 0		+130 0		+160 0		+190 0		+220 0		+250 0			+290 0		
D 11	**S**	+ 80 + 20	+105 + 30	+130 + 40	+160 + 50		+195 + 65		+240 + 80		+290 +100		+340 +120		+395 +145			+460 +170		
C 11	**S**	+120 + 60	+145 + 70	+170 + 80	+205 + 95		+240 +110		+280 +120	+290 +130	+330 +140	+340 +150	+390 +170	+400 +180	+450 +200	+460 +210	+480 +230	+530 +240	+550 +260	+570 +280
A 11	**S**	+330 +270	+345 +270	+370 +280	+400 +290		+430 +300		+470 +310	+480 +320	+530 +340	+550 +360	+600 +380	+630 +410	+710 +460	+770 +520	+830 +580	+950 +660	+1030 +740	+1110 +820

ISO fits for hole basis system

(excerpt from DIN 7160)
Nominal deviation in µ (= 0,001 mm)

With the standard borehole system, all boreholes have h-tolerances. The minimal dimension reaches all the way to the zero line and is equal to the nominal size. The maximal dimension of the borehole is higher than the zero line (by the tolerance value).

Shaft tolerance a-z



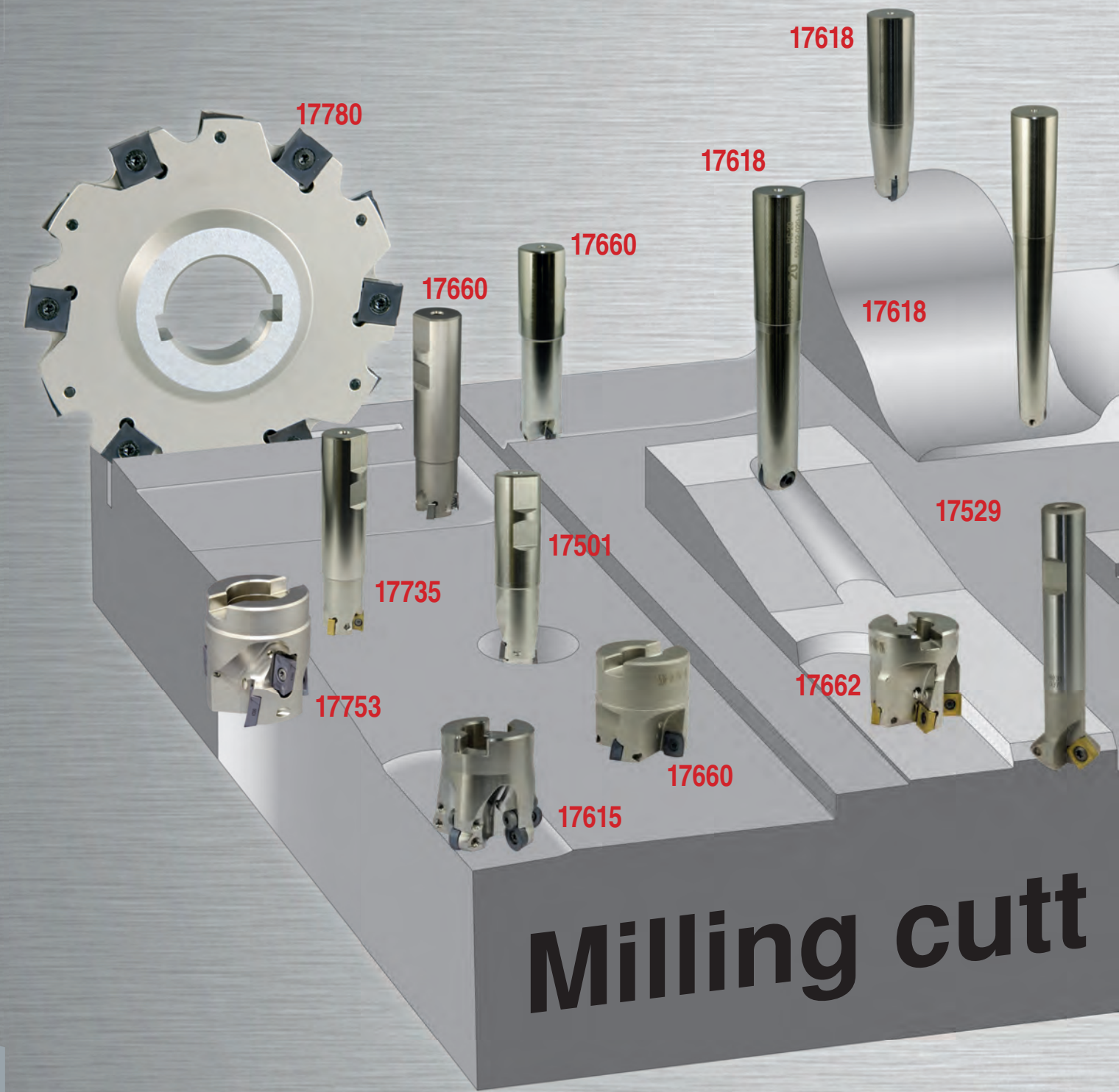
*) preferably in compliance with DIN 7157 (P = interference fit, S = clearance fit, Ü = transition fit)

Shafts	Type of fit*)	Nominal size above . . . to . . . mm																					
		1 3	3 6	6 10	10 14	14 18	18 24	24 30	30 40	40 50	50 65	65 80	80 100	100 120	120 140	140 160	160 180	180 200	200 225	225 250
Boreholes **H6**		+ 6 0	+ 8 0	+ 9 0	+ 11 0		+ 13 0		+ 16 0		+ 19 0		+ 22 0		+ 25 0			+ 29 0		
p 5		+ 10 + 6	+ 17 + 12	+ 21 + 15	+ 26 + 18		+ 31 + 22		+ 37 + 26		+ 45 + 32		+ 52 + 37		+ 61 +43			+ 70 + 50		
n 5		+ 8 + 4	+ 13 + 18	+ 16 + 10	+ 20 + 12		+ 24 + 15		+ 28 + 17		+ 33 + 20		+ 38 + 23		+45 +27			+ 51 + 31		
k 6		+ 6 0	+ 9 – 1	+ 10 + 1	+ 12 + 1		+ 15 + 2		+ 18 + 2		+ 21 + 2		+ 25 + 3		+28 + 3			+ 33 + 4		
j 6		+ 4 – 2	+ 6 – 2	+ 7 – 2	+ 8 – 3		+ 9 – 4		+ 11 – 5		+ 12 – 7		+ 13 – 9		+14 – 11			+ 16 – 13		
h 5		0 – 4	0 – 5	0 – 6	0 – 8		0 – 9		0 – 11		0 – 13		0 – 15		0 – 18			0 – 20		
Boreholes **H7**		+ 10 0	+ 12 0	+ 15 0	+ 18 0		+ 21 0		+ 25 0		+ 30 0		+35 0		+ 40 0			+ 46 0		
s 6	**P**	+ 20 + 14	+ 27 + 19	+ 32 + 23	+ 39 + 28		+ 48 + 35		+ 59 + 43		+ 72 + 35	+ 78 + 59	+ 93 + 71	+101 + 79	+117 + 92	+125 +100	+133 +108	+151 +122	+159 +130	+169 +140
r 6	**P**	+ 16 + 10	+ 23 + 15	+ 28 + 19	+ 34 + 23		+ 41 + 28		+ 50 + 34		+ 60 + 41	+ 62 + 43	+ 73 + 51	+ 76 + 54	+ 88 + 63	+ 90 + 65	+ 93 + 68	+106 + 77	+109 + 80	+113 + 84
n 6	**Ü**	+ 10 + 4	+ 16 + 8	+ 19 + 10	+ 23 + 12		+ 28 + 15		+ 33 + 17		+ 39 + 20		+ 45 + 23		+ 52 + 27			+ 60 + 31		
m 6		+ 8 + 2	+ 12 + 4	+ 15 + 6	+ 18 + 7		+ 21 + 8		+ 25 + 9		+ 30 + 11		+ 35 + 13		+ 40 + 15			+ 46 + 17		
k 6	**Ü**	+ 6 0	+ 9 – 1	+ 10 + 1	+ 12 + 1		+ 15 + 2		+ 18 + 2		+ 21 + 2		+ 25 + 3		+ 28 + 3			+ 33 + 4		
j 6	**Ü**	+ 4 – 2	+ 6 – 2	+ 7 – 2	+ 8 – 3		+ 9 – 4		+ 11 – 5		+ 12 – 7		+ 13 – 9		+ 14 – 11			+ 16 – 13		
h 6	**S**	0 – 6	0 – 8	0 – 9	0 – 11		0 – 13		0 – 16		0 – 19		0 – 22		0 – 25			0 – 29		
g 6	**S**	– 2 – 8	– 4 – 12	– 5 – 14	– 6 – 17		– 7 – 20		– 9 – 25		– 10 – 29		– 12 – 34		– 14 – 39			– 15 – 44		
f 7	**S**	– 6 – 16	– 10 – 22	– 13 – 28	– 16 – 34		– 20 – 41		– 25 – 50		– 30 – 60		– 36 – 71		– 43 – 83			– 50 – 96		
Boreholes **H8**		+ 14 0	+ 18 0	+ 22 0	+ 27 0		+ 33 0		+ 39 0		+ 46 0		+ 54 0		+ 63 0			+ 72 0		
x 8	**P**	+ 34 + 20	+ 46 + 28	+ 56 + 34	+ 67 + 40	+ 72 + 45	+ 87 + 54	+ 97 + 64	+119 + 80	+136 + 97	+168 +122	+192 +146	+232 +178	+264 +210	+311 +248	+343 +280	+373 +310	+422 +350	+457 +385	+497 +425
u 8	**P**	– –	– –	– –	– –	– –	– –	+ 81 + 48	+ 99 + 60	+109 + 70	+133 + 87	+148 +102	+178 +124	+198 +144	+233 +170	+253 +190	+273 +210	+308 +236	+330 +258	+356 +284
h 9	**S**	0 – 25	0 – 30	0 – 36	0 – 43		0 – 52		0 – 62		0 – 74		0 – 87		0 –100			0 –115		
f 7	**S**	– 6 – 16	– 10 – 22	– 13 – 28	– 16 – 34		– 20 – 41		– 25 – 50		– 30 – 60		– 36 – 71		– 43 – 83			– 50 – 96		
d 9	**S**	– 20 – 45	– 30 – 60	– 40 – 76	– 50 – 93		– 65 –117		– 80 –142		–100 –174		–120 –207		–145 –245			–170 –285		
Boreholes **H11**		+ 60 0	+ 75 0	+ 90 0	+110 0		+130 0		+160 0		+190 0		+220 0		+250 0			+290 0		
h 9	**S**	0 – 25	0 – 30	0 – 36	0 – 43		0 – 52		0 – 62		0 – 74		0 – 87		0 –100			0 –115		
h 11	**S**	0 – 60	0 – 75	0 – 90	0 –110		0 –130		0 –160		0 –190		0 –220		0 –250			0 –290		
d 9	**S**	– 20 – 45	– 30 – 60	– 40 – 76	– 50 – 93		– 65 –117		– 80 –142		–100 –174		–120 –207		–145 –245			–170 –285		
d 9	**S**	– 60 –120	– 70 –145	– 80 –170	– 95 –205		–110 –240		–120 –280	–130 –290	–140 –330	–150 –340	–170 –390	–180 –400	–200 –450	–210 –460	–230 –480	–245 –530	–260 –550	–280 –570
c 11	**S**	–270 –330	–270 –345	–280 –370	–290 –400		–300 –430		–310 –470	–320 –480	–340 –530	–360 –550	–380 –600	–410 –630	–460 –710	–520 –770	–580 –830	–660 –950	–740 –1030	–870 –1110

(excerpt from DIN 7160)
Nominal deviation in µ (= 0,001 mm)

External dimensions

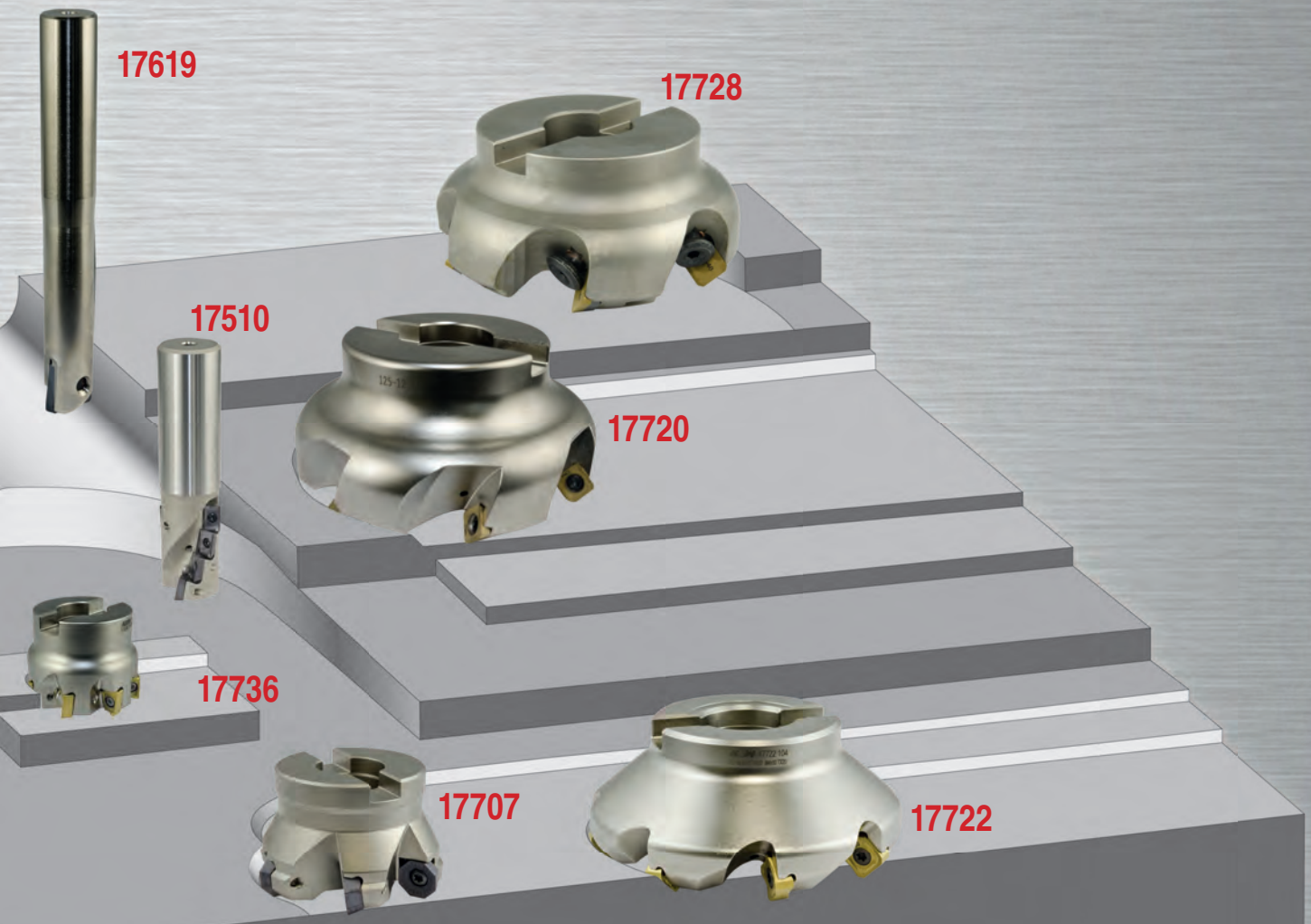
Shafts	Nominal size above . . . to . . . mm									
	1 3	3 6	6 10	10 18	18 30	30 50	50 80	80 120	120 180	180 250
d 11	– 20 – 80	– 30 –105	– 40 –130	– 50 –160	– 65 –195	– 80 –240	–100 –290	–120 –340	–145 –395	–170 –460
e 8	– 14 – 28	– 20 – 38	– 25 – 47	– 32 – 59	– 40 – 73	– 50 – 89	– 60 –106	– 72 –126	– 85 –148	–100 –172
f 9	– 6 – 31	– 10 – 40	– 13 – 49	– 16 – 59	– 20 – 72	– 25 – 87	– 30 –104	– 36 –123	– 43 –143	– 50 –165
h 7	0 – 10	0 – 12	0 – 15	0 – 18	0 – 21	0 – 25	0 – 30	0 – 35	0 – 40	0 – 46
h 8	0 – 14	0 – 18	0 – 22	0 – 27	0 – 33	0 – 39	0 – 46	0 – 54	0 – 63	0 – 72
h 10	0 – 40	0 – 48	0 – 58	0 – 70	0 – 84	0 –100	0 –120	0 –140	0 –160	0 –185
h 12	0 –100	0 –120	0 –150	0 –180	0 –210	0 –250	0 –300	0 –350	0 –400	0 –460
js 11	+ 30 – 30	+ 38 – 37	+ 45 – 45	+ 55 – 55	+ 65 – 65	+ 80 – 80	+ 95 – 95	+110 –110	+125 –125	+145 –145
js 14	+125 –125	+150 –150	+180 –180	+215 –215	+260 –260	+310 –310	+370 –370	+435 –435	+500 –500	+575 –575
js 16	+300 –300	+375 –375	+450 –450	+550 –550	+650 –650	+800 –800	+950 –950	+1100 –1100	+1250 –1250	+1450 –1450
k 10	+ 40 0	+ 48 0	+ 58 0	+ 70 0	+ 84 0	+100 0	+120 0	+140 0	+160 0	+185 0
k 11	+ 60 0	+ 75 0	+ 90 0	+110 0	+130 0	+160 0	+190 0	+220 0	+250 0	+290 0
k 12	+ 90 0	+120 0	+150 0	+180 0	+210 0	+250 0	+300 0	+350 0	+400 0	+460 0
k 16	+600 0	+750 0	+900 0	+1100 0	+1300 0	+1600 0	+1900 0	+2200 0	+2500 0	+2900 0



Milling cutt

Hommel Hercules
Werkzeughandel

www.hhw.de



er selection guide

An overview of the milling
on the sides 17.14 - 17.17

Cutting materials and coatings

H22 FIRE	Solid carbide with Fire coating (TiAlN)
HSS ASP30	Powder steel alloy (ASP30 = manufacturer type)
HSS FUTURA	Heavy-duty high-speed steel with Futura coating (TiAlN)
HSS-Co8 TiCN	Heavy-duty high-speed steel with 8% cobalt (E) alloy and TiCN coating
HSS-E FIRE	Heavy-duty high-speed steel with 8% cobalt (E) alloy and Fire coating (TiAlN)
HSS-E OX	Heavy-duty high-speed steel with cobalt alloy, steam-tempered for reduction of built-up edges
HSS-E TOPFIRE	Heavy-duty high-speed steel with cobalt (E) alloy and Topfire coating (TiAlN)
HSS-E-PM Alcrona	Powder steel alloy with 8% cobalt and alcrona coating (TiAlN)
HSS-E-PM HARDLUBE	Powder steel PM-X with Hardlube coating
HSS-E-PM TiAlN	Heavy-duty high-speed steel with cobalt (E) powder steel alloy and TiAlN coating
VA-OX	Specially designed for machining VA (stainless steels), steam-tempered for the reduction of built-up edges
VHM	Solid carbide with diamond coating
VHM K10/K20	Solid carbide, ISO range K10/K20
VHM AlTiN	Solid carbide with aluminium-titanium nitride coating
VHM AluCC	Extremely close-contoured coating with sharp cutting edges and an extremely smooth surface
VHM Nacro	Solid carbide with special coating
VHM RockTec	Solid carbide with RockTec coating for 52 or 65 HRC
VHM TiAlN+C	Solid carbide with TiAlN coating and C coating
VHM TiAlN-Ultra	Solid carbide with Ultra coating (TiAlN)
VHM TiCN	Solid carbide with TiCN coating
VHM TOPFIRE	Solid carbide with Topfire coating (TiAlN)
VHM X.TREME	Solid carbide with X.treme coating (TiAlN)

Tolerance fields

6g	Shaft tolerance
6HX	Thread tolerance

Threads

M	Metric thread
MF	Metric fine thread
G	Pipe thread

UNC	Unified coarse thread
UNF	Unified fine thread
BSW	British Standard Whitworth thread
NPT	National pipe taper thread (for American standard tapered pipe thread)
PG	Armoured pipe thread
2-3 C	Notch shape for screw taps
≤2,5xD	Max. drilling depth for through hole screw taps
≤2,5xD	Max. drilling depth for blind hole screw taps

Shaft versions

DIN 371	Screw tap with reinforced shaft
DIN 376	Screw tap with overrun shaft
DIN 6535 HA	Straight shank, smooth
DIN 6535 HB	Straight shank with Weldon clamping surface
DIN 6535 HE	Straight shank with whistle notch surface
	With internal coolant supply

Type/profile (milling tools)

N	Finishing cutters
NR	Roughing profile (milling)
NR-Pro	Special roughing profile
NF	Roughing and finishing profile
H	Finishing cutter for hardened materials
HR	Fine roughing profile
W	Finishing cutter for aluminium
WR	Roughing profile for aluminium
	No centre cutting, face milling only possible over workpiece edge
	With centre cutting, immersion and face milling possible (in 3 directions)

Milling

	Face milling
	Angular milling
	Groove milling

Continued

Pictograph overview

Continued

Milling

	Pocket milling
	Contour milling
	Chamfer cutting
	Keyway cutting
	Drilling

Material strengths and areas of application

	Material hardness, Rockwell
	Strength, steel materials
	Strength, stainless steels
	Ideal for aluminium
	Ideal for grey cast iron
	Ideal for stainless, acid-resistant, heat-resistant and austenitic steels (V2A, V4A)
	Ideal for universal

Type (tool chucks)

A	Without through-bore
AD	With through-bore for central coolant supply
AD/B	With through-bore for central coolant supply and 2 bores on the tool collar for lateral coolant supply
B	With 2 bores on the tool collar for lateral coolant supply

Miscellaneous

HPC	High-performance cutting
HSC	High-speed cutting
1:50	Taper ratio
	Concentricity
	Spiral angle
	Tip angle
Z 3	Number of cutting edges, number of teeth
	Tool length overview
G 2,5 25000 1/min	Balancing quality

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T&C General terms and conditions of Hommel Hercules Werkzeughandel GmbH & Co. KG

Section 1
General information – Area of applicability

1. These terms and conditions apply to all of our present and future deliveries. They shall be considered to be agreed when the customer orders from our catalogue or if the customer accepts our order confirmation or delivery without objection. Our terms and conditions shall also apply if we, in awareness of conflicting or deviating terms and conditions of the customer, perform delivery to the customer without reservation.
2. These terms and conditions shall apply only to entrepreneurs as stipulated in Section 14 of the BGB (German Civil Code), legal entities under public law and special funds under public law.
3. Our terms and conditions shall also apply to all future transactions with the customer.

Section 2
Quotation and conclusion of contract

1. By placing an order, the customer makes a binding declaration that it wishes to purchase the ordered goods.
2. We shall be entitled to accept the offer to contract that is contained in the order within two weeks of receipt by us. Acceptance shall be declared either in writing or through delivery of the goods to the customer.
3. Our quotations are subject to change without notice. Illustrations, drawings, and weight and dimension specifications included with the quotation are only approximate unless they have been expressly designated as binding. We reserve the right to deviate from the information provided in brochures, illustrations or descriptions.
4. The contract shall be concluded subject to our receiving correct and timely deliveries from our suppliers. This proviso applies only in the event that we are not responsible for non-delivery, especially when concluding a congruent hedging transaction with our supplier. The customer will be informed of the non-availability of goods without delay. Any payment already made shall be reimbursed without delay.

Section 3
Prices – Terms of payment

1. Our prices apply ex warehouse, excluding packaging, which is invoiced separately.
2. Our list and catalogue prices are subject to change without notice. We reserve the right to increase our prices accordingly if cost increases occur between the conclusion of the contract and the delivery date, in particular due to collective wage agreements or material price increases.
3. Statutory value added tax is not included in our prices; it shall be shown separately on the invoice in the legal amount on the day the invoice is issued.
4. Payments shall be due and payable upon receipt of the delivery and invoice. Payment shall be made in cash without any deductions and free of all charges at our point of payment.
5. Cheques and bills of exchange shall be accepted on account of payment only; if bills of exchange are accepted, the bank discount and collection fees shall be charged. They are to be paid in cash immediately.
6. The deduction of a cash discount shall require special written agreement.
7. In the event of default regarding a payment obligation, if a bill of exchange or cheque is not honoured, or if circumstances become known that cast legitimate doubt on the financial solvency of the customer, all our receivables shall become due and payable in cash immediately, regardless of the payment deadlines or of the term of bills of exchange or postdated cheques. In such cases, we shall also be entitled to make any outstanding deliveries dependent on advance payments being made by the customer.
8. The customer shall not be entitled to set off against our claims for due payment, unless the customer's claims are the subject of a final court decision or are uncontested.
   The customer may exercise a right of retention only if the customer's counter-claim is based on the same contractual relationship.

Section 4
Delivery periods – Delay

1. Our delivery obligation shall be subject to the timely and proper fulfilment of the customer's obligations. We reserve the right to plead non-performance of the contract.
2. If the customer is in default of acceptance or culpably violates other obligations to co-operate, we shall be entitled to claim damages for any loss arising, including any additional expenses. The right to assert further claims shall be reserved. The risk of accidental loss or accidental deterioration of the object of sale shall pass to the customer at the time of the default of acceptance or default on debts.
3. If non-compliance with the delivery period is the result of force majeure, e.g. mobilisation, war, terrorism, riot or measures associated with labour disputes such as strikes or lock-outs, the delivery period shall be extended in accordance with the duration of these events.
4. Partial deliveries shall be permitted, insofar as they are reasonable for the customer.
5. For damages due to delay through our default in fulfilling the delivery obligation, the customer shall be entitled to demand an indemnification of 0.5% of the purchase price for each completed week of default, up to a maximum of 5% of the purchase price of the goods to be delivered by us.
6. Both claims for damages by the customer due to delivery delay and claims for damages in lieu of performance that exceed the limits defined in Section 5 shall be excluded in all cases of delayed delivery, even after the expiry of any deadline for delivery that we have set. This shall not apply if the delay in delivery is due to an intentional or grossly negligent breach of contract for which we are responsible. The exclusion or the limitation of liability shall not apply for damage arising from wrongful death, personal injury or health impairment of the customer.
7. The customer shall be obliged, upon our request, to declare within a reasonable period of time whether it wishes to withdraw from the contract due to delivery delays, or insists on delivery.

Section 5
Transfer of risk

1. The risk of accidental loss and accidental deterioration of the goods shall pass to the customer upon handover to the customer or, in the case of a sale involving the carriage of goods, upon transfer of the goods to the carrier, freight forwarder or other institutions specified for execution of delivery.
2. If the customer delays the acceptance of the goods, the transfer shall still be deemed to have taken place.
3. Transport insurance shall be taken out only at the request and expense of the customer.

Section 6
Warranty

1. We must be notified of obvious defects in writing within 2 weeks of receipt of the delivery; otherwise, the assertion of warranty claims shall be excluded. Defects which are not obvious must be reported to us in writing immediately after they are discovered, otherwise the assertion of warranty claims shall be excluded. Timely sending of notice of defect shall suffice to comply with the time limit. The customer bears the full burden of proof for all claims, in particular for the defect itself, the time that the defect was determined and for the timeliness of the notification of the defect.
2. If goods are defective, and subject to timely notification of said defects, we shall be liable in that we, at our discretion, shall either replace the defective goods or defective parts by means of an appropriate replacement, or repair the defective goods or parts.
3. In the event that subsequent fulfilment fails, the customer shall entitled at its discretion to request the reduction of the purchase price or to withdraw from the contract. The customer shall not be entitled to withdraw from the contract in the event of a minor infringement of the contract, particularly in the event of minor defects.
4. We shall be subject to mandatory liability as defined by law, insofar as the customer asserts claims for damages which are based on intent or gross negligence, including intent or gross negligence of our legal representatives or vicarious agents. Insofar as we are not charged with intentional or grossly negligent infringement of contract, liability for damage islimited to the foreseeable damage which typically occurs.
5. If the customer asserts claims for damage due to a slightly negligent breach of an essential contractual obligation, our liability for damages shall be limited to the foreseeable damage that is typical for the type of goods.
6. The warranty period shall be one year from delivery of the goods.
7. Only our product description or the product description of the manufacturer shall apply as agreed for the condition of the goods. Public statements, recommendations or advertising by the manufacturer shall not constitute contractually guaranteed characteristics of the goods.
8. We do not provide guarantees in the legal sense to our customers. Manufacturer's guarantees shall remain unaffected by this.

Section 7
German Electrical and Electronic Equipment Act (ElektroG)

1. The customer shall be obliged to return electrical and electronic equipment delivered by HHW to HHW at the customer's expense after discontinuing the use of the equipment. HWW shall properly dispose of or recycle the equipment in accordance with statutory regulations.
2. After discontinuing the use of the equipment, the customer shall be obliged neither to sell nor give away the equipment to private households, particularly not to employees.
3. If the equipment is passed on to commercial users, the customer shall ensure that an appropriate agreement is reached with the user to the effect that the equipment will be returned to HWW at the end of its useful life, as specified in point 1.

Section 8
Limitation of liability

1. In the event of slightly negligent contractual breaches, our liability shall be limited to the type of damage that is foreseeable and typical for goods of this type. This also applies to slightly negligent contractual breaches on the part of our legal representatives or vicarious agents.
2. We shall not be liable in the event of an insignificant, slightly negligent contractual breach.
3. The limitations of liability cited above and the limitations of liability set forth in Section 6 shall not affect the customer's claims arising from product liability. Moreover, the limitations of liability shall not apply should we be answerable for personal injury and heath hazards or loss of life of the customer.
4. The customer's claims for damages due to a defect of the goods shall become time-barred one year from the date of delivery of the goods. This shall not apply should we be answerable for personal injury and heath hazards or loss of life of the customer. Furthermore, the shortening of the limitation period shall not apply for the customer's claims for other damages that are based on a grossly negligent contractual breach by us or on an intentional or grossly negligent contractual breach on the part of one of our legal representatives or vicarious agents. The statutory limitation periods shall also apply for claims for damages under the German Product Liability Act.

Section 9
Reservation of title

1. We shall retain title to all goods supplied by us until all payment claims against the customer to which we are entitled are fulfilled. If we agree with the customer that the purchase price debt may be paid on the basis of the cheque-bill of exchange procedure, the retention of title shall also extend to the customer's honouring of the bill of exchange we accept, and shall not expire when the cheque amount is credited to our bank account.
2. If the customer is in breach of the contract, particularly if there is delay of payment, we shall be entitled to take back the delivered goods. If we take back the goods, this shall not be considered as withdrawal from the contract, unless we have expressly agreed this in writing. The customer hereby declares that it consents to the return of the goods and hereby authorises us to collect goods from its facilities. After taking back the goods, we shall be entitled to sell them; the proceeds from the sale shall then be credited against the customer's liability – less appropriate costs of sale.
3. The customer shall be obliged to treat the delivered goods with care; in particular the customer shall be obliged to sufficiently insure the goods against fire, water damage and theft at their replacement value at its own expense.
4. The customer shall be obliged to notify us in writing, without delay, of any pledges or other third-party interventions, so that we can assert our property rights. If the third party is not in a position to reimburse us for the judicial and extra-judicial costs incurred, then the customer shall be liable for the loss incurred by us.
5. The customer is entitled to resell the delivered goods in the regular course of business. However, the customer hereby assigns to us any receivables that accrue to the customer from the resale to his customers or third parties, in the full amount. We hereby accept this assignment. The customer shall remain entitled to call in this receivable even after the assignment. This shall not affect our authority call in claims ourself. If the customer defaults on payment, the customer shall be obliged to inform us of the assigned receivables and their debtors, to provide us with all information required for collection, to provide us with the associated documents and to inform the debtors of the assignment.
6. We shall be obliged to release the securities to which we are entitled at the customer's request, should their value exceed the claims to be secured by more than 20%. We reserve the right to choose the securities that shall be released.

Section 10
Data protection

1. The customer agrees and has been informed that all data relating to the customer arising from the business relationship, including personal and invoice-related data as stipulated in the German Federal Data Protection Act will be stored through our electronic data processing and will be forwarded only to authorised service providers and credit agencies in the course of processing an order.

Section 11
Place of performance – Jurisdiction

1. The place of performance for our delivery shall be the location of our subsidiary that executes or initiates the delivery. Our registered office shall be the place of fulfilment for all other claims arising from the contractual relationship.
2. If the customer is a merchant, then the place of jurisdiction shall be – at our discretion – either the location of our registered office or Mannheim. However, we shall also entitled to institute legal proceedings at the location of the customer's registered office.
3. If the customer is not a merchant, then the place of jurisdiction shall be the location of our registered office if the customer, after conclusion of the contract, transfers its domicile or place of habitual residence outside the area of application of the laws of the Federal Republic of Germany. This shall also apply if the customer's domicile or habitual place of residence is unknown when legal proceedings are instituted.

Section 12
Special production

1. In the case of special production, we reserve the right to provide excess or short deliveries of up to 15%. Orders concerning special types cannot be withdrawn. This shall also apply for articles manufactured in series production if they have been ordered with special characters or special lettering.

Section 13
Final provisions

1. The law of the Federal Republic of Germany shall apply. The provisions of the UN Convention on Contracts for the International Sale of Goods shall not apply.
2. Should individual provisions of the contract with the customer including these terms and conditions be ineffective, or become ineffective, in whole or in part, then the effectiveness of the remaining provisions shall remain hereby unaffected. The provision that is ineffective in whole or in part shall be replaced by a provision that most nearly approaches the economic intent of the ineffective provision.

Valid from 1 September 2019

INFORMATION

Publisher:
Hommel Hercules
Werkzeughandel GmbH & Co. KG

Editor:
Hommel Hercules Marketing division
Picture editing:
Hommel Hercules Marketing division

Employees:
Natalie Gottmann, Pia Heß, Christine Ibele,
Johann Sebastian Meyer, Marco Scholz,
Peter Vogel, Alexander Weerts

Typesetting and layout:
CityMedia Publishing ▌Offenbach/Queich

Ordering:
The order quantity and an 8-digit article number, e.g. 44554 101, are required.

Extended article numbers:
Since 01/2014, all HHW article numbers on invoices and delivery notes have been preceded by „10“.

Consultancy services:
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We ship ex works, express or overnight services are available upon request
- Minimum order value of 150 € applies.
- Additional charges for seaworthy packaging.

Returns:
We can only accept returned goods upon prior agreement with our office. We reserve the right to charge a processing fee

Appendix:
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Heidelberger Straße 52, 68519 Viernheim,
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DIN specifications refer to the DIN standards that were valid at the time the catalogue was printed.

We do not accept liability for printing errors.
Printed on chlorine-free, environmentally friendly paper.

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