Presenting

ATORN®

By HAHN+KOLB GROUP

ATORN. Performance demands quality.

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ATORN products are only stocked by selected vendors. At BUY PREMIUM TOOLS you'll find the complete ATORN range: Amongst over 24,000 products – everything you need for efficient and next-generation manufacturing.

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- ✓ Drilling tools
- ✓ Milling tools
- ✓ Lathe tools
- ✓ Clamping tools
- ✓ Sanding and cutting tools
- ✓ Measuring equipment
- ✓ Test equipment
- ✓ Workshop supplies and factory equipment

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Drilling tools

	Technical introduction – solid carbide / HSSE drilling
	Overview page for solid carbide drill
	Solid carbide high-performance drill, type UNI
	Solid carbide high-performance drill, type VA
	Solid carbide high-performance drill, type ALU
	Solid carbide high-performance deep-hole drill type UNI
	Solid carbide high-performance micro drill type UNI
	Solid carbide high-performance flat drill, 180° type UNI
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	Solid carbide high-performance drill 3-flute type UNI
	Solid carbide drill type N
	Overview page for centre drill
	Centre drill, type A
	Centre drill form B
	Centre drill, type R
	Centre drill, type W
	Overview page for NC spotting drill

Drilling tools

	90° NC spotting drill
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	Overview page for twist drill
	Twist drill type U4 for universal use up to 1300 N/mm²
	Twist drill type N for universal use up to 1000 N/mm²
	HSSE Co8 twist drill type NV for high-strength use from 700 N/mm²
	HSS/HSSE twist drill type TLP with deep-hole profile
	HSSE twist drill type VA for stainless steel machining
	HSSE-PM twist drill type X for universal use up to 1300 N/mm²
	HSSE-PM micro twist drill type UNI for universal use
	HSSE twist drill Multi for portable use
	Core drills
	Twist drill sets, HSS/HSSE
	Twist drill HSS/HSSE morse taper shank
	Stepped drill bits
	Processing and machining technology - SC/HSSE drilling

Drilling tools with indexable inserts

Overview page for indexable insert drills


Indexable tools for drilling and countersinking

Processing and machining technology - Indexable insert drilling

Countersinking tools

Overview page for countersinking tools


SC conical countersink 90°


HSS/HSSE conical countersink 90°


SC conical countersink 60°


HSS/HSSE conical countersink 60°


HSS conical countersink 75°


HSS conical countersink 120°


Hand countersink


pipe deburrers


SC deburrer


Conical countersink with fixed pilot


Counterbore with fixed pilot

Countersinking tools


step drill

Reaming tools

Technical introduction – reaming

Overview page for reaming


SC HPC machine reamers


solid carbide machine reamers H7


solid carbide machine reamers 1/100 mm


HSSE machine reamers H7


HSSE machine reamers 1/100 mm


solid carbide machine reamers with selectable diameter and fit


HSSE machine reamers with selectable diameter and fit

HSS/HSSE rivet hole and quick-helix reamers


HSS hand reamers

Processing and machining technology - Reaming

Thread tools

Technical introduction – female thread production

Technical introduction – thread tapping

Thread tools

	Machine tap overview page
	Machine tap M
	Machine taps MF
	Machine tap G
	Machine tap PG
	Machine tap UNC/UNF
	Machine tap NPT
	Hand tap BSW
	Hand tap G
	Hand tap M
	Hand tap MF
	Hand tap UNC/UNF
	Technical introduction – thread forming
	Overview page - thread forming
	Thread formers M
	Thread former MF
	Thread former G

Thread tools

	Technical introduction – thread milling
	Overview page for thread milling cutters
	Multi-range thread milling cutter
	Micro-thread milling cutter
	multi-range thread milling cutter with countersink
	Thread milling cutter with cutting inserts
	Thread-cutting sets
	Screw tap extractors
	overview: threading dies
	Threading die G
	Threading die MF
	Threading die UNC/UNF
	Threading die NPT
	Threading die BSW
	Threading die M

Thread tools



REMS die stocks and threading machines



Core hole tables, thread cutting, thread forming, thread milling

Machine sawing tools



Technical introduction – metal circular saw blades



Solid carbide metal circular saw blades, shape A



Metal circular saw blades with solid carbide elements



Technical introduction – metal bandsaw blades

Machine sawing tools



Bandsaws ATORN TYPE UNI



Processing and machining technology - Sawing

Milling tools monoblock



Technical introduction – monobloc milling



Overview page for solid carbide tools



Labelling and marking tools



Solid carbide mills for universal machining



HPC POWER solid carbide mill



Solid carbide mill for trochoidal machining



Solid carbide mills for machining aluminium



Solid carbide mills for machining graphite



Solid carbide mills for machining stainless steel



Solid carbide mills for machining steel up to 52 HRC



Solid carbide mills for machining hard materials up to 65 HRC



Overview page of HSSE/ HSSE PM tools



HSSE form milling tool

Milling tools monoblock


HSSE/PM bore mill


HSSE/PM end mill

Modular milling tools


Solid carbide interchangeable head system

Technical introduction – modular milling

Overview page – indexable inserts


Face milling cutters


Angular milling cutter


Angular milling cutter and plunge mill


High-feed milling cutter

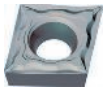

Face and copy milling cutters

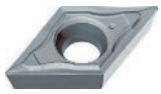

Disc milling cutter


Chamfer and special milling cutters

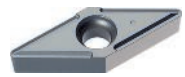
Turning tools

Technical introduction – turning - ISO turning


CC.. ISO indexable inserts, positive


DC.. ISO indexable inserts, positive

Turning tools


VB.. ISO indexable inserts positive(2)


RC.. ISO indexable inserts, positive


VC.. ISO indexable inserts, positive


SC.. ISO indexable inserts, positive


CN.. ISO indexable inserts, negative


DN.. ISO indexable inserts, negative


SN.. ISO indexable inserts, negative


TN.. ISO indexable inserts, negative


VN.. ISO indexable inserts, negative


WN.. ISO indexable inserts, negative


TC.. ISO indexable inserts, positive

Technical introduction – CBN turning


Indexable inserts CBN

Technical introduction – PCD turning

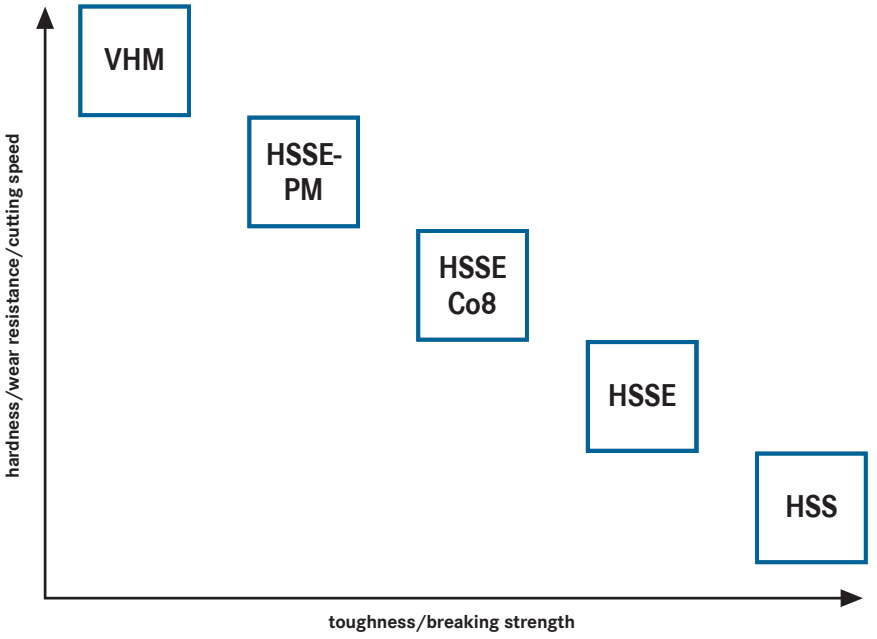

Indexable inserts PCD

Technical Information/ standard sheet, ISO holder

Turning tools

	Overview page for ISO holders
	ISO clamp holders for external machining
	Technical info / standard ISO boring bars
	Overview page for ISO drilling bars
	Info – boring bars
	ISO clamp holders for internal machining
	5-in-1 turning and drilling tools
	Miniature turn-out programme D=1-10 mm
	Miniature boring range, front end D=8-13 mm
	Miniature boring range with indexable insert from Dmin=4.8 mm
	Thread-cutting range
	Cutting system 3-blade cutting insert
	Parting tools

drilling tools cutting materials



Solid carbide
- Very high hardness
- Cutting material for application up to 65 HRC
- Very high cutting speed
- High precision

HSSE-PM high-speed steel powder metal
- Cutting material for applications up to 1300 N/mm^2
- Medium to high cutting speeds
- Highly elastic

HSSE Co8 high-speed steel
- Cutting material for applications up to 1300 N/mm^2
- Medium to high cutting speeds
- approx. 8% cobalt content
- Extremely high elasticity

HSSE high-speed steel
- Cutting material for applications up to 1300 N/mm^2
- Low to medium cutting speeds
- Approx. 5% cobalt content
- Extremely high elasticity

HSS high-speed steel
- Cutting material for applications up to 1000 N/mm^2
- Low cutting speeds
- Low alloy content
- Extremely high elasticity

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

drilling tools coatings

titanium nitride

TiN



- universal layer for machining ferrous metals and steel materials
- very high cutting speed, high level of precision
- high level of hardness and adhesion
- good resistance to chemicals
- low edge rounding
- good temperature resistance in air
- relatively low thermal conductivity
- titanium nitride has a low level of reactivity toward ferrous metals. tool wear through galling is therefore significantly reduced.

technical data:

- Vickers hardness: 2200-2300 HV
- friction coefficient: 0.5
- temperature resistance: 500-600°
- colour: gold
- coating process: PVD

titanium aluminium nitride

TiAlN



- universal layer for high-performance machining with high cutting speed
- marked thermal and chemical stability
- dry machining
- very high hardness
- very good heat resistance
- relatively low thermal conductivity

technical data:

- Vickers hardness: 3200 HV
- friction coefficient of steel: 0.55
- temperature resistance: 900-1000°
- colour: dark blue-grey
- coating process: PVD

TiNAlOX

TiNAlOX



- universal layer for high-performance machining with high cutting speed
- can be classed as a multi-range coating as it can be used in a wide range of applications from steel machining, to machining of stainless steels right through to cast iron machining with a high level of success
- extremely smooth
- thermally and chemically very stable
- very high hardness
- very good heat resistance
- relatively low thermal conductivity

technical data:

- Vickers hardness: 3500 HV
- friction coefficient of steel: 0.5
- temperature resistance: 1000–1100°
- colour: violet-blue
- coating process: PVD

TiAlN Plus

TiAlN plus



- universal layer for high-performance machining of steels and cast iron
- wear-resistant multi-layer coating
- extremely smooth
- marked thermal and chemical stability
- very high hardness
- good heat resistance

technical data:

- Vickers hardness: 3300 HV
- friction coefficient of steel: 0.6
- temperature resistance: 800°
- colour: grey-violet
- coating process: PVD

ULTRA M

ULTRA M



- special layer for high-performance machining of stainless steel and steel
- wear-resistant multi-layer material
- extremely smooth
- marked thermal and chemical stability
- very high hardness
- very good heat resistance

technical data:

- Vickers hardness: 3400 HV
- friction coefficient of steel: 0.55
- temperature resistance: 900°
- colour: grey-violet
- coating process: PVD

CC

CC



- special coating for high-performance machining of non-ferrous metals
- thanks to the low affinity for non-ferrous metals, built-up edges are a thing of the past
- high level of hardness makes CC extremely resistant to abrasion
- sharp cutting
- low affinity to non-ferrous metals
- extremely smooth
- thermally and chemically very stable
- very high hardness
- very good heat resistance

technical data:

- Vickers hardness: 4000 HV
- friction coefficient of steel: 0.55
- temperature resistance: 900°
- colour: silver
- coating process: PVD

drilling tools geometries

HPC UNI

grinding/geometry:
- tip angle 140°
- 2-surface grinding
- spiral angle 30°
- 2 drill heels on 3xD and 5xD
- 4 drill heels on 8xD and 12xD
- dia. tolerance h7 or m7



advantages:
- these geometries are specially developed for universal use
- the various coatings with cutting edge preparation prevents micro-breakouts on the blades, thereby increasing their service life

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HPC VA

grinding/geometry:
- tip angle 140°
- for HPC drilling in the material groups stainless steel, titanium, nickel and special alloys
- 2-surface grinding
- spiral angle 30°
- 2 drill heels
- dia. tolerance h7



advantages:
- specially developed geometry for machining stainless steel, titanium, nickel alloys and special alloys
- Ultra M coating with cutting edge preparation prevents micro-breakouts on the blades, thereby increasing the service life

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HPC ALU

grinding/geometry:
- for HPC drilling in non-ferrous metals
- tip angle 135°
- spiral angle 15°
- 6 drill heels
- dia. tolerance h7



advantages:
- specialised use with long service life in non-ferrous metals such as aluminium, brass, bronze and cast iron
- 6 drill heels ensure even at very high cutting speeds for a drilling accuracy
- latest ALU-CC coating technology with superior form-fitting properties of the blade ensures sharp cutting edges and excellent sliding behaviour as well as optimum chip removal even at high cutting speeds

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Typ U4

grinding/geometry:
- tip angle: 118°
- spiral angle: 38°
- precision-ground 4-surface grinding
- optimised point thinning similar to cross grinding
- straight main cutter



cutting material:
- HSSE: HSS steel with 5% cobalt alloy with greater hot hardness for increased loads

advantages:
- suitable for a wide range of applications thanks to the universal geometry design
- high level of process reliability through precision grinding
- extremely good centring properties thanks to the 4-surface grinding with point thinning results similar to cross-grinding (no centring required)
- low process forces (feeding force and torque) through optimised flute profile
- extremely precise, dimensionally accurate drilling in terms of the diameter and the roundness through smooth geometry design

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Typ **N**

grinding/geometry:

- tip angle: 118°
- spiral angle 30°
- cone polished section



cutting material:

- Universal HSS steel cutting material, for alloyed and unalloyed steels up to 1000 N/mm², steel casting, cast iron and iron alloys

Benefits:

- Suitable for a wide range of applications thanks to the universal geometry design
- Minimises tool costs
- Can be put to flexible use on both conventional and CNC machines, even in unstable conditions
- Low hardness, resulting in a high breaking strength

Typ **TLP**

Grinding/geometry:

- cone polished section 130°
- spiral angle 38°
- point thinning type A

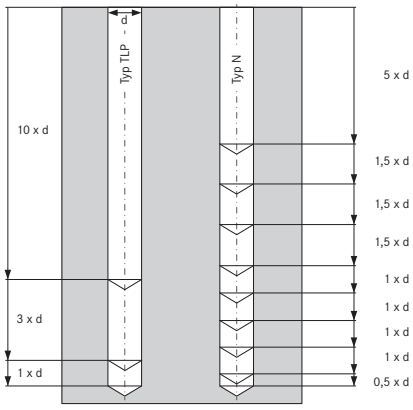


cutting material:

- Universal HSS steel cutting material, for alloyed and unalloyed steels up to 1000 N/mm², steel casting, cast iron and iron alloys
- HSSE: HSS steel with 5% cobalt alloy with greater hot hardness for increased loads up to 1300 N/mm²

Benefits:

- optimised flute profile for drilling deep holes in unfavourable conditions, such as insufficient cooling and poor chip removal
- depths of up to 25XD can be achieved
- special geometry for drilling long-chipping materials
- deep hole profile for optimising chip removal at greater drilling depths without the need for venting
- extremely good chip removal thanks to the size of the chipping space



Typ **NV**

grinding/geometry:

- spiral angle: 20°
- cross grinding: 135°
- point thinning ≥ 1.0 mm



cutting material:

- HSSE Co8%-alloyed steel for increased hot hardness

advantages:

- robust drill geometry for high alloy, high-strength materials from 700 N/mm²
- reinforced core
- for use on conventional and CNC machines

Typ VA

grinding/geometry:

- cone polished section 130°
- spiral angle 35°
- point thinning type C
- increased core diameter



cutting material:

- HSSE: HSS steel with 5% cobalt alloy with greater hot hardness for increased loads up to 1300 N/mm²

advantages:

- positive geometry specially developed for use in stainless steel and special alloys
- special geometry with aggressive cutter design and free geometry for very smooth cutting

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Typ X

grinding/geometry:

- tip angle 130°
- precision-ground cone polished section + combination of point thinning types A/B
- cutting angle adjustment through type B point thinning element, ensuring a strong, stable cutting edge
- straight main cutter



cutting material:

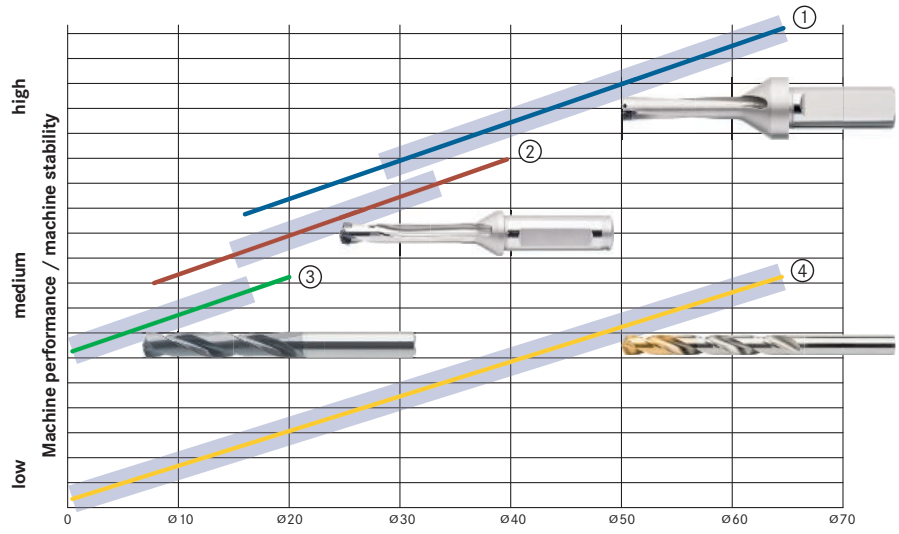
- HSSE-PM steel offers highest level of wear resistance through powder-metallurgical steel
- extremely dense, homogeneous structure
- increased hardness and heat resistance
- high level of wear resistance and cutting edge stability

advantages:

- highest level of wear resistance and heat resistance through HSSE-PM cutting material and TiN coating
- economic drill that closes the gap between a standard HSS drill and a VHM drill for medium-strength materials and moderate batch sizes
- high cutting edge stability and robust drill design thanks to cone polished section with type A/B point thinning and optimised parabolic flute profile
- high process reliability thanks to the homogeneous structure of the HSSE-PM steel

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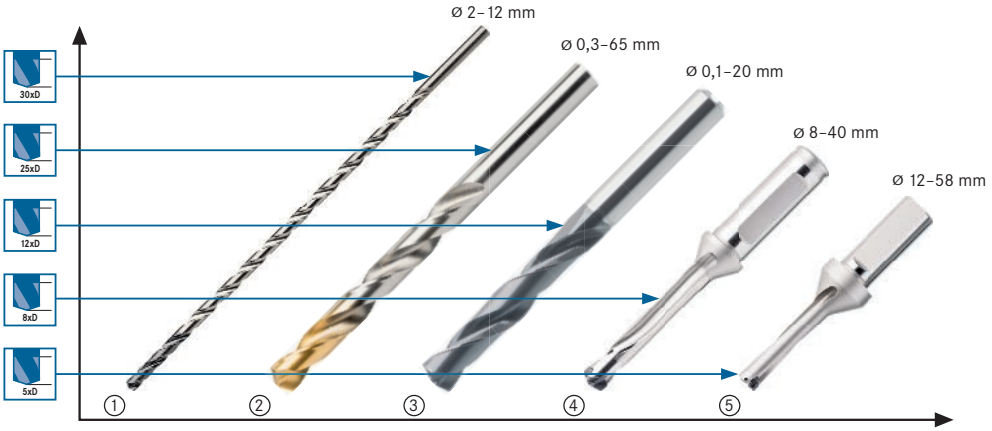
economical range of different drill technologies



① indexable insert drill
② indexable insert drill
③ SC HPC drill
④ HSS/HSSE drill

= efficiency range depending on the diameter

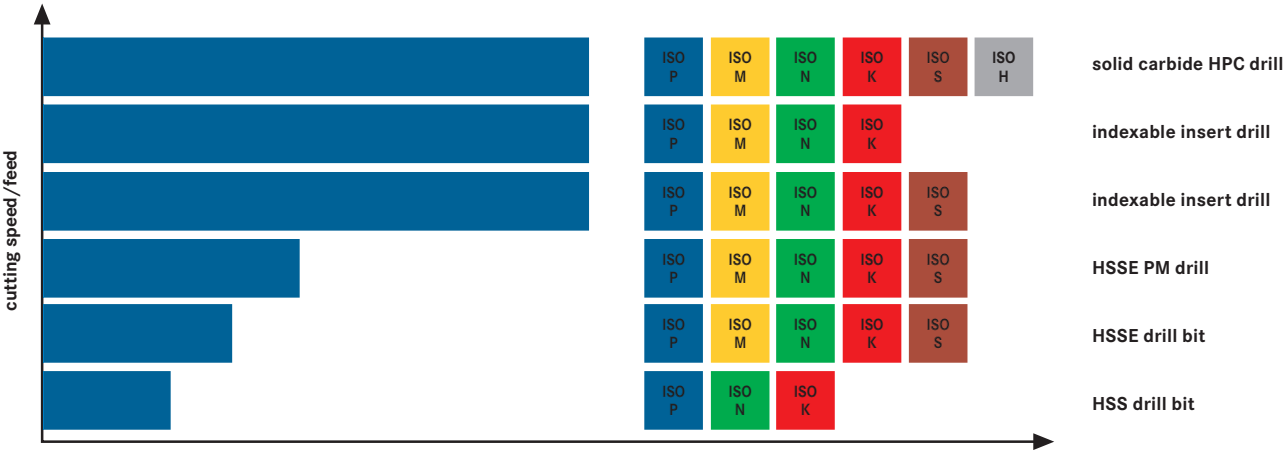
tool type selection according to length and diameter



selection of small to medium-sized drill bit diameters
four different drill technologies are available for selection according to diameter and borehole depth.

① SC HPC deep hole drill
② HSS/HSSE drill
③ SC HPC drill
④ indexable insert drill
⑤ indexable insert drill

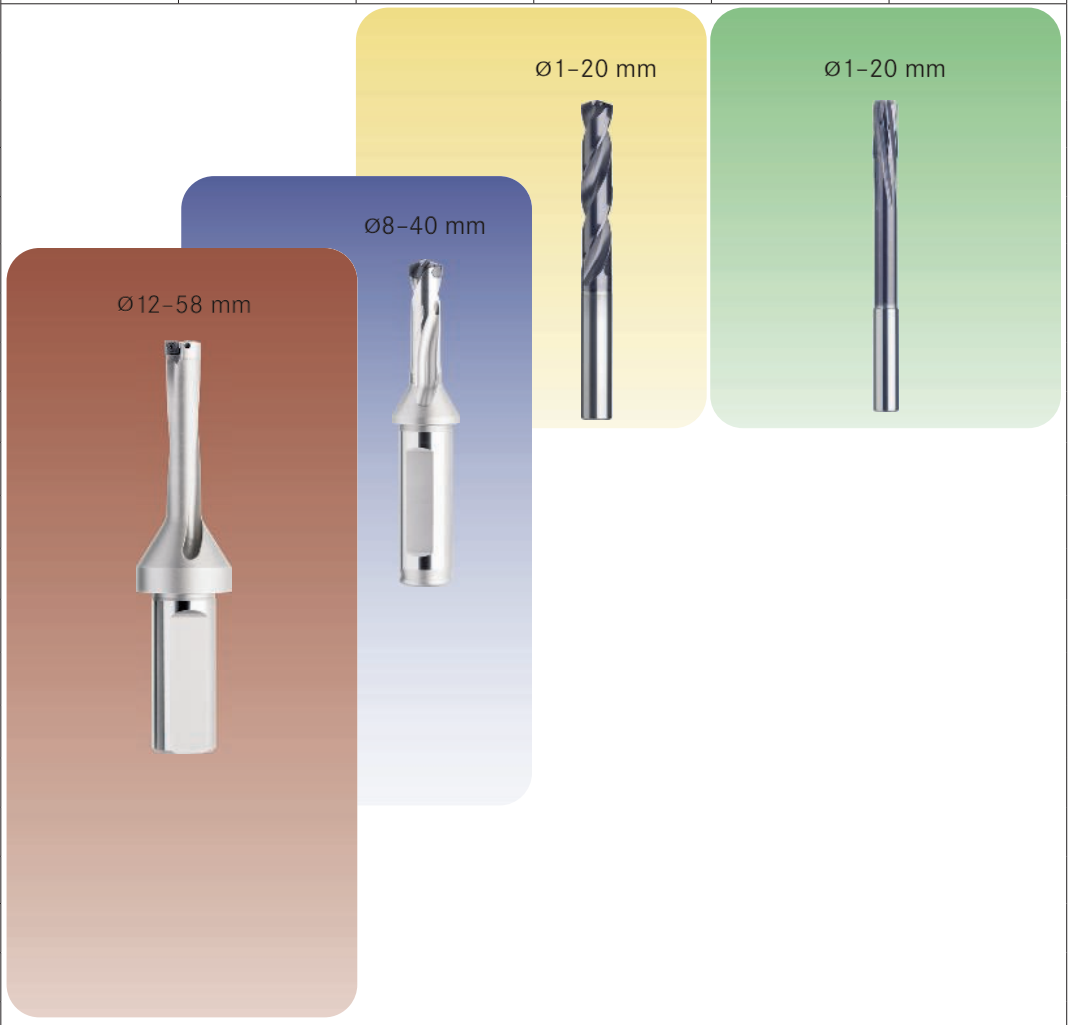
cutting speed/service life/material group diagram



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

bore types and surfaces

	machining type	rough machining		medium finishing		smoothing	
	hole quality	IT11	IT10	IT9	IT8	IT7	IT6
solid drilling/reaming	bore ø						
	1 mm						
	3 mm						
	6 mm						
	9 mm						
	12 mm						
	15 mm						
	18 mm						
	21 mm						
	24 mm						
	27 mm						
	30 mm						
	33 mm						
	36 mm						
	39 mm						
	42 mm						
	45 mm						
	48 mm						
	51 mm						
	54 mm						
	57 mm						
	60 mm						
	63 mm						
	66 mm						
	69 mm						



Clamping device recommendation for SC drills



	Standard collet chucks	precision collet chuck	Shrink-fit chucks	Hydro-expansion chucks	Surface chuck
					
Holding torques	◎	◎	◎	◎	●
concentricity	◎	◎	●	●	○
Vibration-reducing	◎	◎	○	●	○
Speed/balancing quality	◎	●	●	●	○
internal cooling	Yes	Yes	Yes	Yes	Yes
Overall rating	**Well-suited**	**Highly suitable**	**Highly suitable**	**Highly suitable**	**limited suitability**

● = very well suited ◎ = suitable ○ = limited suitability

Clamp method recommendation for HSS/HSSE/HSSE-PM drill



	Standard collet chucks	Precision collet chucks	Drill chucks
			
Holding torques	◎	◎	◎
Concentricity	◎	●	◎
Vibration-reducing	●	●	○
Speed/balancing quality	●	●	◎
Overall rating	**Well suited**	**Very well suited**	**Well suited**

● = Very well suited ◎ = Suited ○ = Limited suitability

high-performance drill solid carbide TiAlN Plus range
for universal use up to 1300 N/mm²

application:
for HPC bore machining up to a strength of 1300 N/mm²

advantage:
- economic drilling in a wide variety of materials with high cutting values
- newly-developed geometry combined with a drilling-specific multi-layer coating ensures a significantly longer service life
- cutting edge finishing reduces micro-fractures and increases the service life
- very extensive range from Ø1.00 mm – Ø20.00 mm in 3xD–12xD
- core hole dimensions available for thread tapping and thread forming
- 3xD + 5xD with and without internal coolant supply






TiAlN plus

HPC UNI

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11102010-212	1.0-20.0 mm	Internal	HA parallel shank	3xD	●	●	●	○	●	○		
11102204-400	3.0-20.0 mm	Internal	HB parallel shank	3xD	●	●	●	○	●	○		
11104010-212	1.0-20.0 mm	External	HA parallel shank	3xD	●	●	●	○	●	○		
11104230-400	3.0-20.0 mm	External	HB parallel shank	3xD	●	●	●	○	●	○		
11105010-218	1.0-20.0 mm	Internal	HA parallel shank	5xD	●	●	●	○	●	○		
11105230-400	3.0-20.0 mm	Internal	HB parallel shank	5xD	●	●	●	○	●	○		
11108030-200	3.0-20.0 mm	Internal	HA parallel shank	8xD	●	●	●	○	●	○		
11110030-200	3.0-20.0 mm	Internal	HA parallel shank	12xD	●	●	●	○	●	○		

high-performance solid carbide TiNAlOX drills
For universal use up to a hardness of 63 HRC

Application:
For HPC boring up to 63 HRC.
advantage:
- Universal application up to a hardness of 63 HRC
- Latest coating technology: Unique, extremely hard, low-friction, temperature-resistant and form-fitting TiNAlOX coating ensures extra service life and added process stability.
- Cutting edge preparation minimises micro-fractures on the cutter






TiNAlOX

HPC UNI

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11183	3.0-20.0 mm	External	HB parallel shank	3xD	●	●	●	○	●	○	●	
11184	3.0-20.0 mm	Internal	HB parallel shank	3xD	●	●	●	○	●	○	●	
11188	3.0-20.0 mm	Internal	HB parallel shank	5xD	●	●	●	○	●	○	●	

Solid carbide TiAlN high-performance drill range

Application:
For HPC boring up to a strength of 1300 N/mm².
advantage:

- universal high-performance tool with excellent price-performance ratio
- wide range of 3xD to 12xD
- 3xD + 5xD with and without internal coolant supply






TiAlN

HPC UNI

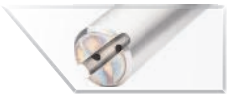
	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11173	3.0-20.0 mm	External	HB parallel shank	3xD	●	●	○	○	●	○		
11174	3.0-20.0 mm	Internal	HB parallel shank	3xD	●	●	○	○	●	○		
11176230-403	3.0-20.0 mm	External	HB parallel shank	5xD	●	●	○	○	●	○		
11177	1.0-20.0 mm	Internal	HA parallel shank	5xD	●	●	○	○	●	○		
11177	1.0-20.0 mm	Internal	HB parallel shank	5xD	●	●	○	○	●	○		
11178	3.0-16.0 mm	Internal	HB parallel shank	8xD	●	●	○	○	●	○		
11179230-360	3.0-16.0 mm	Internal	HB parallel shank	12xD	●	●	○	○	●	○		

Ultra M solid carbide high-performance drill range

Application:
For HPC boring in the stainless steel, titanium, nickel and special alloy material groups.
advantage:

- special HPC cutter geometry: innovative cutter geometry with extremely smooth cutting blade and very high service life
- latest coating technology: newly developed form-fitting ULTRA M coating for extra service life and added process stability
- cutting edge preparation minimises micro-fractures on the cutter



ULTRA M

HPC VA

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11142030-601	3.0-20.0 mm	Internal	HA parallel shank	3xD			●			●		
11142204-603	3.0-20.0 mm	Internal	HB parallel shank	3xD			●			●		
11147030-203	3.0-20.0 mm	Internal	HA parallel shank	5xD			●			●		
11147204-400	3.0-20.0 mm	Internal	HB parallel shank	5xD			●			●		

Solid carbide ALU CC high-performance drill range

Application:
For HPC boring in the non-ferrous metals and cast iron material groups in series production.
advantage:

- innovative cutting geometry with 15° twist angle ensures optimum chip removal
- 6 drill heels ensure drilling accuracy even at high cutting speeds
- latest ALU-CC coating technology with superior form-fitting properties of the blade ensures sharp cutting edges and excellent good sliding behaviour as well as optimal chip removal






CC

HPC ALU

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11158	2.5-20.0 mm	Internal	HA parallel shank	5xD				○	●			
11159	2.5-20.0 mm	Internal	HA parallel shank	8xD				○	●			

high-performance drill, solid carbide TiAlSiN HPC 3xD
for hard machining up to 65 HRC

application:

for HPC boring up to 65HRC

advantage:

- high centring accuracy
- special coating for drilling hardened steels up to 65 HRC
- extremely hard, low-friction and temperature-resistant TiASiN coating for longer service life
- reinforced core with special tip and cutting chisel edge





TiAlSiN

HPC HART

high-performance deep-hole drill range – 16-30XD

Application:
For HPC deep-hole boring up to a strength of 1300 N/mm².
advantage:

- angle and diameter are co-ordinated across the whole range
- very good all-round properties and precise cutting behaviour with high cutting rates
- very good chip removal and chip control through by polished chipping space
- state-of-the-art coating technology ensures a long service life in the series
- high boring precision thanks to newly developed drill heels
- cutting edge preparation minimises micro-fractures on the cutter
- available in 40xD and 50xD on request






TiAlN

HPC UNI

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11181202-442	2.02-12.02 mm	Internal	HA parallel shank	5xD	●	●	○	○	●	○		
11179430-520	3.0-12.0 mm	Internal	HA parallel shank	16xD	●	●	●	○	●	○		
11181020-120	2.0-12.0 mm	Internal	HA parallel shank	20xD	●	●	●	○	●	○		
11189230-320	3.0-12.0 mm	Internal	HA parallel shank	25xD	●	●	○	○	●	○		
11182	2.0-12.0 mm	Internal	HA parallel shank	30xD	●	●	○	○	●	○		

high-performance solid carbide micro drill

Application:
For HPC micro boring up to a strength of 1300 N/mm².

advantage:
- extremely hard, low-friction, temperature resistant and conforming coating ensures an increased service life
- high-quality solid carbide cutting material and cutting edge preparation minimise breakouts on the blade
- diameter of 0.10 mm to 3.00 mm
- uncoated variant for non-ferrous metals






TiAlN

HPC UNI

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11137010-300	0.1-3.0 mm	External	HA parallel shank	5xD	●	●	●	○	●	●		
11137310-600	0.1-3.0 mm	External	HA parallel shank	5xD	○	○	○	●	○	○		

high-performance drill 180° solid carbide TiAlN



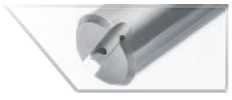





applications:
for producing drill holes with 180° base of bore hole.

advantages:
- spot drilling on inclined surfaces
- spot drilling on convex surfaces
- spot drilling despite centre waste
- spot drilling in existing drill holes
- drilling through cross holes



TiAlN

HPC UNI

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11168201-400	3.0-20.0 mm	Internal	HA parallel shank	5xD	●	●		○	●		

Solid carbide TiAlN high-performance drill reamer range

Application:

For producing clearance bore holes up to a strength of 1300 N/mm².

advantage:
- drilling and reaming in one work step, ensures high profitability
- innovative cutting geometry with 6 drill heels ensures high bore hole quality
- long service life owing to high-quality cutting material and coating






H7

TiAlN

HPC

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	K	
11175380-446	3.98-20.0 mm	Internal	HA parallel shank	5xD	●	●	●	

Solid carbide TiNALOX high-performance clearance drill

Application:

HPC special geometry for producing clearance bore holes in H7 quality.

advantage:

- high boring precision owing to 4 drill heels even at high cutting speeds
- innovative coating technology ensures increased service life





H7 | TiNAlOX | HPC UNI

	Ø	Kühlung	Schaft	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11176	3.0-20.0 mm	Internal	HA parallel shank	5xD	●	●	●	○	●	○	

solid carbide drill 3-blade

Application:
for precise position and shape drilling into the main body.
advantage:

- special geometry with 3 cutting edges: innovative cutting geometry for precise position and shape drilling into the main body without centring
- universal application: wide range of cemented carbide qualities and geometries for wide-ranging applications, therefore longer service life and high process stability





TiN | Z 3

	Ø	Coolant supply	Tool holding device	Max. drilling depth (D)	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11164	3.0-10.2 mm	External	HA parallel shank	5xD	○	○	○	○	○		
11166	3.0-10.2 mm	External	HA parallel shank	5xD	○	○			○		
11167	3.0-10.2 mm	External	HA parallel shank	5xD	○	○	○	○	○		

Twist drill, solid carbide, TYPE N range

Application:
Standard geometry for use up to a strength of 1300 N/mm².
advantage:

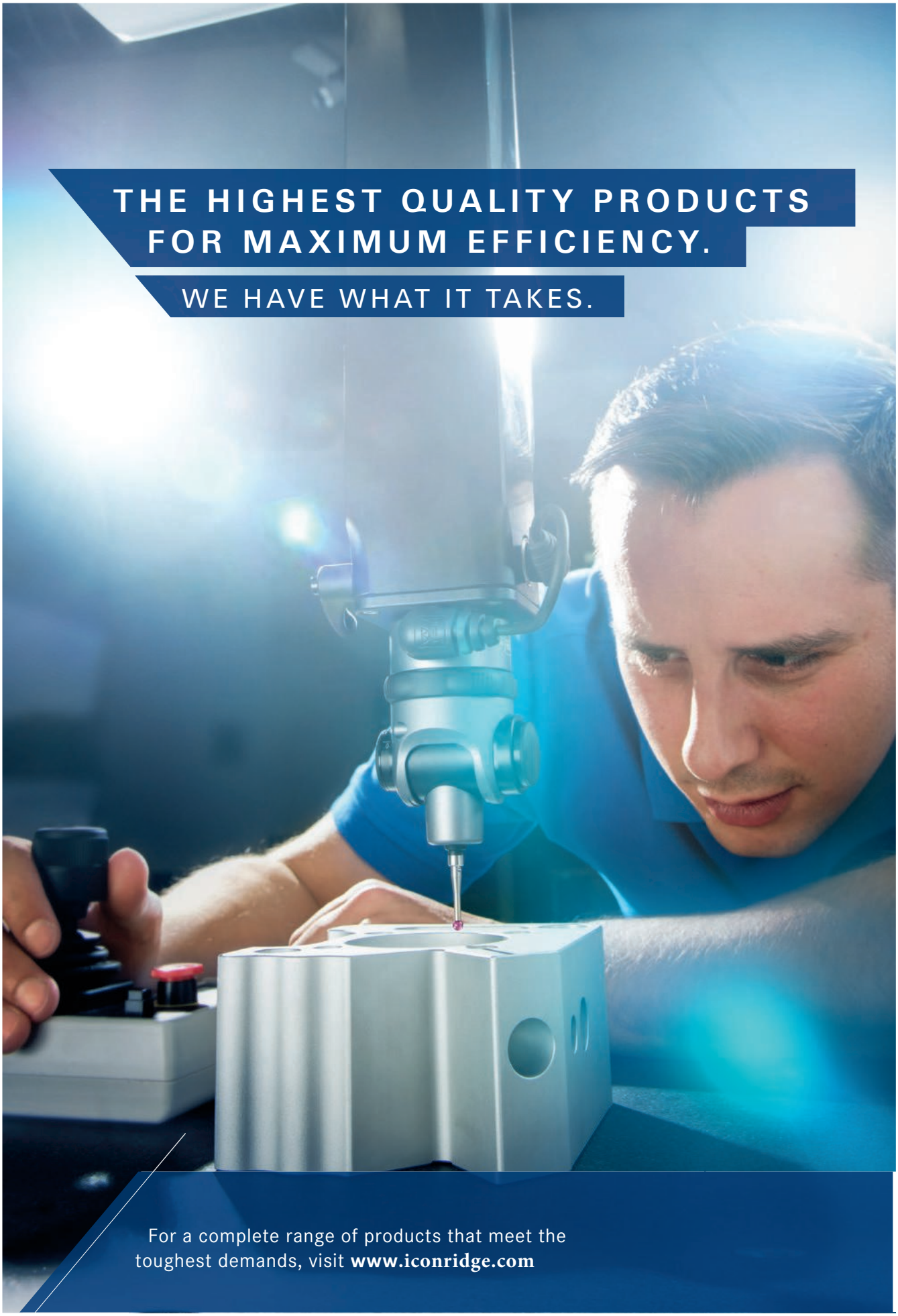
- excellent all-round properties and precise cutting behaviour in a wide range of materials
- universal application: minimises tool costs and improves flexibility
- high-quality cutting material and cutting edge preparation minimise micro-fractures on the cutter





Typ N | TiAlN

	Ø	Max. drilling depth (D)	Coolant supply	Tool holding device	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11150	0.5-16.0 mm	3xD	External	HA parallel shank	●	●	○	●	●	○	
11153	0.5-16.0 mm	3xD	External	HA parallel shank	●	●	○	●	●	○	
11155	1.0-13.0 mm	5xD	External	HA parallel shank	●	●	○	●	●	○	
11157	1.0-13.0 mm	5xD	External	HA parallel shank	●	●	○	●	●	○	



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

high-performance drill solid carbide TiAlN Plus range
for universal use up to 1300 N/mm²

application:
for HPC bore machining up to a strength of 1300 N/mm²

advantage:
- economic drilling in a wide variety of materials with high cutting values
- newly-developed geometry combined with a drilling-specific multi-layer coating ensures a significantly longer service life
- cutting edge finishing reduces micro-fractures and increases the service life
- very extensive range from Ø1.00 mm – Ø20.00 mm in 3xD–12xD
- core hole dimensions available for thread tapping and thread forming
- 3xD + 5xD with and without internal coolant supply






TiAlN plus | HPC UNI

ATORN® high-performance drill, solid carbide TiAlN plus HPC 3xD with internal cooling (DIN 6537)

for universal use up to 1300 N/mm²

VHM | TiAlN plus | 3xD | HPC UNI | 140° | IK | HA | HB

HIGHLIGHT


Ident. No. 010–203, 207–211


Ident. No. 204–206, 230–400

Application:
for HPC boring up to a strength of 1300 N/mm²

Execution:
- solid carbide TiAlNplus high-performance drill

Advantage:
- economic drilling in a wide variety of materials with high cutting values
- newly developed geometry in conjunction with a multi-layer coating individually tailored to drilling ensures significantly longer service lives
- Cutting edge finishing reduces micro-fractures and increases the service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11102010-212	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		
11102204-400	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11102... Ident. No.		11102... Ident. No.	
1.0	4	7	45	0.025	010	●	-	-
1.1	4	7	45	0.025	011	●	-	-
1.2	4	7	45	0.025	012	●	-	-
1.3	4	7	45	0.025	013	●	-	-
1.4	4	7	45	0.025	014	●	-	-
1.5	4	14	55	0.033	015	●	-	-
1.6	4	14	55	0.033	016	●	-	-
1.7	4	14	55	0.033	017	●	-	-
1.8	4	14	55	0.033	018	●	-	-
1.9	4	14	55	0.033	019	●	-	-
2.0	4	20	55	0.045	020	●	-	-
2.1	4	20	55	0.045	021	●	-	-
2.2	4	20	55	0.045	022	●	-	-
2.3	4	20	55	0.045	023	●	-	-
2.4	4	20	55	0.045	024	●	-	-
2.5	4	20	55	0.045	025	●	-	-
2.6	4	20	55	0.045	026	●	-	-
2.7	4	20	55	0.045	027	●	-	-
2.8	4	20	55	0.045	028	●	-	-
2.9	4	20	55	0.045	029	●	-	-
3.0	6	20	62	0.16	030	●	230	●
3.1	6	20	62	0.16	031	●	231	●
3.2	6	20	62	0.16	032	●	232	●
3.25	6	20	62	0.16	201	●	204	●
3.3	6	20	62	0.16	033	●	233	●
3.4	6	20	62	0.16	034	●	234	●
3.5	6	20	62	0.16	035	●	235	●
3.6	6	20	62	0.16	036	●	236	●
3.7	6	20	62	0.16	037	●	237	●
3.8	6	24	66	0.16	038	●	238	●
3.9	6	24	66	0.16	039	●	239	●
4.0	6	24	66	0.16	040	●	240	●
4.1	6	24	66	0.16	041	●	241	●
4.2	6	24	66	0.16	042	●	242	●
4.3	6	24	66	0.16	043	●	243	●
4.4	6	24	66	0.16	044	●	244	●
4.5	6	24	66	0.16	045	●	245	●
4.6	6	24	66	0.16	046	●	246	●
4.65	6	24	66	0.16	202	●	205	●
4.7	6	24	66	0.16	047	●	247	●
4.8	6	28	66	0.16	048	●	248	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11102... Ident. No.		11102... Ident. No.	
4.9	6	28	66	0.16	049	●	249	●
5.0	6	28	66	0.16	050	●	250	●
5.1	6	28	66	0.16	051	●	251	●
5.2	6	28	66	0.16	052	●	252	●
5.3	6	28	66	0.16	053	●	253	●
5.4	6	28	66	0.16	054	●	254	●
5.5	6	28	66	0.16	055	●	255	●
5.55	6	28	66	0.16	203	●	206	●
5.6	6	28	66	0.16	056	●	256	●
5.65	6	28	66	0.16	207	●	-	-
5.7	6	28	66	0.16	057	●	257	●
5.8	6	28	66	0.16	058	●	258	●
5.9	6	28	66	0.21	059	●	259	●
6.0	6	28	66	0.21	060	●	260	●
6.1	8	34	79	0.21	061	●	261	●
6.2	8	34	79	0.21	062	●	262	●
6.3	8	34	79	0.21	063	●	263	●
6.4	8	34	79	0.21	064	●	264	●
6.5	8	34	79	0.21	065	●	265	●
6.6	8	34	79	0.21	066	●	266	●
6.7	8	34	79	0.21	067	●	267	●
6.8	8	34	79	0.21	068	●	268	●
6.9	8	34	79	0.21	069	●	269	●
7.0	8	34	79	0.21	070	●	270	●
7.1	8	41	79	0.21	071	●	271	●
7.2	8	41	79	0.21	072	●	272	●
7.3	8	41	79	0.21	073	●	273	●
7.4	8	41	79	0.21	074	●	274	●
7.5	8	41	79	0.21	075	●	275	●
7.55	8	41	79	0.21	209	●	-	-
7.6	8	41	79	0.21	076	●	276	●
7.65	8	41	79	0.21	211	●	-	-
7.7	8	41	79	0.21	077	●	277	●
7.8	8	41	79	0.21	078	●	278	●
7.9	8	41	79	0.21	079	●	279	●
8.0	8	41	79	0.21	080	●	280	●
8.1	10	47	89	0.21	081	●	281	●
8.2	10	47	89	0.21	082	●	282	●
8.3	10	47	89	0.21	083	●	283	●
8.4	10	47	89	0.21	084	●	284	●
8.5	10	47	89	0.21	085	●	285	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11102... Ident. No.		11102... Ident. No.	
8.6	10	47	89	0.21	086	●	286	●
8.7	10	47	89	0.21	087	●	287	●
8.8	10	47	89	0.21	088	●	288	●
8.9	10	47	89	0.21	089	●	289	●
9.0	10	47	89	0.21	090	●	290	●
9.1	10	47	89	0.21	091	●	291	●
9.2	10	47	89	0.21	092	●	292	●
9.3	10	47	89	0.21	093	●	293	●
9.4	10	47	89	0.21	094	●	294	●
9.5	10	47	89	0.21	095	●	295	●
9.6	10	47	89	0.21	096	●	296	●
9.7	10	47	89	0.21	097	●	297	●
9.8	10	47	89	0.21	098	●	298	●
9.9	10	47	89	0.21	099	●	299	●
10.0	10	47	89	0.28	100	●	300	●
10.1	12	55	102	0.28	101	●	301	●
10.2	12	55	102	0.28	102	●	302	●
10.3	12	55	102	0.28	103	●	303	●
10.4	12	55	102	0.28	104	●	304	●
10.5	12	55	102	0.28	105	●	305	●
10.6	12	55	102	0.28	106	●	306	●
10.7	12	55	102	0.28	107	●	307	●
10.8	12	55	102	0.28	108	●	308	●
10.9	12	55	102	0.28	109	●	309	●
11.0	12	55	102	0.28	110	●	310	●
11.1	12	55	102	0.28	111	●	311	●
11.2	12	55	102	0.28	112	●	312	●
11.3	12	55	102	0.28	113	●	313	●
11.4	12	55	102	0.28	114	●	314	●
11.5	12	55	102	0.28	115	●	315	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11102... Ident. No.		11102... Ident. No.	
11.6	12	55	102	0.28	116	●	316	●
11.7	12	55	102	0.28	117	●	317	●
11.8	12	55	102	0.28	118	●	318	●
11.9	12	55	102	0.28	119	●	319	●
12.0	12	55	102	0.33	120	●	320	●
12.2	14	60	107	0.33	-	-	322	●
12.5	14	60	107	0.33	125	●	325	●
12.8	14	60	107	0.33	128	●	328	●
13.0	14	60	107	0.33	130	●	330	●
13.5	14	60	107	0.33	135	●	335	●
13.8	14	60	107	0.33	138	●	338	●
14.0	14	60	107	0.33	140	●	340	●
14.2	16	65	115	0.33	142	●	342	●
14.5	16	65	115	0.33	145	●	345	●
14.8	16	65	115	0.33	148	●	348	●
15.0	16	65	115	0.33	150	●	350	●
15.1	16	65	115	0.33	151	●	351	●
15.2	16	65	115	0.33	-	-	352	●
15.5	16	65	115	0.33	155	●	355	●
15.8	16	65	115	0.33	158	●	358	●
16.0	16	65	115	0.33	160	●	360	●
16.5	18	73	123	0.33	165	●	365	●
17.0	18	73	123	0.36	170	●	370	●
17.5	18	73	123	0.36	175	●	375	●
18.0	18	73	123	0.36	180	●	380	●
18.5	20	79	131	0.36	185	●	385	●
19.0	20	79	131	0.39	190	●	390	●
19.5	20	79	131	0.39	195	●	395	●
20.0	20	79	131	0.40	200	●	400	●

Prod. Gr. 1AB

ATORN® high-performance drill, solid carbide TiAlN plus HPC 3xD without internal cooling (DIN 6537)

for universal use up to 1300 N/mm²

VHM | TiAlN plus | 3xD | HPC UNI | 140° | HA | HB

HIGHLIGHT



Ident. No. 010–203, 207–211



Ident. No. 204–206, 230–400

Application:
for HPC boring up to a strength of 1300 N/mm²

Execution:
- solid carbide TiAlNplus high-performance drill

Advantage:
- economic drilling in a wide variety of materials with high cutting values
- newly developed geometry in conjunction with a multi-layer coating individually tailored to drilling ensures significantly longer service lives
- Cutting edge finishing reduces micro-fractures and increases the service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11104010-212	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		
11104230-400	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					External		External	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11104... Ident. No.		11104... Ident. No.	
1.0	4	7	45	0.025	010	●	-	-
1.1	4	7	45	0.025	011	●	-	-
1.2	4	7	45	0.025	012	●	-	-
1.3	4	7	45	0.025	013	●	-	-
1.4	4	7	45	0.025	014	●	-	-
1.5	4	14	55	0.033	015	●	-	-
1.6	4	14	55	0.033	016	●	-	-
1.7	4	14	55	0.033	017	●	-	-
1.8	4	14	55	0.033	018	●	-	-
1.9	4	14	55	0.033	019	●	-	-
2.0	4	20	55	0.045	020	●	-	-
2.1	4	20	55	0.045	021	●	-	-
2.2	4	20	55	0.045	022	●	-	-
2.3	4	20	55	0.045	023	●	-	-
2.4	4	20	55	0.045	024	●	-	-
2.5	4	20	55	0.045	025	●	-	-
2.6	4	20	55	0.045	026	●	-	-
2.7	4	20	55	0.045	027	●	-	-
2.8	4	20	55	0.045	028	●	-	-
2.9	4	20	55	0.045	029	●	-	-
3.0	6	20	62	0.10	030	●	230	●
3.1	6	20	62	0.10	031	●	231	●
3.2	6	20	62	0.10	032	●	232	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					External		External	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11104... Ident. No.		11104... Ident. No.	
3.25	6	20	62	0.10	201	●	204	●
3.3	6	20	62	0.10	033	●	233	●
3.4	6	20	62	0.10	034	●	234	●
3.5	6	20	62	0.10	035	●	235	●
3.6	6	20	62	0.10	036	●	236	●
3.7	6	20	62	0.10	037	●	237	●
3.8	6	24	66	0.10	038	●	238	●
3.9	6	24	66	0.10	039	●	239	●
4.0	6	24	66	0.10	040	●	240	●
4.1	6	24	66	0.10	041	●	241	●
4.2	6	24	66	0.10	042	●	242	●
4.3	6	24	66	0.10	043	●	243	●
4.4	6	24	66	0.10	044	●	244	●
4.5	6	24	66	0.10	045	●	245	●
4.6	6	24	66	0.10	046	●	246	●
4.65	6	24	66	0.10	202	●	205	●
4.7	6	24	66	0.10	047	●	247	●
4.8	6	28	66	0.10	048	●	248	●
4.9	6	28	66	0.10	049	●	249	●
5.0	6	28	66	0.10	050	●	250	●
5.1	6	28	66	0.10	051	●	251	●
5.2	6	28	66	0.10	052	●	252	●
5.3	6	28	66	0.10	053	●	253	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					External		External	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11104... Ident. No.		11104... Ident. No.	
5.4	6	28	66	0.10	054	●	254	●
5.5	6	28	66	0.10	055	●	255	●
5.55	6	28	66	0.10	203	●	206	●
5.6	6	28	66	0.10	056	●	256	●
5.65	6	28	66	0.10	207	●	-	-
5.7	6	28	66	0.10	057	●	257	●
5.8	6	28	66	0.10	058	●	258	●
5.9	6	28	66	0.10	059	●	259	●
6.0	6	28	66	0.15	060	●	260	●
6.1	8	34	79	0.15	061	●	261	●
6.2	8	34	79	0.15	062	●	262	●
6.3	8	34	79	0.15	063	●	263	●
6.4	8	34	79	0.15	064	●	264	●
6.5	8	34	79	0.15	065	●	265	●
6.6	8	34	79	0.15	066	●	266	●
6.7	8	34	79	0.15	067	●	267	●
6.8	8	34	79	0.15	068	●	268	●
6.9	8	34	79	0.15	069	●	269	●
7.0	8	34	79	0.15	070	●	270	●
7.1	8	41	79	0.15	071	●	271	●
7.2	8	41	79	0.15	072	●	272	●
7.3	8	41	79	0.15	073	●	273	●
7.4	8	41	79	0.15	074	●	274	●
7.5	8	41	79	0.15	075	●	275	●
7.55	8	41	79	0.15	209	●	-	-
7.6	8	41	79	0.15	076	●	276	●
7.65	8	41	79	0.15	211	●	-	-
7.7	8	41	79	0.15	077	●	277	●
7.8	8	41	79	0.15	078	●	278	●
7.9	8	41	79	0.15	079	●	279	●
8.0	8	41	79	0.15	080	●	280	●
8.1	10	47	89	0.15	081	●	281	●
8.2	10	47	89	0.15	082	●	282	●
8.3	10	47	89	0.15	083	●	283	●
8.4	10	47	89	0.15	084	●	284	●
8.5	10	47	89	0.15	085	●	285	●
8.6	10	47	89	0.15	086	●	286	●
8.7	10	47	89	0.15	087	●	287	●
8.8	10	47	89	0.15	088	●	288	●
8.9	10	47	89	0.15	089	●	289	●
9.0	10	47	89	0.15	090	●	290	●
9.1	10	47	89	0.15	091	●	291	●
9.2	10	47	89	0.15	092	●	292	●
9.3	10	47	89	0.15	093	●	293	●
9.4	10	47	89	0.15	094	●	294	●
9.5	10	47	89	0.15	095	●	295	●
9.6	10	47	89	0.15	096	●	296	●
9.7	10	47	89	0.15	097	●	297	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					External		External	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11104... Ident. No.		11104... Ident. No.	
9.8	10	47	89	0.15	098	●	298	●
9.9	10	47	89	0.15	099	●	299	●
10.0	10	47	89	0.15	100	●	300	●
10.1	12	55	102	0.15	101	●	301	●
10.2	12	55	102	0.15	102	●	302	●
10.3	12	55	102	0.15	103	●	303	●
10.4	12	55	102	0.15	104	●	304	●
10.5	12	55	102	0.15	105	●	305	●
10.6	12	55	102	0.15	106	●	306	●
10.7	12	55	102	0.15	107	●	307	●
10.8	12	55	102	0.15	108	●	308	●
10.9	12	55	102	0.15	109	●	309	●
11.0	12	55	102	0.15	110	●	310	●
11.1	12	55	102	0.15	111	●	311	●
11.2	12	55	102	0.15	112	●	312	●
11.3	12	55	102	0.15	113	●	313	●
11.4	12	55	102	0.15	114	●	314	●
11.5	12	55	102	0.15	115	●	315	●
11.6	12	55	102	0.15	116	●	316	●
11.7	12	55	102	0.15	117	●	317	●
11.8	12	55	102	0.15	118	●	318	●
11.9	12	55	102	0.15	119	●	319	●
12.0	12	55	102	0.15	120	●	320	●
12.2	14	60	107	0.20	-	-	322	●
12.5	14	60	107	0.20	125	●	325	●
12.8	14	60	107	0.20	128	●	328	●
13.0	14	60	107	0.20	130	●	330	●
13.1	14	60	107	0.20	-	-	331	●
13.5	14	60	107	0.20	135	●	335	●
13.8	14	60	107	0.20	138	●	338	●
14.0	14	60	107	0.20	140	●	340	●
14.2	16	65	115	0.20	142	●	342	●
14.5	16	65	115	0.20	145	●	345	●
14.8	16	65	115	0.20	148	●	348	●
15.0	16	65	115	0.20	150	●	350	●
15.1	16	65	115	0.20	151	●	351	●
15.2	16	65	115	0.20	-	-	352	●
15.5	16	65	115	0.20	155	●	355	●
15.8	16	65	115	0.20	158	●	358	●
16.0	16	65	115	0.28	160	●	360	●
16.5	18	73	123	0.28	165	●	365	●
17.0	18	73	123	0.28	170	●	370	●
17.5	18	73	123	0.28	175	●	375	●
18.0	18	73	123	0.28	180	●	380	●
18.5	20	79	131	0.28	185	●	385	●
19.0	20	79	131	0.28	190	●	390	●
19.5	20	79	131	0.28	195	●	395	●
20.0	20	79	131	0.30	200	●	400	●

Prod. Gr. 1AB

ATORN® high-performance drill, solid carbide TiAlN plus HPC 5xD with internal cooling (DIN 6537)

for universal use up to 1300 N/mm²

VHM | TiAlN plus | 5xD | HPC UNI | 140° | IK | HA | HB

HIGHLIGHT

Application:
for HPC boring up to a strength of 1300 N/mm²

Execution:
- solid carbide TiAlNplus high-performance drill

Advantage:
- Cutting edge finishing reduces micro-fractures and increases the service life
- **Ident. No. 010–203, 211:**
  - Economic drilling in a wide variety of materials with high cutting values
  - Newly developed geometry in conjunction with a multi-layer coating individually tailored to drilling ensures significantly longer service lives
- **Ident. No. 204–206, 230–400:**
  - economic drilling in a wide variety of materials with high cutting values
  - newly developed geometry in conjunction with a multi-layer coating individually tailored to drilling ensures significantly longer service lives



Ident. No. 010–203, 211



Ident. No. 204–206, 230–400

Application No.	Steel (N/mm²) <700	<1000	<1300	Stainless steel marten.	austen.	Alu short	long	Brass short	long	Bronze short	long	Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat. <55 HRC	<65 HRC
11105010-218	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		
11105230-400	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11105... Ident. No.		11105... Ident. No.	
1.0	4	8	55	0.025	010	●	-	-
1.1	4	12	55	0.025	011	●	-	-

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11105... Ident. No.		11105... Ident. No.	
1.2	4	12	55	0.025	012	●	-	-
1.3	4	12	55	0.025	013	●	-	-

Tool holding device					HA parallel shank		HB parallel shank	
Surface					TiAlN plus		TiAlN plus	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11105... Ident. No.		11105... Ident. No.	
1.4	4	12	55	0.025	014	●	-	-
1.5	4	12	55	0.033	015	●	-	-
1.6	4	16	55	0.033	016	●	-	-
1.7	4	16	55	0.033	017	●	-	-
1.8	4	16	55	0.033	018	●	-	-
1.9	4	16	55	0.033	019	●	-	-
2.0	4	21	57	0.045	020	●	-	-
2.1	4	21	57	0.045	021	●	-	-
2.2	4	21	57	0.045	022	●	-	-
2.3	4	21	57	0.045	023	●	-	-
2.4	4	21	57	0.045	024	●	-	-
2.5	4	21	57	0.045	025	●	-	-
2.6	4	21	57	0.045	026	●	-	-
2.7	4	21	57	0.045	027	●	-	-
2.8	4	21	57	0.045	028	●	-	-
2.9	4	21	57	0.045	029	●	-	-
3.0	6	28	66	0.16	030	●	230	●
3.1	6	28	66	0.16	031	●	231	●
3.2	6	28	66	0.16	032	●	232	●
3.25	6	28	66	0.16	201	●	204	●
3.3	6	28	66	0.16	033	●	233	●
3.4	6	28	66	0.16	034	●	234	●
3.5	6	28	66	0.16	035	●	235	●
3.6	6	28	66	0.16	036	●	236	●
3.7	6	28	66	0.16	037	●	237	●
3.8	6	36	74	0.16	038	●	238	●
3.9	6	36	74	0.16	039	●	239	●
4.0	6	36	74	0.16	040	●	240	●
4.1	6	36	74	0.16	041	●	241	●
4.2	6	36	74	0.16	042	●	242	●
4.3	6	36	74	0.16	043	●	243	●
4.4	6	36	74	0.16	044	●	244	●
4.5	6	36	74	0.16	045	●	245	●
4.6	6	36	74	0.16	046	●	246	●
4.65	6	36	74	0.16	202	●	205	●
4.7	6	36	74	0.16	047	●	247	●
4.8	6	44	82	0.16	048	●	248	●
4.9	6	44	82	0.16	049	●	249	●
5.0	6	44	82	0.16	050	●	250	●
5.1	6	44	82	0.16	051	●	251	●
5.2	6	44	82	0.16	052	●	252	●
5.3	6	44	82	0.16	053	●	253	●
5.4	6	44	82	0.16	054	●	254	●
5.5	6	44	82	0.16	055	●	255	●
5.55	6	44	82	0.16	203	●	206	●
5.6	6	44	82	0.16	056	●	256	●
5.7	6	44	82	0.16	057	●	257	●
5.8	6	44	82	0.16	058	●	258	●
5.9	6	44	82	0.21	059	●	259	●
6.0	6	44	82	0.21	060	●	260	●
6.1	8	53	91	0.21	061	●	261	●
6.2	8	53	91	0.21	062	●	262	●
6.3	8	53	91	0.21	063	●	263	●
6.4	8	53	91	0.21	064	●	264	●
6.5	8	53	91	0.21	065	●	265	●
6.6	8	53	91	0.21	066	●	266	●
6.7	8	53	91	0.21	067	●	267	●
6.8	8	53	91	0.21	068	●	268	●
6.9	8	53	91	0.21	069	●	269	●
7.0	8	53	91	0.21	070	●	270	●
7.1	8	53	91	0.21	071	●	271	●
7.2	8	53	91	0.21	072	●	272	●
7.3	8	53	91	0.21	073	●	273	●
7.4	8	53	91	0.21	074	●	274	●
7.5	8	53	91	0.21	075	●	275	●
7.6	8	53	91	0.21	076	●	276	●
7.65	8	53	91	0.21	211	●	-	-
7.7	8	53	91	0.21	077	●	277	●
7.8	8	53	91	0.21	078	●	278	●
7.9	8	53	91	0.21	079	●	279	●
8.0	8	53	91	0.21	080	●	280	●
8.1	10	61	103	0.21	081	●	281	●
8.2	10	61	103	0.21	082	●	282	●
8.3	10	61	103	0.21	083	●	283	●
8.4	10	61	103	0.21	084	●	284	●
8.5	10	61	103	0.21	085	●	285	●
8.6	10	61	103	0.21	086	●	286	●
8.7	10	61	103	0.21	087	●	287	●
8.8	10	61	103	0.21	088	●	288	●
8.9	10	61	103	0.21	089	●	289	●
9.0	10	61	103	0.21	090	●	290	●
9.1	10	61	103	0.21	091	●	291	●
9.2	10	61	103	0.21	092	●	292	●
9.3	10	61	103	0.21	093	●	293	●
9.4	10	61	103	0.21	094	●	294	●
9.5	10	61	103	0.21	095	●	295	●
9.6	10	61	103	0.21	096	●	296	●
9.7	10	61	103	0.21	097	●	297	●
9.8	10	61	103	0.21	098	●	298	●
9.9	10	61	103	0.21	099	●	299	●
10.0	10	61	103	0.28	100	●	300	●
10.1	12	71	118	0.28	101	●	301	●
10.2	12	71	118	0.28	102	●	302	●
10.3	12	71	118	0.28	103	●	303	●
10.4	12	71	118	0.28	104	●	304	●
10.5	12	71	118	0.28	105	●	305	●
10.6	12	71	118	0.28	106	●	306	●
10.7	12	71	118	0.28	107	●	307	●
10.8	12	71	118	0.28	108	●	308	●
10.9	12	71	118	0.28	109	●	309	●
11.0	12	71	118	0.28	110	●	310	●
11.1	12	71	118	0.28	111	●	311	●
11.2	12	71	118	0.28	112	●	312	●
11.3	12	71	118	0.28	113	●	313	●
11.4	12	71	118	0.28	114	●	314	●
11.5	12	71	118	0.28	115	●	315	●
11.6	12	71	118	0.28	116	●	316	●
11.7	12	71	118	0.28	117	●	317	●
11.8	12	71	118	0.28	118	●	318	●
11.9	12	71	118	0.28	119	●	319	●
12.0	12	71	118	0.33	120	●	320	●
12.1	14	77	124	0.33	121	●	-	-
12.2	14	77	124	0.33	-	-	322	●
12.5	14	77	124	0.33	125	●	325	●
12.8	14	77	124	0.33	128	●	328	●
13.0	14	77	124	0.33	130	●	330	●
13.1	14	77	124	0.33	-	-	331	●
13.5	14	77	124	0.33	135	●	335	●
13.8	14	77	124	0.33	138	●	338	●
14.0	14	77	124	0.33	140	●	340	●
14.2	16	83	133	0.33	142	●	342	●
14.5	16	83	133	0.33	145	●	345	●
14.8	16	83	133	0.33	148	●	348	●
15.0	16	83	133	0.33	150	●	350	●
15.1	16	83	133	0.33	151	●	351	●
15.2	16	83	133	0.33	-	-	352	●
15.5	16	83	133	0.33	155	●	355	●
15.8	16	83	133	0.33	158	●	358	●
16.0	16	83	133	0.33	160	●	360	●
16.5	18	93	143	0.33	165	●	365	●
17.0	18	93	143	0.36	170	●	370	●
17.5	18	93	143	0.36	175	●	375	●
18.0	18	93	143	0.36	180	●	380	●
18.5	20	101	153	0.36	185	●	385	●
19.0	20	101	153	0.39	190	●	390	●
19.5	20	101	153	0.39	195	●	395	●
20.0	20	101	153	0.40	200	●	400	●

Prod. Gr. 1AB

ATORN® high-performance drill, solid carbide TiAlN plus HPC 8xD with internal cooling (DIN 6537)

for universal use up to 1300 N/mm²

VHM | TiAlN plus | 8xD | HPC UNI | 140° | IK | HA



Application:
for HPC boring up to a strength of 1300 N/mm²

Execution:
- solid carbide TiAlNplus high-performance drill

Advantage:
- economic drilling in a wide variety of materials with high cutting values
- newly developed geometry in conjunction with a multi-layer coating individually tailored to drilling ensures significantly longer service lives
- Cutting edge finishing reduces micro-fractures and increases the service life
- very high alignment accuracy thanks to 4 drill heels
- high process reliability even at extreme depths

HIGHLIGHT

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11108030-200	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		

					Tool holding device	HA parallel shank
					Surface	TiAlN plus
					Coolant supply	Internal
					Tolerance of cutting edge Ø	h7
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11108... Ident. No.	
3.0	6	34	72	0.11	030	●
3.1	6	34	72	0.11	031	●
3.2	6	34	72	0.11	032	●
3.3	6	34	72	0.11	033	●
3.4	6	34	72	0.11	034	●
3.5	6	34	72	0.11	035	●
3.6	6	34	72	0.11	036	●
3.7	6	34	72	0.11	037	●
3.8	6	43	81	0.11	038	●
3.9	6	43	81	0.11	039	●
4.0	6	43	81	0.11	040	●
4.1	6	43	81	0.11	041	●
4.2	6	43	81	0.11	042	●
4.3	6	43	81	0.11	043	●
4.4	6	43	81	0.11	044	●
4.5	6	43	81	0.11	045	●
4.6	6	43	81	0.11	046	●
4.7	6	43	81	0.11	047	●
4.8	6	57	95	0.11	048	●
4.9	6	57	95	0.11	049	●
5.0	6	57	95	0.11	050	●
5.1	6	57	95	0.11	051	●
5.2	6	57	95	0.11	052	●
5.3	6	57	95	0.11	053	●
5.4	6	57	95	0.11	054	●
5.5	6	57	95	0.11	055	●
5.6	6	57	95	0.11	056	●
5.7	6	57	95	0.11	057	●
5.8	6	57	95	0.11	058	●
5.9	6	57	95	0.11	059	●
6.0	6	57	95	0.16	060	●
6.1	8	76	114	0.16	061	●
6.2	8	76	114	0.16	062	●
6.3	8	76	114	0.16	063	●
6.4	8	76	114	0.16	064	●
6.5	8	76	114	0.16	065	●
6.6	8	76	114	0.16	066	●
6.7	8	76	114	0.16	067	●
6.8	8	76	114	0.16	068	●
6.9	8	76	114	0.16	069	●
7.0	8	76	114	0.16	070	●
7.1	8	76	114	0.16	071	●
7.2	8	76	114	0.16	072	●
7.3	8	76	114	0.16	073	●
7.4	8	76	114	0.16	074	●
7.5	8	76	114	0.16	075	●
7.6	8	76	114	0.16	076	●
7.7	8	76	114	0.16	077	●

					Tool holding device	HA parallel shank
					Surface	TiAlN plus
					Coolant supply	Internal
					Tolerance of cutting edge Ø	h7
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11108... Ident. No.	
7.8	8	76	114	0.16	078	●
7.9	8	76	114	0.16	079	●
8.0	8	76	114	0.16	080	●
8.1	10	95	142	0.16	081	●
8.2	10	95	142	0.16	082	●
8.3	10	95	142	0.16	083	●
8.4	10	95	142	0.16	084	●
8.5	10	95	142	0.16	085	●
8.6	10	95	142	0.16	086	●
8.7	10	95	142	0.16	087	●
8.8	10	95	142	0.16	088	●
8.9	10	95	142	0.16	089	●
9.0	10	95	142	0.21	090	●
9.1	10	95	142	0.21	091	●
9.2	10	95	142	0.21	092	●
9.3	10	95	142	0.21	093	●
9.4	10	95	142	0.21	094	●
9.5	10	95	142	0.21	095	●
9.6	10	95	142	0.21	096	●
9.7	10	95	142	0.21	097	●
9.8	10	95	142	0.21	098	●
9.9	10	95	142	0.21	099	●
10.0	10	95	142	0.21	100	●
10.2	12	114	162	0.21	102	●
10.5	12	114	162	0.21	105	●
10.8	12	114	162	0.21	108	●
11.0	12	114	162	0.21	110	●
11.5	12	114	162	0.21	115	●
11.8	12	114	162	0.21	118	●
12.0	12	114	162	0.27	120	●
12.2	14	131	178	0.27	122	●
12.5	14	131	178	0.27	125	●
13.0	14	131	178	0.27	130	●
13.5	14	131	178	0.27	135	●
14.0	14	131	178	0.27	140	●
14.5	16	152	203	0.27	145	●
15.0	16	152	203	0.27	150	●
15.5	16	152	203	0.27	155	●
16.0	16	152	203	0.31	160	●
16.5	18	171	222	0.31	165	●
17.0	18	171	222	0.31	170	●
17.5	18	171	222	0.31	175	●
18.0	18	171	222	0.31	180	●
18.5	20	190	243	0.31	185	●
19.0	20	190	243	0.33	190	●
19.5	20	190	243	0.33	195	●
20.0	20	190	243	0.33	200	●

Prod. Gr. 1AB

ATORN® high-performance drill, solid carbide TiAlN plus HPC 12xD with internal cooling (DIN 6537)

for universal use up to 1300 N/mm²

VHM | TiAlN plus | 12xD | HPC UNI | 140° | IK | HA



Application:
for HPC boring up to a strength of 1300 N/mm²

Execution:
- solid carbide TiAlNplus high-performance drill

Advantage:
- economic drilling in a wide variety of materials with high cutting values
- newly developed geometry in conjunction with a multi-layer coating individually tailored to drilling ensures significantly longer service lives
- Cutting edge finishing reduces micro-fractures and increases the service life
- very high alignment accuracy thanks to 4 drill heels
- high process reliability even at extreme depths

HIGHLIGHT

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11110030-200	135	110	90	35	30	210	260	230	180	160	130	60		110	40	35	30		

Tool holding device	HA parallel shank
Surface	TiAlN plus
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11110... Ident. No.	
3.0	6	54	92	0.10	030	●
3.1	6	54	92	0.10	031	●
3.2	6	54	92	0.10	032	●
3.3	6	54	92	0.10	033	●
3.4	6	54	92	0.10	034	●
3.5	6	54	92	0.10	035	●
3.6	6	54	92	0.10	036	●
3.7	6	54	92	0.10	037	●
3.8	6	64	102	0.10	038	●
3.9	6	64	102	0.10	039	●
4.0	6	64	102	0.10	040	●
4.1	6	64	102	0.10	041	●
4.2	6	64	102	0.10	042	●
4.3	6	64	102	0.10	043	●
4.4	6	64	102	0.10	044	●
4.5	6	64	102	0.10	045	●
4.6	6	64	102	0.10	046	●
4.7	6	64	102	0.10	047	●
4.8	6	78	116	0.10	048	●
4.9	6	78	116	0.10	049	●
5.0	6	78	116	0.10	050	●
5.1	6	78	116	0.10	051	●
5.2	6	78	116	0.10	052	●
5.3	6	78	116	0.10	053	●
5.4	6	78	116	0.10	054	●
5.5	6	78	116	0.10	055	●
5.6	6	78	116	0.10	056	●
5.7	6	78	116	0.10	057	●
5.8	6	78	116	0.10	058	●
5.9	6	78	116	0.10	059	●
6.0	6	78	116	0.15	060	●
6.1	8	108	146	0.15	061	●
6.2	8	108	146	0.15	062	●
6.3	8	108	146	0.15	063	●
6.4	8	108	146	0.15	064	●
6.5	8	108	146	0.15	065	●
6.6	8	108	146	0.15	066	●
6.7	8	108	146	0.15	067	●
6.8	8	108	146	0.15	068	●
6.9	8	108	146	0.15	069	●
7.0	8	108	146	0.15	070	●
7.1	8	108	146	0.15	071	●
7.2	8	108	146	0.15	072	●
7.3	8	108	146	0.15	073	●
7.4	8	108	146	0.15	074	●
7.5	8	108	146	0.15	075	●
7.6	8	108	146	0.15	076	●

Tool holding device	HA parallel shank
Surface	TiAlN plus
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11110... Ident. No.	
7.7	8	108	146	0.15	077	●
7.8	8	108	146	0.15	078	●
7.9	8	108	146	0.15	079	●
8.0	8	108	146	0.15	080	●
8.1	10	120	162	0.15	081	●
8.2	10	120	162	0.15	082	●
8.3	10	120	162	0.15	083	●
8.4	10	120	162	0.15	084	●
8.5	10	120	162	0.15	085	●
8.6	10	120	162	0.15	086	●
8.7	10	120	162	0.15	087	●
8.8	10	120	162	0.15	088	●
8.9	10	120	162	0.15	089	●
9.0	10	120	162	0.20	090	●
9.1	10	120	162	0.20	091	●
9.2	10	120	162	0.20	092	●
9.3	10	120	162	0.20	093	●
9.4	10	120	162	0.20	094	●
9.5	10	120	162	0.20	095	●
9.6	10	120	162	0.20	096	●
9.7	10	120	162	0.20	097	●
9.8	10	120	162	0.20	098	●
9.9	10	120	162	0.20	099	●
10.0	10	120	162	0.20	100	●
10.2	12	156	204	0.20	102	●
10.5	12	156	204	0.20	105	●
10.8	12	156	204	0.20	108	●
11.0	12	156	204	0.20	110	●
11.5	12	156	204	0.20	115	●
11.8	12	156	204	0.20	118	●
12.0	12	156	204	0.26	120	●
12.5	14	182	230	0.26	125	●
12.7	14	182	230	0.26	127	●
12.8	14	182	230	0.26	128	●
13.0	14	182	230	0.26	130	●
13.5	14	182	230	0.26	135	●
14.0	14	182	230	0.26	140	●
14.5	16	208	260	0.26	145	●
14.8	16	208	260	0.26	148	●
15.0	16	208	260	0.26	150	●
15.5	16	208	260	0.26	155	●
16.0	16	208	260	0.30	160	●
16.5	18	234	285	0.30	165	●
17.0	18	234	285	0.30	170	●
18.0	18	234	285	0.30	180	●
19.0	20	258	310	0.32	190	●
20.0	20	258	310	0.32	200	●

Prod. Gr. 1AB

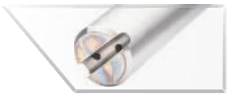
Ultra M solid carbide high-performance drill range

Application:
For HPC boring in the stainless steel, titanium, nickel and special alloy material groups.

advantage:

- special HPC cutter geometry: innovative cutter geometry with extremely smooth cutting blade and very high service life
- latest coating technology: newly developed form-fitting ULTRA M coating for extra service life and added process stability
- cutting edge preparation minimises micro-fractures on the cutter



ULTRA M

HPC VA

ATORN® high-performance drill bit, solid carbide ULTRA M HPC 3xD with internal cooling

For use in stainless steel and special alloys

VHM | ULTRA M | 3xD | HPC VA | 140° | IK | HA | HB

Application:
For HPC boring in stainless steel, titanium alloys, nickel alloys and special alloys.

Execution:

- Solid carbide high-performance drill ULTRA M

Advantage:

- innovative cutting geometry with extremely effective cutting edge
- newly developed form-fitting ULTRA M coating for improved service life
- Cutting edge preparation minimises micro-fractures on the cutter



Ident. No. 030–203, 601
Shank HA



Ident. No. 204–400, 602
Shank HB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11142030-601				60	55										40	40	30		
11142204-603				60	55										40	40	30		

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	mm	mm	mm	f steinl. st. ● (mm/U)	11142... Ident. No.		11142... Ident. No.	
3	6	20	62	0.09	030	●	230	●
3.1	6	20	62	0.09	031	●	231	●
3.2	6	20	62	0.09	032	●	232	●
3.25	6	20	62	0.09	201	○	204	●
3.3	6	20	62	0.09	033	●	233	●
3.4	6	20	62	0.09	034	●	234	●
3.5	6	20	62	0.09	035	●	235	●
3.6	6	20	62	0.09	036	●	236	●
3.7	6	20	62	0.09	037	●	237	●
3.8	6	24	66	0.09	038	●	238	●
3.9	6	24	66	0.09	039	●	239	●
4	6	24	66	0.09	040	●	240	●
4.1	6	24	66	0.09	041	●	241	●
4.2	6	24	66	0.09	042	●	242	●
4.3	6	24	66	0.09	043	●	243	●
4.4	6	24	66	0.09	044	●	244	●
4.5	6	24	66	0.09	045	●	245	●
4.6	6	24	66	0.09	046	●	246	●
4.65	6	24	66	0.09	202	●	205	●
4.7	6	28	66	0.09	047	●	247	●
4.8	6	28	66	0.09	048	●	248	●
4.9	6	28	66	0.09	049	●	249	●
5	6	28	66	0.09	050	●	250	●
5.1	6	28	66	0.09	051	●	251	●
5.2	6	28	66	0.09	052	●	252	●
5.3	6	28	66	0.09	053	●	253	●
5.4	6	28	66	0.09	054	●	254	●
5.5	6	28	66	0.1	055	●	255	●
5.55	6	28	66	0.1	203	●	206	●
5.6	6	28	66	0.1	056	●	256	●
5.7	6	28	66	0.1	057	●	257	●
5.8	6	28	66	0.1	058	●	258	●
5.9	6	28	66	0.1	059	●	259	●
6	6	28	66	0.1	060	●	260	●
6.1	8	34	79	0.1	061	●	261	●
6.2	8	34	79	0.1	062	●	262	●
6.3	8	34	79	0.1	063	●	263	●
6.4	8	34	79	0.1	064	●	264	●
6.5	8	34	79	0.11	065	●	265	●
6.6	8	34	79	0.11	066	●	266	●
6.7	8	34	79	0.11	067	●	267	●
6.8	8	34	79	0.11	068	●	268	●
6.9	8	34	79	0.11	069	●	269	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	mm	mm	mm	f steinl. st. ● (mm/U)	11142... Ident. No.		11142... Ident. No.	
7	8	34	79	0.11	070	●	270	●
7.1	8	41	79	0.11	071	●	271	●
7.2	8	41	79	0.11	072	●	272	●
7.3	8	41	79	0.11	073	●	273	●
7.4	8	41	79	0.11	074	●	274	●
7.5	8	41	79	0.12	075	●	275	●
7.6	8	41	79	0.12	076	●	276	●
7.7	8	41	79	0.12	077	●	277	●
7.8	8	41	79	0.12	078	●	278	●
7.9	8	41	79	0.12	079	●	279	●
8	8	41	79	0.12	080	●	280	●
8.1	10	47	89	0.12	081	●	281	●
8.2	10	47	89	0.12	082	●	282	●
8.3	10	47	89	0.12	083	●	283	●
8.4	10	47	89	0.13	084	●	284	●
8.5	10	47	89	0.13	085	●	285	●
8.6	10	47	89	0.13	086	●	286	●
8.7	10	47	89	0.13	087	●	287	●
8.8	10	47	89	0.13	088	●	288	●
8.9	10	47	89	0.13	089	●	289	●
9	10	47	89	0.13	090	●	290	●
9.1	10	47	89	0.13	091	●	291	●
9.2	10	47	89	0.14	092	●	292	●
9.25	10	47	89	0.1	601	●	602	●
9.3	10	47	89	0.14	093	●	293	●
9.4	10	47	89	0.14	094	●	294	●
9.5	10	47	89	0.14	095	●	295	●
9.6	10	47	89	0.14	096	●	296	●
9.7	10	47	89	0.14	097	●	297	●
9.8	10	47	89	0.14	098	●	298	●
9.9	10	47	89	0.14	099	●	299	●
10	10	47	89	0.15	100	●	300	●
10.1	12	55	102	0.15	101	●	301	●
10.2	12	55	102	0.15	102	●	302	●
10.3	12	55	102	0.15	103	●	303	●
10.4	12	55	102	0.15	104	●	304	●
10.5	12	55	102	0.15	105	●	305	●
10.6	12	55	102	0.15	106	●	306	●
10.7	12	55	102	0.15	107	●	307	●
10.8	12	55	102	0.16	108	●	308	●
10.9	12	55	102	0.16	109	●	309	●
11	12	55	102	0.16	110	●	310	●
11.1	12	55	102	0.16	111	●	311	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	h6 mm	mm	mm	f steinl. st. ● (mm/U)	11142... Ident. No.		11142... Ident. No.	
11.2	12	55	102	0.16	112	●	312	●
11.3	12	55	102	0.16	113	●	313	●
11.4	12	55	102	0.16	114	●	314	●
11.5	12	55	102	0.16	115	●	315	●
11.6	12	55	102	0.17	116	●	316	●
11.7	12	55	102	0.17	117	●	317	●
11.8	12	55	102	0.17	118	●	318	●
11.9	12	55	102	0.17	119	●	319	●
12	12	55	102	0.17	120	●	320	●
12.5	14	60	107	0.17	125	●	325	●
12.7	14	60	107	0.18	127	●	327	●
13	14	60	107	0.18	130	●	330	●
13.5	14	60	107	0.18	135	●	335	●
14	14	60	107	0.19	140	●	340	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	h6 mm	mm	mm	f steinl. st. ● (mm/U)	11142... Ident. No.		11142... Ident. No.	
14.5	16	65	115	0.19	145	●	345	●
15	16	65	115	0.19	150	●	350	●
15.5	16	65	115	0.2	155	●	355	●
16	16	65	115	0.2	160	●	360	●
16.5	18	73	123	0.21	165	●	365	●
16.9	18	73	123	0.22	169	●	369	●
17	18	73	123	0.23	170	●	370	●
17.5	18	73	123	0.24	175	●	375	●
18	18	73	123	0.25	180	●	380	●
18.5	20	79	131	0.26	185	●	385	●
18.9	20	79	131	0.27	189	●	389	●
19	20	79	131	0.28	190	●	390	●
19.5	20	79	131	0.29	195	○	395	●
20	20	79	131	0.3	200	●	400	●

Prod. Gr. 113

ATORN® high-performance drill bit, solid carbide ULTRA M HPC 5xD with internal cooling

For machining stainless steel and titanium

VHM | ULTRA M | 5xD | HPC VA | 140° | IK | HA | HB

Application:
For HPC boring in stainless steel, titanium alloys, nickel alloys and special alloys.

Execution:
- Solid carbide high-performance drill ULTRA M

Advantage:
- innovative cutting geometry with extremely effective cutting edge
- newly developed form-fitting ULTRA M coating for improved service life
- Cutting edge preparation minimises micro-fractures on the cutter



Ident. No. 030–203
Shank HA



Ident. No. 204–400
Shank HB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11147030-203				60	55										40	30	30		
11147204-400				60	55										40	30	30		

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	h6 mm	mm	mm	f steinl. st. ● (mm/U)	11147... Ident. No.		11147... Ident. No.	
3	6	28	66	0.09	030	●	230	●
3.1	6	28	66	0.09	031	●	231	●
3.2	6	28	66	0.09	032	●	232	●
3.25	6	28	66	0.09	201	●	204	●
3.3	6	28	66	0.09	033	●	233	●
3.4	6	28	66	0.09	034	●	234	●
3.5	6	28	66	0.09	035	●	235	●
3.6	6	28	66	0.09	036	●	236	●
3.7	6	28	66	0.09	037	●	237	●
3.8	6	36	74	0.09	038	●	238	●
3.9	6	36	74	0.09	039	●	239	●
4	6	36	74	0.09	040	●	240	●
4.1	6	36	74	0.09	041	●	241	●
4.2	6	36	74	0.09	042	●	242	●
4.3	6	36	74	0.09	043	●	243	●
4.4	6	36	74	0.09	044	●	244	●
4.5	6	36	74	0.09	045	●	245	●
4.6	6	36	74	0.09	046	●	246	●
4.65	6	36	74	0.09	202	●	205	●
4.7	6	36	74	0.09	047	●	247	●
4.8	6	44	82	0.09	048	●	248	●
4.9	6	44	82	0.09	049	●	249	●
5	6	44	82	0.09	050	●	250	●
5.1	6	44	82	0.09	051	●	251	●
5.2	6	44	82	0.09	052	●	252	●
5.3	6	44	82	0.09	053	●	253	●
5.4	6	44	82	0.09	054	●	254	●
5.5	6	44	82	0.1	055	●	255	●
5.55	6	44	82	0.1	203	●	206	●
5.6	6	44	82	0.1	056	●	256	●
5.7	6	44	82	0.1	057	●	257	●
5.8	6	44	82	0.1	058	●	258	●
5.9	6	44	82	0.1	059	●	259	●
6	6	44	82	0.1	060	●	260	●
6.1	8	53	91	0.1	061	●	261	●
6.2	8	53	91	0.1	062	●	262	●
6.3	8	53	91	0.1	063	●	263	●
6.4	8	53	91	0.1	064	●	264	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	h6 mm	mm	mm	f steinl. st. ● (mm/U)	11147... Ident. No.		11147... Ident. No.	
6.5	8	53	91	0.11	065	●	265	●
6.6	8	53	91	0.11	066	●	266	●
6.7	8	53	91	0.11	067	●	267	●
6.8	8	53	91	0.11	068	●	268	●
6.9	8	53	91	0.11	069	●	269	●
7	8	53	91	0.11	070	●	270	●
7.1	8	53	91	0.11	071	●	271	●
7.2	8	53	91	0.11	072	●	272	●
7.3	8	53	91	0.11	073	●	273	●
7.4	8	53	91	0.11	074	●	274	●
7.5	8	53	91	0.12	075	●	275	●
7.6	8	53	91	0.12	076	●	276	●
7.7	8	53	91	0.12	077	●	277	●
7.8	8	53	91	0.12	078	●	278	●
7.9	8	53	91	0.12	079	●	279	●
8	8	53	91	0.12	080	●	280	●
8.1	10	61	103	0.12	081	●	281	●
8.2	10	61	103	0.12	082	●	282	●
8.3	10	61	103	0.12	083	●	283	●
8.4	10	61	103	0.13	084	●	284	●
8.5	10	61	103	0.13	085	●	285	●
8.6	10	61	103	0.13	086	●	286	●
8.7	10	61	103	0.13	087	●	287	●
8.8	10	61	103	0.13	088	●	288	●
8.9	10	61	103	0.13	089	●	289	●
9	10	61	103	0.13	090	●	290	●
9.1	10	61	103	0.13	091	●	291	●
9.2	10	61	103	0.14	092	●	292	●
9.3	10	61	103	0.14	093	●	293	●
9.4	10	61	103	0.14	094	●	294	●
9.5	10	61	103	0.14	095	●	295	●
9.6	10	61	103	0.14	096	●	296	●
9.7	10	61	103	0.14	097	●	297	●
9.8	10	61	103	0.14	098	●	298	●
9.9	10	61	103	0.14	099	●	299	●
10	10	61	103	0.15	100	●	300	●
10.2	12	71	118	0.15	102	●	302	●
10.5	12	71	118	0.15	105	●	305	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	h6 mm	mm	mm	f steinl. st. ● (mm/U)	11147... Ident. No.		11147... Ident. No.	
10.8	12	71	118	0.16	108	●	308	●
11	12	71	118	0.16	110	●	310	●
11.2	12	71	118	0.16	112	●	312	●
11.5	12	71	118	0.16	115	●	315	●
11.8	12	71	118	0.17	118	●	318	●
12	12	71	118	0.17	120	●	320	●
12.2	14	77	124	0.17	122	●	322	●
12.5	14	77	124	0.17	125	●	325	●
12.7	14	77	124	0.18	127	●	327	●
13	14	77	124	0.18	130	●	330	●
13.5	14	77	124	0.18	135	●	335	●
14	14	77	124	0.19	140	●	340	●
14.2	16	83	133	0.19	142	●	342	●
14.5	16	83	133	0.19	145	●	345	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					ULTRA M		ULTRA M	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					m7		m7	
mm	h6 mm	mm	mm	f steinl. st. ● (mm/U)	11147... Ident. No.		11147... Ident. No.	
15	16	83	133	0.19	150	●	350	●
15.5	16	83	133	0.2	155	●	355	●
16	16	83	133	0.2	160	●	360	●
16.5	18	93	143	0.21	165	●	365	●
16.9	18	93	143	0.22	169	●	369	●
17	18	93	143	0.23	170	●	370	●
17.5	18	93	143	0.24	175	●	375	●
18	18	93	143	0.25	180	●	380	●
18.5	20	101	153	0.26	185	●	385	●
18.9	20	101	153	0.27	189	●	389	●
19	20	101	153	0.28	190	●	390	●
19.5	20	101	153	0.29	195	●	395	●
20	20	101	153	0.3	200	●	400	●

Prod. Gr. 113

Solid carbide ALU CC high-performance drill range

Application:
For HPC boring in the non-ferrous metals and cast iron material groups in series production.

advantage:

- innovative cutting geometry with 15° twist angle ensures optimum chip removal
- 6 drill heels ensure drilling accuracy even at high cutting speeds
- latest ALU-CC coating technology with superior form-fitting properties of the blade ensures sharp cutting edges and excellent good sliding behaviour as well as optimal chip removal






CC

HPC ALU

ATORN® high-performance drill bit, solid carbide ALU CC HPC 5xD with internal cooling (DIN 6537)

for use in non-ferrous metals

VHM | CC | 5xD | HPC ALU | 135° | IK | HA



Application:
for HPC drilling in non-ferrous metals.

Execution:

- Solid carbide high-performance drill ALU CC

Advantage:

- innovative cutting geometry with 15° twist angle and 6 drill heels ensures optimum chip removal
- 6 drill heels ensure boring accuracy even at high cutting speeds
- ALU-CC coating with outstanding form-fitting properties of the cutting edge ensures sharp cutting and excellent sliding performance

Notes:
required coolant pressure: minimum 12 bar

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11158						380	350	250	190	160	120			90					

Tool holding device					HA parallel shank		HB parallel shank	
Surface					CC		CC	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f alu ● (mm/U)	11158... Ident. No.		11158... Ident. No.	
2.5	4	21	57	0.15	025	●	274	●
2.8	4	21	57	0.15	028	●	078	●
3	6	28	66	0.15	030	●	080	●
3.25	6	28	66	0.15	232	●	085	●
3.3	6	28	66	0.2	033	●	088	●
3.5	6	28	66	0.2	035	●	090	●
3.8	6	36	74	0.2	038	●	093	●
4	6	36	74	0.2	040	●	098	●
4.2	6	36	74	0.25	042	●	100	●
4.5	6	36	74	0.25	045	●	102	●
4.6	6	36	74	0.25	046	●	110	●
4.65	6	36	74	0.25	246	●	112	●
4.8	6	44	82	0.3	048	●	120	●
5	6	44	82	0.3	050	●	130	●
5.5	6	44	82	0.35	055	●	140	●
5.8	6	44	82	0.35	058	●	150	●
6	6	44	82	0.35	060	●	155	●
6.5	8	53	91	0.4	065	●	160	●
6.8	8	53	91	0.4	068	●	170	●
7	8	53	91	0.4	070	●	175	●
7.4	8	53	91	0.45	074	●	180	●

Tool holding device					HA parallel shank		HB parallel shank	
Surface					CC		CC	
Coolant supply					Internal		Internal	
Tolerance of cutting edge Ø					h7		h7	
mm	h6 mm	mm	mm	f alu ● (mm/U)	11158... Ident. No.		11158... Ident. No.	
7.45	8	53	91	0.45	274	●		
7.8	8	53	91	0.45	078	●		
8	8	53	91	0.45	080	●		
8.5	10	61	103	0.45	085	●		
8.8	10	61	103	0.45	088	●		
9	10	61	103	0.5	090	●		
9.35	10	61	103	0.5	093	●		
9.8	10	61	103	0.5	098	●		
10	10	61	103	0.5	100	●		
10.2	12	71	118	0.55	102	●		
11	12	71	118	0.55	110	●		
11.2	12	71	118	0.55	112	●		
12	12	71	118	0.55	120	●		
13	14	77	124	0.55	130	●		
14	14	77	124	0.6	140	●		
15	16	83	133	0.6	150	●		
15.5	16	83	133	0.6	155	●		
16	16	83	133	0.6	160	●		
17	18	93	143	0.6	170	●		
17.5	18	93	143	0.6	175	●		
18	18	93	143	0.65	180	●		

				Tool holding device	HA parallel shank	
				Surface	CC	
				Coolant supply	Internal	
				Tolerance of cutting edge Ø	h7	
mm	h6 mm	mm	mm	f alu ● (mm/U)	11158... Ident. No.	
20	20	101	143	0.7	200	●

Prod. Gr. 134

ATORN® high-performance drill bit, solid carbide ALU CC HPC 8xD with internal cooling (DIN 6537)

for use in non-ferrous metals

VHM | CC | 8xD | HPC ALU | 135° | IK | HA



Application:
for HPC drilling in non-ferrous metals.

Execution:
- Solid carbide high-performance drill ALU CC

Advantage:
- innovative cutting geometry with 15° twist angle and 6 drill heels ensures optimum chip removal
- 6 drill heels ensure boring accuracy even at high cutting speeds
- ALU-CC coating with outstanding form-fitting properties of the cutting edge ensures sharp cutting and excellent sliding performance

Notes:
required coolant pressure: minimum 12 bar

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11159						380	350	250	190	160	120			90					

				Tool holding device	HA parallel shank	
				Surface	CC	
				Coolant supply	Internal	
				Tolerance of cutting edge Ø	h7	
mm	h6 mm	mm	mm	f alu ● (mm/U)	11159... Ident. No.	
2.5	4	30	66	0.15	025	○
3	6	34	72	0.15	030	○
3.3	6	34	72	0.2	033	○
3.5	6	34	72	0.2	035	○
3.8	6	43	81	0.2	038	○
4	6	43	81	0.2	040	○
4.2	6	43	81	0.25	042	○
4.5	6	43	81	0.25	045	○
4.6	6	43	81	0.25	046	○
4.8	6	57	95	0.3	048	○
5	6	57	95	0.3	050	○
5.5	6	57	95	0.35	055	○
5.8	6	57	95	0.35	058	○
6	6	57	95	0.35	060	○
6.5	8	76	114	0.4	065	○
6.8	8	76	114	0.4	068	○
7	8	76	114	0.4	070	○
7.4	8	76	114	0.45	074	○
7.8	8	76	114	0.45	078	○

				Tool holding device	HA parallel shank	
				Surface	CC	
				Coolant supply	Internal	
				Tolerance of cutting edge Ø	h7	
mm	h6 mm	mm	mm	f alu ● (mm/U)	11159... Ident. No.	
8	8	76	114	0.45	080	○
8.5	10	95	142	0.45	085	○
8.8	10	95	142	0.45	088	○
9	10	95	142	0.5	090	○
9.8	10	95	142	0.5	098	○
10	10	95	142	0.5	100	○
10.2	12	114	162	0.55	102	○
11	12	114	162	0.55	110	○
12	12	114	162	0.55	120	○
13	14	131	178	0.55	130	○
14	14	131	178	0.6	140	○
15	16	152	203	0.6	150	○
15.5	16	152	203	0.6	155	○
16	16	152	203	0.6	160	○
17	18	171	222	0.6	170	○
17.5	18	171	222	0.6	175	○
18	18	171	222	0.65	180	○
20	20	190	243	0.7	200	○

Prod. Gr. 134

high-performance drill, solid carbide TiAlSiN HPC 3xD
for hard machining up to 65 HRC

application:

for HPC boring up to 65HRC

advantage:
- high centring accuracy
- special coating for drilling hardened steels up to 65 HRC
- extremely hard, low-friction and temperature-resistant TiASiN coating for longer service life
- reinforced core with special tip and cutting chisel edge





TiAlSiN | HPC HART

high-performance deep-hole drill range – 16-30XD

Application:
For HPC deep-hole boring up to a strength of 1300 N/mm².
advantage:

- angle and diameter are co-ordinated across the whole range
- very good all-round properties and precise cutting behaviour with high cutting rates
- very good chip removal and chip control through by polished chipping space
- state-of-the-art coating technology ensures a long service life in the series
- high boring precision thanks to newly developed drill heels
- cutting edge preparation minimises micro-fractures on the cutter
- available in 40xD and 50xD on request





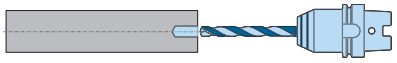

TiAlN

HPC UNI

process description, deep hole drilling

drilling the pilot bore hole

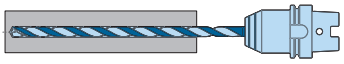
- in order to get an accurate pitch, we recommend centring with our NC spotting drill no 11169.
- for the pilot hole, we recommend our no. 11181.
- these are 0.02 mm larger in diameter than the corresponding deep-hole drills and have a tip angle of 140°.
- the pilot hole should be at least 3xD in depth, to a maximum of 5xD.



entering the pilot bore hole with the deep hole drill

deep hole drilling up to 30xD

- please enter the pilot hole at low rotation speed (n = 300 rpm) and a low feed rate (Vf = 1000 mm/min), 1-2 mm before reaching the hole base, stop the feed. then increase the rotation speed continuously until reaching the final speed. allow sufficient idling time to ensure that the cooling pump has built up enough pressure.



deep hole drilling

- carry out deep hole drilling with the recommended cutting values, do not remove chips.
- for cross-drilled holes or exiting, reduce the feed by 50 %.



extending the deep hole drill

- retract the deep hole drill by about 1-2 mm from the base of the hole
- reduce the rotation speed to (n = 300 rpm) and travel out of the hole with a low feed rate of (Vf = 1000 mm/min). Cooling must be switched off during this process.



ATORN® high-performance pilot drill bit, solid carbide TiAlN 5xD with internal cooling

for universal use up to 1300 N/mm²

VHM | TiAlN | 5xD | HPC UNI | 140° | IK | HA



Application:
For placing a pilot hole for deep-hole drills from 12xD with HPC geometry up to a strength of 1300 N/mm².

Execution:

- Solid carbide TiAlN high-performance drill

Advantage:

- Precision grinding for very accurate holes in terms of fit and shape for demanding requirements around dimensional tolerance
- very precise guidance due to innovative geometry
- High-performance coating provides high cutting parameters and long service life
- the entire range is coordinated in terms of angle and diameter

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11181202-442	95	80	65	50	40	200	250	230	180	160	130			95	35	30	30		

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11181... Ident. No.	
2.02	4	21	57	0.08	202	●
2.22	4	21	57	0.08	208	●
2.32	4	21	57	0.08	214	●
2.42	4	21	57	0.08	220	●
2.52	4	21	57	0.08	226	●
2.62	4	21	57	0.08	232	●
2.72	4	21	57	0.08	238	●
2.82	4	21	57	0.08	244	●
2.92	4	21	57	0.08	250	●
3.02	6	28	66	0.08	256	●
3.22	6	28	66	0.08	262	●
3.32	6	28	66	0.08	268	●
3.52	6	28	66	0.08	274	●
3.82	6	36	74	0.15	280	●
4.02	6	36	74	0.15	286	●
4.22	6	36	74	0.15	292	●
4.52	6	36	74	0.15	298	●
4.82	6	44	82	0.15	304	●
5.02	6	44	82	0.15	310	●
5.52	6	44	82	0.15	316	●

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11181... Ident. No.	
5.82	6	44	82	0.25	322	●
6.02	6	44	82	0.25	328	●
6.52	8	53	91	0.25	334	●
6.82	8	53	91	0.25	340	●
7.02	8	53	91	0.25	346	●
7.52	8	53	91	0.25	352	●
7.82	8	53	91	0.25	364	●
8.02	8	53	91	0.25	370	●
8.52	10	61	103	0.27	376	●
8.82	10	61	103	0.27	382	●
9.02	10	61	103	0.27	388	●
9.52	10	61	103	0.27	394	●
9.82	10	61	103	0.27	400	●
10.02	10	61	103	0.27	406	●
10.22	12	71	118	0.27	412	●
10.82	12	71	118	0.27	418	●
11.02	12	71	118	0.27	424	●
11.52	12	71	118	0.27	430	●
11.82	12	71	118	0.27	436	●
12.02	12	71	118	0.27	442	●

Prod. Gr. 113

ATORN® high-performance deep hole drill bit, solid carbide TiAlN HPC 16xD with internal cooling

for universal use up to 1300 N/mm²



VHM | TiAlN | 16xD | HPC UNI | 135° | IK | HA

Application:
For HPC deep-hole boring up to a strength of 1300 N/mm².

Execution:
- High-performance deep-hole drill, solid carbide TiAlN, and 4 drill heels

Advantage:
- very good all-round properties and precise cutting performance with high cutting rates
- unique, extremely hard, low-friction, temperature-resistant and form-fitting TiAlN coating ensures a longer service life
- Cutting edge preparation minimises micro-fractures on the cutter
- the entire range is coordinated in terms of angle and diameter

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11179430-520	90	75	65	35	30	200	250	180	160	160	130			80	35	30	30		

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11179... Ident. No.	
3	6	60	100	0.08	430	●
3.2	6	60	100	0.08	432	●
3.3	6	60	100	0.08	433	●
3.5	6	60	100	0.08	435	●
3.8	6	75	115	0.08	438	●
4	6	75	115	0.08	440	●
4.2	6	75	115	0.08	442	●
4.5	6	90	130	0.08	445	●
4.8	6	90	130	0.08	448	●
5	6	90	130	0.08	450	●
5.5	6	108	150	0.12	455	●
5.8	6	108	150	0.12	458	●
6	6	108	150	0.12	460	●
6.5	8	125	165	0.12	465	●
6.8	8	125	165	0.12	468	●
7	8	125	165	0.12	470	●

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11179... Ident. No.	
7.5	8	140	180	0.12	475	●
7.8	8	140	180	0.12	478	●
8	8	140	180	0.12	480	●
8.5	10	160	205	0.15	485	●
8.8	10	160	205	0.15	488	●
9	10	160	205	0.15	490	●
9.5	10	160	205	0.15	495	●
9.8	10	180	225	0.15	498	●
10	10	180	225	0.15	500	●
10.2	12	190	240	0.15	502	●
10.5	12	190	240	0.15	505	●
10.8	12	190	240	0.15	508	●
11	12	190	240	0.15	510	●
11.5	12	190	240	0.15	515	●
11.8	12	215	265	0.15	518	●
12	12	215	265	0.15	520	●

Prod. Gr. 113

ATORN® high-performance deep hole drill bit, solid carbide TiAlN HPC 20xD with internal cooling

For universal use up to 1300 N/mm²



VHM | TiAlN | 20xD | HPC UNI | 135° | IK | HA

Application:
For HPC deep-hole boring up to a strength of 1300 N/mm².

Execution:
- High-performance deep-hole drill, solid carbide TiAlN, and 4 drill heels

Advantage:
- very good all-round properties and precise cutting performance with high cutting rates
- unique, extremely hard, low-friction, temperature-resistant and form-fitting TiAlN coating ensures a longer service life
- Cutting edge preparation minimises micro-fractures on the cutter
- the entire range is coordinated in terms of angle and diameter

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titanalloy	Nickelalloy	Superalloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11181020-120	90	75	65	35	30	200	250	180	160	160	130			80	35	30	30		

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11181... Ident. No.	
2	6	50	92	0.05	020	●
2.2	6	50	92	0.05	022	●
2.3	6	50	92	0.05	023	●
2.4	6	70	112	0.05	024	●
2.5	6	70	112	0.05	025	●
2.7	6	70	112	0.05	027	●
2.8	6	70	112	0.05	028	●
2.9	6	70	112	0.05	029	●
3	6	80	120	0.08	030	●
3.2	6	80	120	0.08	032	●
3.3	6	80	120	0.08	033	●
3.5	6	80	120	0.08	035	●
3.8	6	90	130	0.08	038	●
4	6	90	130	0.08	040	●
4.2	6	110	160	0.08	042	●
4.5	6	110	160	0.08	045	●
4.6	6	120	160	0.08	046	●
4.8	6	120	160	0.08	048	●
5	6	120	160	0.08	050	●
5.5	6	140	185	0.12	055	●
5.8	6	140	185	0.12	058	●

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11181... Ident. No.	
6	6	140	185	0.12	060	●
6.5	8	160	210	0.12	065	●
6.8	8	160	210	0.12	068	●
7	8	160	210	0.12	070	●
7.5	8	180	230	0.12	075	●
7.8	8	180	230	0.12	078	●
8	8	180	230	0.12	080	●
8.5	10	195	260	0.15	085	●
8.8	10	230	290	0.15	088	●
9	10	230	290	0.15	090	●
9.5	10	230	290	0.15	095	●
9.8	10	230	290	0.15	098	●
10	10	230	290	0.15	100	●
10.2	12	268	315	0.15	102	●
10.5	12	268	315	0.15	105	○
10.8	12	268	315	0.15	108	●
11	12	268	315	0.15	110	●
11.5	12	268	315	0.15	115	●
11.8	12	268	315	0.15	118	●
12	12	268	315	0.15	120	●

Prod. Gr. 113

ATORN® high-performance deep hole drill bit, solid carbide TiAlN HPC 25xD with internal cooling

for universal use up to 1300 N/mm²



VHM | TiAlN | 25xD | HPC UNI | 135° | IK | HA

Application:
For HPC deep-hole boring up to a strength of 1300 N/mm².

Execution:
- High-performance deep-hole drill, solid carbide TiAlN, and 4 drill heels

Advantage:
- very good all-round properties and precise cutting performance with high cutting rates
- unique, extremely hard, low-friction, temperature-resistant and form-fitting TiAlN coating ensures a longer service life
- Cutting edge preparation minimises micro-fractures on the cutter
- the entire range is coordinated in terms of angle and diameter

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titanalloy	Nickelalloy	Superalloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11189230-320	60	50	35	35	30	150	200	160	140	140	120			70	30	20	20		

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11189... Ident. No.	
3	6	98	135	0.08	230	●
3.2	6	98	135	0.08	232	●
3.3	6	110	150	0.08	233	●
3.5	6	110	150	0.08	235	●
3.8	6	120	160	0.08	238	●

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11189... Ident. No.	
4	6	120	160	0.08	240	●
4.2	6	120	160	0.08	242	●
4.5	6	135	180	0.08	245	●
4.8	6	135	180	0.08	248	●
5	6	135	180	0.08	250	●

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11189... Ident. No.	
5.5	6	168	205	0.12	255	●
5.8	6	168	205	0.12	258	●
6	6	168	205	0.12	260	●
6.5	8	200	240	0.12	265	●
6.8	8	200	240	0.12	268	●
7	8	200	240	0.12	270	●
7.5	8	220	260	0.12	275	●
7.8	8	220	260	0.12	278	●
8	8	220	260	0.12	280	●
8.5	10	240	285	0.15	285	●
8.8	10	268	310	0.15	288	●

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11189... Ident. No.	
9	10	268	310	0.15	290	●
9.5	10	268	310	0.15	295	●
9.8	10	268	310	0.15	298	●
10	10	268	310	0.15	300	●
10.2	12	325	375	0.15	302	●
10.5	12	325	375	0.15	305	●
10.8	12	325	375	0.15	308	●
11	12	325	375	0.15	310	●
11.5	12	325	375	0.15	315	●
11.8	12	325	375	0.15	318	●
12	12	325	375	0.15	320	●

Prod. Gr. 113

ATORN® high-performance deep hole drill bit, solid carbide TiAlN HPC 30xD with internal cooling

for universal use up to 1300 N/mm²

VHM | TiAlN | 30xD | HPC UNI | 135° | IK | HA

Application:
For HPC deep-hole boring up to a strength of 1300 N/mm².

Execution:
- High-performance deep-hole drill, solid carbide TiAlN, and 4 drill heels

Advantage:
- very good all-round properties and precise cutting performance with high cutting rates
- unique, extremely hard, low-friction, temperature-resistant and form-fitting TiAlN coating ensures a longer service life
- Cutting edge preparation minimises micro-fractures on the cutter
- the entire range is coordinated in terms of angle and diameter

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11182	80	60	40	35	30	150	200	160	140	140	120			70	30	20	20		

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11182... Ident. No.	
2	4	70	115	0.05	020	●
2.2	4	70	115	0.05	022	●
2.3	4	70	115	0.05	023	●
2.4	4	90	138	0.05	024	●
2.5	4	90	138	0.05	025	●
2.7	4	90	138	0.05	027	●
2.8	4	90	138	0.05	028	●
2.9	4	90	138	0.05	029	●
3	6	105	150	0.05	030	●
3.2	6	105	150	0.08	032	●
3.3	6	135	185	0.08	033	●
3.5	6	135	185	0.08	035	●
3.8	6	135	185	0.08	038	●
4	6	135	185	0.08	040	●
4.2	6	135	185	0.08	042	●
4.5	6	165	215	0.08	045	●
4.6	6	165	215	0.08	046	●
4.8	6	165	215	0.08	048	●
5	6	165	215	0.08	050	●
5.5	6	180	230	0.12	055	●
5.8	6	180	230	0.12	058	●

Tool holding device	HA parallel shank
Surface	TiAlN
Coolant supply	Internal
Tolerance of cutting edge Ø	h7

mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11182... Ident. No.	
6	6	180	230	0.12	060	●
6.5	8	215	280	0.12	065	●
6.8	8	230	280	0.12	068	●
7	8	230	280	0.12	070	●
7.5	8	230	280	0.12	075	●
7.8	8	265	315	0.12	078	●
8	8	265	315	0.12	080	●
8.5	10	295	350	0.15	085	●
8.8	10	330	380	0.15	088	●
9	10	330	380	0.15	090	●
9.5	10	330	380	0.15	095	○
9.8	10	330	380	0.15	098	●
10	10	330	380	0.15	100	●
10.2	12	380	430	0.15	102	●
10.5	12	380	430	0.15	105	●
10.8	12	380	430	0.15	108	●
11	12	380	430	0.15	110	●
11.5	12	380	430	0.15	115	●
11.8	12	380	430	0.15	118	●
12	12	380	430	0.15	120	●

Prod. Gr. 113

high-performance solid carbide micro drill

Application:
For HPC micro boring up to a strength of 1300 N/mm².

advantage:
- extremely hard, low-friction, temperature resistant and conforming coating ensures an increased service life
- high-quality solid carbide cutting material and cutting edge preparation minimise breakouts on the blade
- diameter of 0.10 mm to 3.00 mm
- uncoated variant for non-ferrous metals



ATORN® micro drill bit, solid carbide, HPC 5xD without internal cooling

for universal use up to 1300 N/mm²



Application:
For HPC boring up to a strength of 1300 N/mm².

Execution:
- High-performance drill, solid carbide, with universal precision grinding and 3 H6 straight shank

Advantage:
- innovative cutting geometry for universal use
- maximum concentricity: ensures series machining with process reliability
- **Ident. No. 010–300:** Extremely hard, low-friction, temperature-resistant, form-fitting coating
- **Ident. No. 310–600:** extremely sharp cutters ensure reliable machining even with long chipping non-ferrous metals



Ident. No. 010–300



Ident. No. 310–600

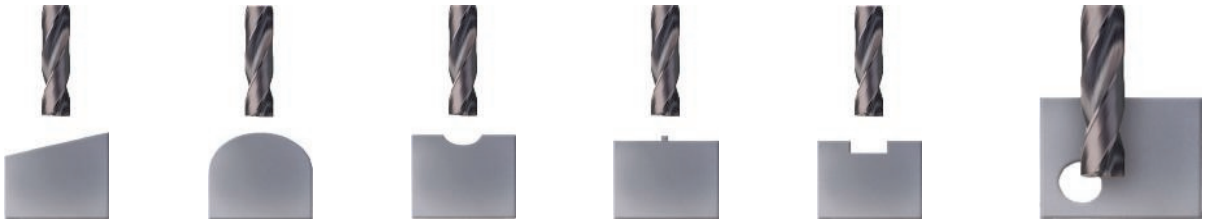
Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11137010-300	60	60	40	30	30	150	190	100	110	130	140	50	40	90	30	20	20		
11137310-600	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		

Tool holding device					HA parallel shank		HA parallel shank	
Surface					TiAlN		Uncoated	
Coolant supply					External		External	
Tolerance of cutting edge Ø					h7		h7	
mm	mm	mm	mm	f steel 1000 ● (mm/U)	11137... Ident. No.		11137... Ident. No.	
0.1	3	1	38	0.01	010	●	310	●
0.15	3	2	38	0.01	015	●	315	●
0.2	3	2.5	38	0.01	020	●	320	●
0.25	3	4	38	0.01	025	●	325	●
0.3	3	5.5	38	0.01	030	●	330	●
0.35	3	5.5	38	0.01	035	●	335	●
0.4	3	6	38	0.01	040	●	340	●
0.45	3	6	38	0.01	045	●	345	●
0.5	3	6	38	0.015	050	●	350	●
0.55	3	8	38	0.015	055	●	355	●
0.6	3	8	38	0.015	060	●	360	●
0.65	3	8	38	0.015	065	●	365	●
0.7	3	8	38	0.015	070	●	370	●
0.75	3	8	38	0.015	075	●	375	●
0.8	3	8	38	0.015	080	●	380	●
0.85	3	8	38	0.015	085	●	385	●
0.9	3	8	38	0.015	090	●	390	●
0.95	3	8	38	0.015	095	●	395	●
0.97	3	8	38	0.02	097	●	397	●
0.98	3	8	38	0.02	098	●	398	●
0.99	3	8	38	0.02	099	●	399	●
1	3	10	38	0.02	100	●	400	●
1.01	3	10	38	0.02	101	●	401	●
1.02	3	10	38	0.03	102	●	402	●
1.03	3	10	38	0.03	103	●	403	●
1.05	3	10	38	0.03	105	●	405	●
1.1	3	10	38	0.03	110	●	410	●
1.15	3	10	38	0.03	115	●	415	●
1.2	3	10	38	0.03	120	●	420	●
1.25	3	10	38	0.03	125	●	425	●
1.3	3	10	38	0.03	130	●	430	●
1.35	3	10	38	0.03	135	●	435	●
1.4	3	10	38	0.03	140	●	440	●
1.45	3	10	38	0.03	145	●	445	●
1.47	3	10	38	0.03	147	●	447	●
1.48	3	10	38	0.03	148	●	448	●
1.49	3	10	38	0.03	149	●	449	●
1.5	3	12	38	0.03	150	●	450	●
1.51	3	12	38	0.03	151	●	451	●
1.52	3	12	38	0.03	152	●	452	●
1.53	3	12	38	0.03	153	●	453	●
1.55	3	12	38	0.03	155	●	455	●

Tool holding device					HA parallel shank		HA parallel shank	
Surface					TiAlN		Uncoated	
Coolant supply					External		External	
Tolerance of cutting edge Ø					h7		h7	
mm	mm	mm	mm	f steel 1000 ● (mm/U)	11137... Ident. No.		11137... Ident. No.	
1.6	3	12	38	0.03	160	●	460	●
1.65	3	12	38	0.03	165	●	465	●
1.7	3	12	38	0.03	170	●	470	●
1.75	3	12	38	0.03	175	●	475	●
1.8	3	12	38	0.03	180	●	480	●
1.85	3	12	38	0.03	185	●	485	●
1.9	3	12	38	0.03	190	●	490	●
1.95	3	12	38	0.03	195	●	495	●
1.97	3	12	38	0.03	197	●	497	●
1.98	3	12	38	0.03	198	●	498	●
1.99	3	12	38	0.03	199	●	499	●
2	3	12	38	0.05	200	●	500	●
2.01	3	12	38	0.05	201	●	501	●
2.02	3	12	38	0.05	202	●	502	●
2.03	3	12	38	0.05	203	●	503	●
2.05	3	12	38	0.05	205	●	505	●
2.1	3	12	38	0.05	210	●	510	●
2.15	3	12	38	0.05	215	●	515	●
2.2	3	12	38	0.05	220	●	520	●
2.25	3	12	38	0.05	225	●	525	●
2.3	3	12	38	0.05	230	●	530	●
2.35	3	12	38	0.05	235	●	535	●
2.4	3	12	38	0.05	240	●	540	●
2.45	3	12	38	0.05	245	●	545	●
2.5	3	12	38	0.05	250	●	550	●
2.51	3	12	38	0.06	251	●	551	●
2.52	3	12	38	0.06	252	●	552	●
2.53	3	12	38	0.06	253	●	553	●
2.55	3	12	38	0.06	255	●	555	●
2.56	3	12	38	0.06	256	●	556	●
2.65	3	12	38	0.06	265	●	565	●
2.7	3	12	38	0.06	270	●	570	●
2.75	3	12	38	0.06	275	●	575	●
2.8	3	12	38	0.06	280	●	580	●
2.85	3	12	38	0.06	285	●	585	●
2.9	3	12	38	0.06	290	●	590	●
2.95	3	12	38	0.06	295	●	595	●
2.96	3	12	38	0.06	296	○	596	●
2.97	3	12	38	0.06	297	●	597	●
2.98	3	12	38	0.06	298	●	598	●
2.99	3	12	38	0.06	299	●	599	●
3	3	12	38	0.06	300	●	600	●

Prod. Gr. 113

high-performance drill 180° solid carbide TiAlN



applications:
for producing drill holes with 180° base of bore hole.

advantages:
- spot drilling on inclined surfaces
- spot drilling on convex surfaces
- spot drilling despite centre waste
- spot drilling in existing drill holes
- drilling through cross holes






TiAlN | HPC UNI

ATORN® 180° high-performance drill bit, solid carbide TiAlN 5xD with internal cooling

For universal use up to 1000 N/mm²

VHM | TiAlN | 5xD | 180° | IK | HA



Application:
For producing drill holes with 180° drill base in a single action for universal application up to 1000 N/mm².

Execution:
- Heavy-duty solid carbide drill with 180° precision grinding and drill heels

Advantage:
- drilling and counterboring in a single work step at high cutting speed
- Innovative geometry ensures good chip removal

Notes:
maximum spot drilling surface angle 15°
correction factor = 0.25
when spot drilling, multiply feed rate f [mm/U] by correction factor Kf
– spot drill at reduced feed rate until tool reaches 0.25xD across full ø
– for angled spot drilling: retract at double feed rate f [mm/U]
– after spot drilling at reduced feed rate (correction factor) drilling continues
at feed rate f [mm/U] according to recommended cutting data without correction factors

Tool holding device					HA parallel shank	
Surface					TiAlN	
Coolant supply					Internal	
Tolerance of cutting edge Ø					h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11168... Ident. No.	
8	8	53	91	0.13	280	●
9	10	61	103	0.14	290	●
10	10	61	103	0.14	300	●
11	12	69	116	0.16	310	●

Tool holding device					HA parallel shank	
Surface					TiAlN	
Coolant supply					Internal	
Tolerance of cutting edge Ø					h7	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11168... Ident. No.	
15	16	81	131	0.18	350	●
18	18	91	141	0.20	380	●
20	20	99	151	0.23	400	●

Prod. Gr. 1AB

Solid carbide TiAlN high-performance drill reamer range

Application:

For producing clearance bore holes up to a strength of 1300 N/mm².

advantage:
- drilling and reaming in one work step, ensures high profitability
- innovative cutting geometry with 6 drill heels ensures high bore hole quality
- long service life owing to high-quality cutting material and coating






H7 | TiAlN | HPC

ATORN® high-performance drill reamer, solid carbide TiAlN 5xD with internal cooling

For universal use up to 1000 N/mm²

VHM | TiAlN | 5xD | 140° | IK | HA | H7



Application:
For producing H7 drill holes in a single action for universal application up to 1000 N/mm².

Execution:
- high-performance drill reamer with 6 drill heels

Advantage:
- drilling and reaming in H7 quality in a single work step at a high cutting speed
- innovative geometry for productively and reliably machining holes in H7 quality

				Tool holding device	HA parallel shank	
				Surface	TiAlN	
				Coolant supply	Internal	
mm	h6 mm	mm	mm	f steel 1000 ● (mm/U)	11175... Ident. No.	
5.98	6	53	91	0.19	400	●
5.99	6	53	91	0.19	402	●
6	6	53	91	0.19	404	●
6.01	6	53	91	0.19	406	●
6.02	6	53	91	0.19	408	●
7.98	8	53	91	0.23	410	●
7.99	8	53	91	0.23	412	●
8	8	53	91	0.23	414	●
8.01	8	53	91	0.23	416	●
8.02	8	53	91	0.23	418	●
9.98	10	61	103	0.28	420	●
9.99	10	61	102	0.28	422	●
10	10	61	103	0.28	424	●
10.01	10	61	103	0.28	426	●
10.02	10	61	103	0.28	428	●
11.98	12	71	118	0.32	430	●
11.99	12	71	118	0.32	432	●
12	12	71	118	0.32	434	●
12.01	12	71	118	0.32	436	●
12.02	12	71	118	0.32	438	●
14	14	77	124	0.35	440	●
16	16	83	133	0.37	442	●
18	18	93	143	0.39	444	●
20	20	101	153	0.40	446	●

Prod. Gr. 117

solid carbide drill 3-blade

Application:
for precise position and shape drilling into the main body.

advantage:
- special geometry with 3 cutting edges: innovative cutting geometry for precise position and shape drilling into the main body without centring
- universal application: wide range of cemented carbide qualities and geometries for wide-ranging applications, therefore longer service life and high process stability







TiN | Z 3

ATORN® Solid carbide high-performance drill 3-flute without IC

for universal use up to 1300 N/mm²

VHM | TiN | 5xD | 150° | HA | Z 3

Application:
No. 11164 030–11164 102, 11167 030–11167 102: Special geometry with 3 cutting edges for precise position and shape drilling into the main body.
No. 11166: special geometry with 3 cutting edges for precise position and shape drilling into the main body.

Execution:
- **No. 11164:** SC drill bit, 3-edge, uncoated, **for machining steels up to 1000 N/mm²**
- **No. 11166:** SC drill bit, 3-edge, TiN **for machining steels and non-ferrous metals**
- **No. 11167:** SC drill bit, 3-edge, 3xD, uncoated, **for machining cast and non-ferrous metals**

Advantage:
- special geometry with three cutting edges: innovative cutting geometry for precise position and shape drilling into the main body



No. 11164



No. 11166



No. 11167

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11164	80	70	50	35	30	170	200	120	100	70	60	50		80					
11166	85	75	55	35		180	210	140						80					
11167	85	75	55	35	30	180	210	140	100	70	60	50		90					

				Tool holding device	HA parallel shank		HA parallel shank		HA parallel shank	
				Surface	Uncoated		TiN		Uncoated	
				Coolant supply	External		External		External	
				Tolerance of cutting edge Ø	h7		h7		h7	
mm	mm	mm	mm	f steel 1000 ● (mm/U)	11164... Ident. No.		11166... Ident. No.		11167... Ident. No.	
3	3	22	46	0.09	030	●	030	●	030	●
3.2	3.2	24	49	0.09	032	●	032	●	032	●
3.3	3.3	24	49	0.09	033	●	033	●	033	●
3.5	3.5	27	52	0.09	035	●	035	●	035	●
3.8	3.8	30	55	0.09	038	●	038	●	038	●
4	4	30	55	0.09	040	●	040	●	040	●
4.2	4.2	30	55	0.09	042	●	042	●	042	●
4.5	4.5	32	58	0.09	045	●	045	●	045	●
4.8	4.8	35	62	0.09	048	●	048	●	048	●
5	5	35	62	0.09	050	●	050	●	050	●
5.5	5.5	39	66	0.1	055	●	055	●	055	●
5.8	5.8	39	66	0.1	058	●	058	●	058	●
6	6	39	66	0.11	060	●	060	●	060	●
6.5	6.5	42	70	0.12	065	●	065	●	065	●
6.8	6.8	45	74	0.12	068	●	068	●	068	●
7	7	45	74	0.12	070	●	070	●	070	●
7.5	7.5	45	74	0.13	075	●	075	●	075	●
7.8	7.8	48	79	0.14	078	●	078	●	078	●
8	8	48	79	0.14	080	●	080	●	080	●
8.5	8.5	48	79	0.15	085	●	085	●	085	●
9	9	52	84	0.16	090	●	090	●	090	●
9.5	9.5	52	84	0.17	095	●	095	●	095	●
9.8	9.8	55	89	0.18	098	●	098	●	098	●
10	10	55	89	0.19	100	●	100	●	100	●
10.2	10.2	55	89	0.19	102	●	102	●	102	●

Prod. Gr. 113

Twist drill, solid carbide, TYPE N range

Application:
Standard geometry for use up to a strength of 1300 N/mm².
advantage:

- excellent all-round properties and precise cutting behaviour in a wide range of materials
- universal application: minimises tool costs and improves flexibility
- high-quality cutting material and cutting edge preparation minimise micro-fractures on the cutter





Typ N

TiAlN

ATORN® Twist drill solid carbide 3xD type N without IC (DIN 1897)

for universal use up to 1300 N/mm²

VHM | TiAlN | 118° | 3xD | Typ N | HA

Application:
Standard geometry for use up to a strength of 1300 N/mm².

Execution:

- Standard solid carbide tool with universal precision grinding

Advantage:

- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- Cutting edge preparation minimises micro-fractures on the cutter
- **No. 11153:** TiAlN coating for up to 50% longer service life, dry processing possible in steel



No. 11150



No. 11153

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11150	70	60	50	30	28	140	190	130	120	130	120	100	80	80	25	25	25		
11153	80	70	60	32	30	150	200	140	150	150	130	100	80	90	30	30	30		

Tool holding device				HA parallel shank		HA parallel shank	
Surface				Uncoated		TiAlN	
Coolant supply				External		External	
Tolerance of cutting edge Ø				h7		h7	
mm	mm	mm	f steel 1000 ● (mm/U)	11150... Ident. No.		11153... Ident. No.	
0.5	3	20	0.02	005	●	005	●
0.6	3.5	21	0.02	006	●	006	●
0.7	4.5	23	0.02	007	●	007	●
0.8	5	24	0.02	008	●	008	●
0.9	5.5	25	0.02	009	●	009	●
1	6	26	0.03	010	●	010	●
1.1	7	28	0.03	011	●	011	●
1.2	8	30	0.03	012	●	012	●
1.3	8	30	0.03	013	●	013	●
1.4	9	32	0.05	014	●	014	●
1.5	9	32	0.05	015	●	015	●
1.6	10	34	0.06	016	●	016	●
1.7	10	34	0.06	017	●	017	●
1.8	11	36	0.06	018	●	018	●
1.9	11	36	0.06	019	●	019	●
2	12	38	0.06	020	●	020	●
2.1	12	38	0.07	021	●	021	●
2.2	13	40	0.07	022	●	022	●
2.3	13	40	0.07	023	●	023	●
2.4	14	43	0.07	024	●	024	●
2.5	14	43	0.07	025	●	025	●
2.6	14	43	0.08	026	●	026	●
2.7	16	46	0.08	027	●	027	●
2.8	16	46	0.08	028	●	028	●
2.9	16	46	0.08	029	●	029	●
3	16	46	0.09	030	●	030	●
3.1	18	49	0.09	031	●	031	●
3.2	18	49	0.09	032	●	032	●
3.3	18	49	0.09	033	●	033	●
3.4	20	52	0.09	034	●	034	●
3.5	20	52	0.09	035	●	035	●
3.6	20	52	0.09	036	●	036	●
3.7	20	52	0.09	337	●	337	●
3.8	22	55	0.09	038	●	038	●
3.9	22	55	0.09	039	●	039	●
4	22	55	0.09	040	●	040	●
4.1	22	55	0.09	041	●	041	●
4.2	22	55	0.09	042	●	042	●
4.3	24	58	0.09	043	●	043	●
4.4	24	58	0.09	344	●	344	●
4.5	24	58	0.09	045	●	045	●
4.6	24	58	0.09	046	●	046	●
4.7	24	58	0.09	347	●	347	●
4.8	26	62	0.09	048	●	048	●
4.9	26	62	0.09	349	●	349	●
5	26	62	0.09	050	●	050	●
5.1	26	62	0.09	051	●	051	●
5.2	26	62	0.09	052	●	052	●
5.3	26	62	0.09	353	●	353	●
5.4	28	66	0.09	354	●	354	●
5.5	28	66	0.1	055	●	055	●
5.6	28	66	0.1	356	●	356	●
5.7	28	66	0.1	357	●	357	●

Tool holding device				HA parallel shank		HA parallel shank	
Surface				Uncoated		TiAlN	
Coolant supply				External		External	
Tolerance of cutting edge Ø				h7		h7	
mm	mm	mm	f steel 1000 ● (mm/U)	11150... Ident. No.		11153... Ident. No.	
5.8	28	66	0.1	058	●	058	●
5.9	28	66	0.1	359	●	359	●
6	28	66	0.1	060	●	060	●
6.1	31	70	0.1	061	●	061	●
6.2	31	70	0.1	362	●	362	●
6.3	31	70	0.1	363	●	363	●
6.4	31	70	0.1	364	●	364	●
6.5	31	70	0.11	065	●	065	●
6.6	31	70	0.11	366	●	366	●
6.7	31	70	0.11	367	●	367	●
6.8	34	74	0.11	068	●	068	●
6.9	34	74	0.11	369	●	369	●
7	34	74	0.11	070	●	070	●
7.1	34	74	0.11	371	●	371	●
7.2	34	74	0.11	372	●	372	●
7.3	34	74	0.11	373	●	373	●
7.4	34	74	0.11	374	●	374	●
7.5	34	74	0.12	075	●	075	●
7.6	37	79	0.12	376	●	376	●
7.7	37	79	0.12	377	●	377	●
7.8	37	79	0.12	378	●	378	●
7.9	37	79	0.12	379	●	379	●
8	37	79	0.12	080	●	080	●
8.1	37	79	0.12	081	●	081	●
8.2	37	79	0.12	082	●	082	●
8.3	37	79	0.12	383	●	383	●
8.4	37	79	0.13	384	●	384	●
8.5	37	79	0.13	085	●	085	●
8.6	40	84	0.13	386	●	386	●
8.7	40	84	0.13	387	●	387	●
8.8	40	84	0.13	388	●	388	●
8.9	40	84	0.13	389	●	389	●
9	40	84	0.13	090	●	090	●
9.1	40	84	0.13	391	●	391	●
9.2	40	84	0.14	392	●	392	●
9.3	40	84	0.14	393	●	393	●
9.4	40	84	0.14	394	●	394	●
9.5	40	84	0.14	095	●	095	●
9.6	43	89	0.14	396	●	396	●
9.7	43	89	0.14	397	●	397	●
9.8	43	89	0.14	098	●	098	●
9.9	43	89	0.14	399	●	399	●
10	43	89	0.15	100	●	100	●
10.2	43	89	0.15	102	●	102	●
10.5	43	89	0.15	105	●	105	●
11	47	95	0.16	110	●	110	●
11.2	47	95	0.16	112	●	112	●
11.5	47	95	0.16	115	●	115	●
12	51	102	0.17	120	●	120	●
13	51	102	0.18	130	●	130	●
14	54	107	0.19	140	●	140	●
15	56	111	0.19	150	●	150	●
16	58	115	0.2	160	●	160	●

Prod. Gr. 1AB

ATORN® Twist drill solid carbide 5xD type N without IC (DIN 338)

for universal use up to 1300 N/mm²

VHM | TiAlN | 118° | 5xD | Typ N | HA

Application:
Standard geometry for use up to a strength of 1300 N/mm².

Execution:
- **No. 11155:** Standard solid carbide tool with universal precision grinding
- **No. 11157:** Standard solid carbide tool with universal precision-ground flutes

Advantage:
- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- Cutting edge preparation minimises micro-fractures on the cutter
- **No. 11157:** TiAlN coating for up to 50% longer service life, dry processing possible in steel



No. 11155



No. 11157

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11155	70	60	50	30	28	140	190	130	120	130	120	100	80	80	25	25	25		
11157	80	70	60	32	30	150	200	140	150	150	130	100	80	90	30	30	30		

Tool holding device				HA parallel shank		HA parallel shank	
Surface				Uncoated		TiAlN	
Coolant supply				External		External	
Tolerance of cutting edge Ø				h7		h7	
mm	mm	mm	f steel 1000 ● (mm/U)	11155... Ident. No.		11157... Ident. No.	
1	12	34	0.04	010	●	010	●
1.1	14	36	0.04	011	●	011	●
1.2	16	38	0.05	012	●	012	●
1.3	16	38	0.05	013	●	013	●
1.4	18	40	0.05	014	●	014	●
1.5	18	40	0.05	015	●	015	●
1.6	20	43	0.06	016	●	016	●
1.7	20	43	0.06	017	●	017	●
1.8	22	46	0.06	018	●	018	●
1.9	22	46	0.06	019	●	019	●
2	24	49	0.06	020	●	020	●
2.1	24	49	0.07	021	●	021	●
2.2	27	53	0.07	022	●	022	●
2.3	27	53	0.07	023	●	023	●
2.4	30	57	0.07	024	●	024	●
2.5	30	57	0.07	025	●	025	●
2.6	30	57	0.08	026	●	026	●
2.7	33	61	0.08	027	●	027	●
2.8	33	61	0.08	028	●	028	●
2.9	33	61	0.08	029	●	029	●
3	33	61	0.09	030	●	030	●
3.1	36	65	0.09	031	●	031	●
3.2	36	65	0.09	032	●	032	●
3.3	36	65	0.09	033	●	033	●
3.4	39	70	0.09	034	●	034	●
3.5	39	70	0.09	035	●	035	●
3.6	39	70	0.09	036	●	036	●
3.7	39	70	0.09	037	●	037	●
3.8	43	75	0.09	038	●	038	●
3.9	43	75	0.09	039	●	039	●
4	43	75	0.09	040	●	040	●
4.1	43	75	0.09	041	●	041	●
4.2	43	75	0.09	042	●	042	●
4.3	47	80	0.09	043	●	043	●
4.4	47	80	0.09	044	●	344	●
4.5	47	80	0.09	045	●	045	●
4.6	47	80	0.09	346	●	346	●
4.7	47	80	0.09	047	●	047	●
4.8	52	86	0.09	048	●	048	●
4.9	52	86	0.09	049	●	049	●
5	52	86	0.09	050	●	050	●
5.1	52	86	0.09	051	●	051	●
5.2	52	86	0.09	052	●	052	●
5.3	52	86	0.09	053	●	053	●
5.4	57	93	0.09	354	●	354	●
5.5	57	93	0.1	055	●	055	●
5.6	57	93	0.1	356	●	356	●
5.7	57	93	0.1	057	●	057	●
5.8	57	93	0.1	058	●	058	●

Tool holding device				HA parallel shank		HA parallel shank	
Surface				Uncoated		TiAlN	
Coolant supply				External		External	
Tolerance of cutting edge Ø				h7		h7	
mm	mm	mm	f steel 1000 ● (mm/U)	11155... Ident. No.		11157... Ident. No.	
5.9	57	93	0.1	359	●	359	●
6	57	93	0.1	060	●	060	●
6.1	63	101	0.1	361	●	361	●
6.2	63	101	0.1	062	●	062	●
6.3	63	101	0.1	063	●	063	●
6.4	63	101	0.1	364	●	364	●
6.5	63	101	0.11	065	●	065	●
6.6	63	101	0.11	066	●	066	●
6.7	63	101	0.11	367	●	367	●
6.8	69	109	0.11	068	●	068	●
6.9	69	109	0.11	369	●	369	●
7	69	109	0.11	070	●	070	●
7.1	69	109	0.11	371	●	371	●
7.2	69	109	0.11	372	●	372	●
7.3	69	109	0.11	373	●	373	●
7.4	69	109	0.11	374	●	374	●
7.5	69	109	0.12	075	●	075	●
7.6	75	117	0.12	376	●	376	●
7.7	75	117	0.12	377	●	377	●
7.8	75	117	0.12	378	●	378	●
7.9	75	117	0.12	379	●	379	●
8	75	117	0.12	080	●	080	●
8.1	75	117	0.12	381	●	381	●
8.2	75	117	0.12	382	●	382	●
8.3	75	117	0.12	383	●	383	●
8.4	75	117	0.13	384	●	384	●
8.5	75	117	0.13	085	●	085	●
8.6	81	125	0.13	386	●	386	●
8.7	81	125	0.13	387	●	387	●
8.8	81	125	0.13	088	●	088	●
8.9	81	125	0.13	389	●	389	●
9	81	125	0.13	090	●	090	●
9.1	81	125	0.13	391	●	391	●
9.2	81	125	0.14	392	●	392	●
9.3	81	125	0.14	393	●	393	●
9.4	81	125	0.14	394	●	394	●
9.5	81	125	0.14	095	●	095	●
9.6	87	133	0.14	396	●	396	●
9.7	87	133	0.14	397	●	397	●
9.8	87	133	0.14	398	●	398	●
9.9	87	133	0.14	399	●	399	●
10	87	133	0.14	100	●	100	●
10.2	87	133	0.14	102	●	102	●
10.5	87	133	0.14	105	●	105	●
11	94	142	0.15	110	●	110	●
11.5	94	142	0.15	115	●	115	●
12	101	151	0.18	120	●	120	●
13	101	151	0.18	130	●	130	●

Prod. Gr. 1AB

ATORN® Twist drill sets solid carbide type N without IC

In box

VHM | TiN | 3xD | Typ N | HA

Application:
Standard geometry for use up to a strength of 1300 N/mm².

Execution:
- Standard solid carbide tool with universal precision grinding

Advantage:
- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- Cutting edge preparation minimises micro-fractures on the cutter
- robust metal box protects the tool from damage



Composition of set	Number of pieces in assortment/set (PCS)	Pitch of drill Ø	Surface: Uncoated 11150... Ident. No.		TiN 11151... Ident. No.	
1.0-10.0	10	1 mm	900	●	900	●

Prod. Gr. 1AB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11150900	70	60	50	30	28	140	190	130	120	130	120	100	80	80	25	25	25		
11151900	80	70	60	32	30	150	200	140	150	150	130	100	80	90	30	30	30		

Centre drill, type A



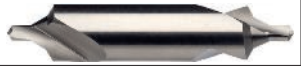
application: for centre drilling with type A on conventional and CNC machines.

	Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 55HRC		page
11001	0.5-12.5 mm	HSS	●	●	○		●	●				52
11011	1.0-5.0 mm	HSSE	●	●	●	●	●	●	○			53
11002	1.0-5.0 mm	HSSE	●	●	●	●	●	●	●			53
11004	0.5-6.3 mm	HSSE	●	●	●	●	●	●	●			53
11008	1.0-4.0 mm	VHM	●	●	●	●	●	●	●	○		54
11003	0.5-6.3 mm	HSS	●	●	○		●	●				54
11014	0.75-5.0 mm	HSSE	●	●	○		●	●				55
11001160-630	1.6-6.3 mm	HSSE	●	●	●	●	●	●	○			53-54

Centre drill with protective chamfer, type B



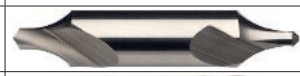
application: for centre drilling with type B on conventional and CNC machines. protection countersink protects the centre drill from damage.

	Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	N	K		page
11012	1.6-4.0 mm	HSS	●	●	○	●	●		55

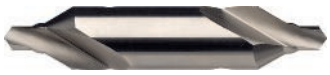
Centre drill with radius, type R



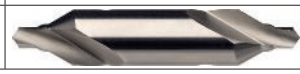
application: for centre drilling with type R on conventional and CNC machines. radius ensures low risk of breakage and compensates for offset.

	Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S		page
11010	0.5-12.5 mm	HSS	●	●	○		●	●			56
11010160-630	1.6-6.3 mm	HSSE	●	●	●	●	●	●	○		56

Centre drill with reinforcing bulge, type W



application: for centre drilling with type W on conventional and CNC machines. bead ensures additional lubricant space.

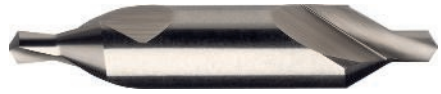
	Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	N	K		page
11005	1.0-5.0 mm	HSS	●	●	○	●	●		57

ATORN® HSS centre drill, form A (DIN 333)

for universal use up to 1000 N/mm²







Application:
For centre drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding. diameter 0.5–0.8, ground on one side

Advantage:
- radial relief ensures optimum chip breaking

Delivery:
Packaging unit: ref. no. 005 - 031 = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11001	35	20	10	10		50	70	40	30	35	30	20	10	20					

				Surface	Uncoated	
mm	mm	mm	mm	f steel 700 ● (mm/U)	11001... Ident. No.	
0.5	3.15	0.6-0.8 mm	25	0.01	005	●
0.8	3.15	1-1.2 mm	25	0.02	008	●
1	3.15	1.3-1.6 mm	31.5	0.02	010	●
1.25	3.15	1.6-1.9 mm	31.5	0.03	012	●
1.6	4	2-2.4 mm	30.3	0.03	016	●
2	5	2.5-2.9 mm	40	0.04	020	●
2.5	6.3	3.1-3.6 mm	45	0.05	025	●
3.15	8	3.9-4.4 mm	50	0.05	031	●
4	10	5-5.6 mm	56	0.06	040	●
5	12.5	6.3-6.9 mm	63	0.07	050	●
6.3	16	8-8.6 mm	71	0.08	063	●
8	20	10.1-11.1 mm	80	0.08	080	●
10	25	12.8-13.8 mm	100	0.08	100	●
12.5	31.5	16.5-17.5 mm	125	0.08	125	●

Prod. Gr. 1AD

ATORN® HSSE centre drill, form A (DIN 333)

for universal use up to 1300 N/mm²

60° | HSSE | TiN | TiAlN | Form A | HA

Application:
For centre drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding. diameter 0.5–0.8, ground on one side

Advantage:
- radial relief ensures optimum chip breaking
- **No. 11002:** TiAlN coating ensures long service life
- **No. 11004:** TiN coating ensures long service life

Delivery:
No. 11002 010–11002 050, 11011 010–11011 050: Packaging unit: ref. no. 010 - 031 = 10 pieces (price per piece)
No. 11004: Packaging unit: ref. no. 005 - 031 = 10 pieces (price per piece)



No. 11004



No. 11002



No. 11011

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11002	40	20	20	15	10	50	80	40	30	35	30	20	10	20	5	5	5		
11004	40	20	20	15	10	50	80	40	30	35	30	20	10	20	5	5	5		
11011	40	20	20	15	10	50	80	40	30	35	40	20	10	20	5	5	5		

mm	mm	mm	mm	Surface f steel 1000 ● (mm/U)	TiN 11004... Ident. No.		TiAlN 11002... Ident. No.		Uncoated 11011... Ident. No.	
0.5	3.15	0.6-0.8 mm	25	0.01	005	●	-	-	-	-
0.8	3.15	1-1.2 mm	25	0.01	008	●	-	-	-	-
1	3.15	1.3-1.6 mm	31.5	0.01	010	●	010	●	010	●
1.25	3.15	1.6-1.9 mm	31.5	0.02	012	●	012	●	012	●
1.6	4	2-2.4 mm	30.3	0.02	016	●	016	●	016	●
2	5	2.5-2.9 mm	40	0.02	020	●	020	●	020	●
2.5	6.3	3.1-3.6 mm	45	0.03	025	●	025	●	025	●
3.15	8	3.9-4.4 mm	50	0.03	031	●	031	●	031	●
4	10	5-5.6 mm	56	0.04	040	●	040	●	040	●
5	12.5	6.3-6.9 mm	63	0.04	050	●	050	●	050	●
6.3	16	8-8.6 mm	71	0.05	063	●	-	-	-	-

Prod. Gr. 1AD

ATORN® HSS centre-drill set, form A (DIN 333)

for universal use up to 1300 N/mm²

60° | HSS | HSSE | TiAlN | TiN | Form A | HA

Application:
For centre drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with grinding relief in metal box

Advantage:
- radial relief ensures optimum chip breaking
- robust metal box
- **No. 11002:** TiAlN coating ensures long service life
- **No. 11004:** TiN coating ensures long service life



Surface	Uncoated 11001... Ident. No.		TiAlN 11002... Ident. No.		TiN 11004... Ident. No.	
Composition of set						
1 each of diameter 1.0/1.6/5.0 mm | 2 each of diameter 2.0/2.5/4.0 mm | 3 each of diameter 3.15 mm	900	●	900	●	900	●

Prod. Gr. 1AD

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11001900	35	20	10	10		50	70	40	30	35	30	20	10	20					
11002900	40	20	20	15	10	50	80	40	30	35	30	20	10	20	5	5	5		
11004900	40	20	20	15	10	50	80	40	30	35	30	20	10	20	5	5	5		

ATORN® HSSE centre drill form A with surface (DIN 333)

for universal use up to 1000 N/mm²

60° | HSSE | Form A | HA



Application:
For centre drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- Face ensures good accessibility
- radial relief ensures optimum chip breaking

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11001160-630	40	20	20	15	10	50	80	40	30	35	40	20	10	20	5	5	5		

mm	mm	mm	mm	Surface f steel 700 ● (mm/U)	Uncoated 11001... Ident. No.	
1.6	4	2-2.6 mm	35	0.03	160	●
2	5	2.5-3.1 mm	40	0.04	200	●
2.5	6.3	3.1-3.8 mm	45	0.05	250	●
3.15	8	3.9-4.6 mm	50	0.05	315	●
4	10	5-5.9 mm	55	0.06	400	●
5	12.5	6.3-7.2 mm	63	0.07	500	●
6.3	16	8-8.9 mm	71	0.08	630	●

Prod. Gr. 1AD

ATORN® HSS centre drill, form A left (DIN 333)

for universal use up to 1000 N/mm²

60° | HSS | Form A | HA



Application:
For centre drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding. diameter 0.5–0.8, ground on one side

Advantage:
- radial relief ensures optimum chip breaking

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11003	35	20	10	10		50	70	40	30	35	30	20	10	20					

mm	mm	mm	mm	Surface f steel 700 ● (mm/U)	Uncoated 11003... Ident. No.	
0.5	3.15	0.6-0.9 mm	25	0.01	105	●
0.8	3.15	1-1.3 mm	25	0.02	108	●
1	3.15	1.3-1.7 mm	31	0.02	110	●
1.25	3.15	1.6-2 mm	31	0.03	125	●
1.6	4	2-2.6 mm	35	0.03	160	●
2	5	2.5-3.1 mm	40	0.04	200	●
2.5	6.3	3.1-3.8 mm	45	0.05	250	●
3.15	8	3.9-4.6 mm	50	0.05	315	●
4	10	5-5.9 mm	55	0.06	400	●
5	12.5	6.3-7.2 mm	63	0.07	500	●
6.3	16	8-8.9 mm	71	0.08	630	●

Prod. Gr. 1AD

ATORN® Solid carbide centre drill, form A (DIN 333)

for universal use up to 1300 N/mm²

60° | VHM | Form A | HA



Application:
For centre drilling on CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- radial relief ensures optimum chip breaking
- Solid carbide cutting material ensures a broad application range and an extremely long service life in series production

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11008	80	60	40	30	25	180	190	70	60	60	50	40	40	60	20	20	20	4	

mm	mm	mm	mm	Surface f steel 1300 ● (mm/U)	Uncoated 11008... Ident. No.	
1	3.15	1.3-1.6 mm	31.5	0.03	010	●
1.25	3.15	1.6-1.9 mm	31.5	0.04	012	●
1.6	4	2-2.4 mm	30.3	0.05	016	●
2	5	2.5-2.9 mm	40	0.06	020	●
2.5	6.3	3.1-3.6 mm	45	0.07	025	●
3.15	8	3.9-4.4 mm	50	0.09	031	●
4	10	5-5.6 mm	56	0.11	040	●

Prod. Gr. 1AC

ATORN® HSS centre drill, extra long (DIN 333)

for universal use up to 1000 N/mm²



Application:
For centre drilling on conventional and CNC machines on low-lying or difficult-to-access components.

Advantage:
- Extra length permits precise drilling, even on difficult-to-access components
- Radial relief ensures optimum chip breaking

Execution:
- spiral-fluted design with relief grinding

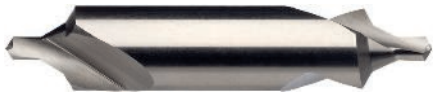
Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11014	40	20	10	10		50	80	40	35	35	30	20	10	20					

mm	mm	mm	mm	f steel 700 ● (mm/U)	11014... Ident. No.	
0.75	3.5	1-1.2 mm	120	0.02	020	●
1	4	1.3-1.6 mm	120	0.02	030	●
1.6	5	2-2.4 mm	120	0.03	050	●
2	6	2.5-2.9 mm	120	0.04	070	●
2.5	8	3.1-3.6 mm	120	0.05	100	●
2.5	6.3	3.1-3.6 mm	200	0.05	300	●
3.15	10	3.9-4.4 mm	120	0.05	150	●
3.15	8	3.9-4.4 mm	200	0.05	350	●
4	10	5-5.6 mm	120	0.06	170	●
4	10	5-5.6 mm	200	0.06	370	●
5	14	6.3-6.9 mm	120	0.07	200	●

Prod. Gr. 1AD

ATORN® HSS centre drill with protective countersink form B (DIN 333)

for universal use up to 1000 N/mm²

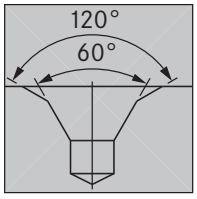


Application:
For centre drilling on conventional and CNC machines.

Advantage:
- Protective countersink protects the centre drill from damage
- Radial relief ensures optimum chip breaking

Execution:
- Spiral-fluted design with grinding relief

Delivery:
Packing unit: Ref. 016 - 025 = 10 units (price per unit)



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11012	40	20	10	10		50	80	40	35	35	30	20	10	20					

mm	mm	mm	mm	f steel 700 ● (mm/U)	11012... Ident. No.	
1.6	6.3	2-2.4 mm	45	0.03	016	●
2	8	2.5-2.9 mm	50	0.04	020	●
2.5	10	3.1-3.6 mm	56	0.05	025	●
3.15	11.2	3.9-4.4 mm	60	0.05	031	●
4	14	5-5.6 mm	67	0.06	040	●

Prod. Gr. 1AD

ATORN® HSS centre drill with radius type R (DIN 333)

for universal use up to 1000 N/mm²



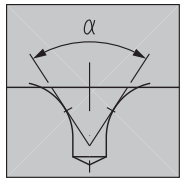
Application:
For centre drilling on CNC machines.

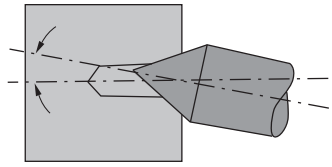
Execution:
- spiral-fluted design with relief grinding. diameter 0.5–0.8, ground on one side

Advantage:
- less risk of centre drill breakage, since the radius does not leave behind sharp edges
- radius compensates for positioning inaccuracies and angle errors (sufficient bearing surface present even with offset lathe centre)

Delivery:
Packaging unit: ref. no. 005 - 025 = 10 pieces (price per piece)







Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11010	40	20	10	10		50	80	40	35	35	30	20	10	20					

mm	mm	mm	mm	R	f steel 700 ● (mm/U)	11010... Ident. No.	
0.5	3.15	2.3-2.6 mm	25	2	0.01	005	●
0.8	3.15	2.6-2.9 mm	25	2.5	0.02	008	●
1	3.15	3-3.3 mm	31.5	2.9	0.02	010	●
1.25	3.15	3.3-3.6 mm	31.5	3.15	0.03	012	●
1.6	4	4.2-4.7 mm	30.3	4	0.03	016	●
2	5	5-5.4 mm	40	5	0.04	020	●
2.5	6.3	6.3-6.8 mm	45	6.3	0.05	025	●
3.15	8	8-8.5 mm	50	8	0.05	031	●
4	10	10-10.6 mm	56	10	0.06	040	●
5	12.5	12.5-13.1 mm	63	12.5	0.07	050	●
6.3	16	16-16.6 mm	71	16	0.08	063	●
8	20	20-20.7 mm	80	20	0.08	080	●
10	25	25-25.7 mm	100	25	0.08	100	●
12.5	31.5	31.5-32.3 mm	125	31.5	0.08	125	●

Prod. Gr. 1AD

ATORN® HSSE centre drill with radius form R with surface (DIN 333)

for universal use up to 1300 N/mm²





Application:
For centre drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- radius compensates for positioning inaccuracies and angle errors (sufficient bearing surface present even with offset lathe centre)
- radial relief ensures optimum chip breaking
- Face ensures good accessibility

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11010160-630	40	20	20	15	10	50	80	40	30	35	40	20	10	20	5	5	5		

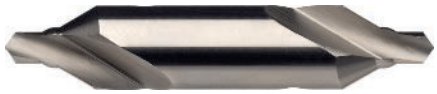
mm	mm	mm	mm	R	11010... Ident. No.	
1.6	4	4.2-4.7 mm	35	4	160	●
2	5	5-5.4 mm	40	5	200	●
2.5	6.3	6.3-6.8 mm	45	6.3	250	●
3.15	8	8-8.5 mm	50	8	315	●
4	10	10-10.6 mm	55	10	400	●
5	12.5	12.5-13.1 mm	63	12.5	500	●
6.3	16	16-16.6 mm	71	16	630	●

Prod. Gr. 1AD

ATORN® HSS centre drill with bulge type W (DIN 333)

for universal use up to 1000 N/mm²





Application:
For centre drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- Bulge ensures additional room for lubricant
- radial relief ensures optimum chip breaking

Delivery:
Packaging unit: ref. no. 005 - 031 = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11005	40	20	10	10		50	80	40	35	35	30	20	10	20					

mm	mm	mm	mm	f steel 700 ● (mm/U)	11005... Ident. No.	
1	3.15	1.3-1.6 mm	31.5	0.02	010	●
1.6	4	2-2.4 mm	30.3	0.03	016	●
2	5	2.5-2.9 mm	40	0.04	020	●
2.5	6.3	3.1-3.6 mm	45	0.05	025	●
3.15	8	3.9-4.4 mm	50	0.05	031	●
4	10	5-5.6 mm	56	0.06	040	●
5	12.5	6.3-6.9 mm	63	0.07	050	●

Prod. Gr. 1AD



90° NC spotting drill



application: for NC drilling 90° on conventional and CNC machines.
drilling and countersinking in a single operation.

	Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	S	H 55HRC	
11016	3-25 mm	HSSE	●	●	●	●	●			
11019031-251	3-25 mm	HSSE	●	●	●	●	●	○		
11019606-620	6-20 mm	HSSE	●	●	●	●	●	●		
11016740-860	4-16 mm	HSSE	●	●	●	●	●			
11019541-661	4-16 mm	HSSE	●	●	●	●	●	○		
11018	3-20 mm	VHM	●	●	●	●	●	●	○	
11016035-205	3-20 mm	HSSE	●	●	●	●	●			
11022	3-16 mm	HSS	●	●	●	●	●	●		

120° NC spotting drill



application: for NC drilling 120° on conventional and CNC machines. ensures optimum centring for 118° drills.

	Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	S	H 55HRC	
11015	3-25 mm	HSSE	●	●	●	●	●			
11019030-160	3-16 mm	HSSE	●	●	●	●	●	○		
11019506-516	6-16 mm	HSSE	●	●	●	●	●	●		
11017	3-20 mm	VHM	●	●	●	●	●	●	○	

142° NC spotting drill



Application: For 142° NC spot drilling on CNC machines.
Guarantees optimum centring for HPC 140° drills.

advantage:

- hole can be positioned precisely
- following tool does not wander
- centring recommended for HPC drills from 8xD

	Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	S	H 55HRC	
11169	6-20 mm	VHM	●	●	●	●	●	○	○	

ATORN® ORION® HSSE 90° NC spotting drill

for universal use up to 1300 N/mm²

90° | HSSE | TiN | TiNAlOX | HA | HB

Application:
For NC spot drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- **No. 11016 030–11016 250, 11019 031–11019 251, 11019 606–11019 620:** short design with precise point geometry and chisel edge ensure form-true and reliable spot drilling
- **No. 11016 030–11016 860, 11019 541–11019 661:** 90° NC spotting drill for spot drilling and countersinking in a single action
- **No. 11016 740–11016 860, 11019 541–11019 601, 11019 621–11019 661:**
  - profile-ground, cost-effective NC spotting drill
  - short design with cross-cutter
- **No. 11019 031–11019 251:** 90° NC spotting drill for drilling and countersinking in one step
- **No. 11019 031–11019 601, 11019 621–11019 661:** TiN coating for increased service life requirements
- **No. 11019 606–11019 620:** TiNAlOX coating for increased service life requirements



No. 11016



No. 11019 031–11019 601, 11019 621–11019 661



No. 11019 606–11019 620

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11016	40	20	10	12	10	70	80	40	35	35	30	20	10	20	6				
11016740-860	40	20	10	12	10	70	80	40	35	35	30	20	10	20	6				
11019031-251	50	30	12	20	15	80	90	50	40	45	40	30	10	30	10	10	10		
11019541-661	50	30	12	20	15	80	90	50	40	45	40	30	10	30	10	10	10		
11019606-620	50	30	10	20	15	80	90	50	40	45	40	30	10	30	8	8	8		

				ATORN®		ATORN®		ORION®		ORION®		ATORN®	
			Surface	Uncoated		TiN		Uncoated		TiN		TiNALOX	
			Tool holding device	HA parallel shank		HA parallel shank		HA parallel shank		HA parallel shank		HB parallel shank	
mm	mm	mm	f steel 1000 ● (mm/U)	11016... Ident. No.		11019... Ident. No.		11016... Ident. No.		11019... Ident. No.		11019... Ident. No.	
3	10	50	0.04	030	●	031	●	-	-	-	-	-	-
4	12	52	0.05	040	●	041	●	740	●	541	●	-	-
5	15	60	0.05	050	●	051	●	751	●	552	●	-	-
6	20	66	0.06	060	●	061	●	761	●	561	●	606	●
8	25	79	0.07	080	●	081	●	780	●	581	●	608	●
10	25	89	0.08	100	●	101	●	800	●	601	●	610	●
12	30	102	0.08	120	●	121	●	820	●	621	●	612	●
14	35	115	0.09	140	●	-	-	-	-	-	-	-	-
16	35	115	0.09	160	●	161	●	860	●	661	●	616	●
18	40	131	0.09	180	●	181	●	-	-	-	-	-	-
20	40	131	0.09	200	●	201	●	-	-	-	-	620	●
25	45	138	0.1	250	●	251	●	-	-	-	-	-	-

ATORN® = Prod. Gr. 1AD
ORION = Prod. Gr. 1AO

ATORN® ORION® NC spotting drill solid carbide 90°

for universal use up to 1300 N/mm²

90° | VHM | TiAlN plus | HA | HB

Application:
For NC spot drilling on CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- short design with precise point geometry and chisel edge ensure form-true and reliable spot drilling
- Solid carbide cutting material for a broad range of uses and long service life in series production
- **Ident. No. 030–201, 530–701:** 90° NC spotting drill for drilling and countersinking in one step
- **Ident. No. 361–461:** 90° NC spotting drill for spot drilling and countersinking in a single action

Notes:
Ident. No. 530–701: Diameter <6 mm with HA shaft



Ident. No. 030–461



Ident. No. 530–701

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11018	70	60	40	30	25	180	200	150	130	80	70	50	20	70	20	20	20	4	
11018361-461	70	60	40	30	25	180	200	150	130	80	70	50	20	70	20	20	20	4	
11018530-701	70	60	40	30	25	180	200	150	130	80	70	50	20	70	20	20	20	4	

				ATORN®		ATORN®		ATORN®		ORION®		ATORN®	
			Surface	Uncoated		TiAlN plus		Uncoated		Uncoated		TiAlN plus	
			Tool holding device	HA parallel shank		HA parallel shank		HB parallel shank		HB parallel shank		HB parallel shank	
mm	mm	mm	f steel 1300 ● (mm/U)	11018... Ident. No.		11018... Ident. No.		11018... Ident. No.		11018... Ident. No.		11018... Ident. No.	
3	12	46	0.03	030	●	530	●	-	-	-	-	-	-
4	12	55	0.04	040	●	540	●	-	-	-	-	-	-
5	14	62	0.05	050	●	550	●	-	-	-	-	-	-
6	20	66	0.06	-	-	-	-	061	●	361	●	561	●
8	25	79	0.06	-	-	-	-	081	●	381	●	581	●
10	25	89	0.07	-	-	-	-	101	●	401	●	601	●
12	30	102	0.08	-	-	-	-	121	●	421	●	621	●
16	35	115	0.09	-	-	-	-	161	●	461	●	661	●
20	40	131	0.09	-	-	-	-	201	●	-	-	701	●

ATORN® = Prod. Gr. 1AC
ORION = Prod. Gr. 1AO

ATORN® HSSE 90° NC spotting drill, uncoated, extra-long

for universal use up to 1300 N/mm²





Application:
For NC spot drilling on conventional and CNC machines on deep-seated or hard to reach components.

Execution:
- Spiral-fluted design with relief grinding.

Advantage:
- short design with precise point geometry and chisel edge ensure form-true and reliable spot drilling
- 90° NC spotting drill for spot drilling and countersinking in a single action
- Extra length enables precision drilling even on components that are difficult to reach

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11016035-205	40	20	10	12	10	70	80	80	50	40	30	20	10	20	10				

			Surface	Uncoated	
			Tool holding device	HA parallel shank	
mm	mm	mm	f steel 1000 ● (mm/U)	11016... Ident. No.	
3	10	80	0.04	035	●
4	12	100	0.05	045	●
5	15	120	0.05	055	●
6	20	140	0.06	065	●
8	25	140	0.07	085	●
10	25	170	0.08	105	●
12	30	170	0.08	125	●
16	35	200	0.09	165	●
20	40	200	0.09	205	●

Prod. Gr. 1AD

ATORN® HSSE 120° NC spotting drill

for universal use up to 1300 N/mm²

HSSE | TiN | TiNAlOX | HA | HB

Application:
For NC spot drilling on conventional and CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- short design with precise point geometry and chisel edge ensure form-true and reliable spot drilling
- 120° NC spotting drill ensures precise centring (deflection of drill is minimised)
- **No. 11019 030–11019 160:** TiN coating for increased service life requirements
- **No. 11019 506–11019 516:** TiNAlOX coating for increased service life requirements



No. 11015



No. 11019 030–11019 160



No. 11019 506–11019 516

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11015	40	20	10	12	10	70	80	80	50	40	30	20	10	20	10				
11019030-160	50	30	12	20	18	80	90	90	60	50	40	30	10	30	10	10	10		
11019506-516	50	30	12	20	18	80	90	90	60	50	40	30	10	30	10	10	10		

			Surface	Uncoated		TiN		TiNALOX	
			Tool holding device	HA parallel shank		HA parallel shank		HB parallel shank	
mm	mm	mm	f steel 1000 ● (mm/U)	11015... Ident. No.		11019... Ident. No.		11019... Ident. No.	
3	10	50	0.04	030	●	030	●	-	-
4	12	52	0.05	040	●	040	●	-	-
5	15	60	0.05	050	●	050	●	-	-
6	20	66	0.06	060	●	060	●	506	●
8	25	79	0.07	080	●	080	●	508	●
10	25	89	0.08	100	●	100	●	510	●
12	30	102	0.08	120	●	120	●	512	●
14	35	115	0.09	140	●	-	-	-	-
16	35	115	0.09	160	●	160	●	516	●
20	40	131	0.09	200	●	-	-	-	-
25	45	138	0.1	250	●	-	-	-	-

Prod. Gr. 1AD

ATORN® ORION® NC spotting drill solid carbide 120°

for universal use up to 1300 N/mm²

VHM | TiAlN plus | HA | HB

Application:
For NC spot drilling on CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- short design with precise point geometry and chisel edge ensure form-true and reliable spot drilling
- 120° NC spotting drill for exact centring for subsequent machining of holes (drastically reduces untrue running of the drill)
- Solid carbide cutting material for a broad range of uses and long service life in series production

Notes:
Ident. No. 530–701: Diameter <6 mm with HA shaft



Ident. No. 030–461



Ident. No. 530–701

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11017	70	60	40	30	25	180	200	150	130	80	70	50	20	70	20	20	20	4	
11017361-461	70	60	40	30	25	180	200	150	130	80	70	50	20	70	20	20	20	4	
11017530-701	70	60	40	30	25	WS-N	200	150	130	80	70	50	20	70	20	20	20	4	

				ATORN®		ATORN®		ATORN®		ORION®		ATORN®	
			Surface	Uncoated		TiAlN plus		Uncoated		Uncoated		TiAlN plus	
			Tool holding device	HA parallel shank		HA parallel shank		HB parallel shank		HB parallel shank		HB parallel shank	
mm	mm	mm	f steel 1300 ● (mm/U)	11017... Ident. No.		11017... Ident. No.		11017... Ident. No.		11017... Ident. No.		11017... Ident. No.	
3	12	46	0.03	030	●	530	●	-	-	-	-	-	-
4	12	55	0.03	040	●	540	●	-	-	-	-	-	-
5	14	62	0.04	050	●	550	●	-	-	-	-	-	-
6	20	66	0.06	-	-	-	-	061	●	361	●	561	●
8	25	79	0.06	-	-	-	-	081	●	381	●	581	●
10	25	89	0.07	-	-	-	-	101	●	401	●	601	●
12	30	102	0.08	-	-	-	-	121	●	421	●	621	●
16	35	115	0.09	-	-	-	-	161	●	461	●	661	●
20	40	131	0.10	-	-	-	-	201	●	-	-	701	●

ATORN® = Prod. Gr. 1AC
ORION = Prod. Gr. 1AO

ATORN® Solid carbide TiAlN 142° NC spotting drill

for universal use up to 1300 N/mm²



VHM | TiAlN | HB



Application:
For NC spot drilling on CNC machines.

Execution:
- spiral-fluted design with relief grinding

Advantage:
- 142° NC spotting drill provides a high-quality and precise hole for subsequent HPC drilling with a 140° tip angle
- short design with precise point geometry and chisel edge ensure form-true and reliable spot drilling
- TiAlN coating for increased service life requirements

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11169	70	60	40	30	20	180	200	150	130	80	70	50	20	70	25	25	25	4	

			Surface	TiAlN
			Tool holding device	HB parallel shank
mm	mm	mm	f steel 1300 ● (mm/U)	11169... Ident. No.	
6	16	66	0.11	060	●
8	21	79	0.12	080	●
10	25	89	0.12	100	●
12	30	102	0.12	120	●
16	35	115	0.13	160	●
20	40	131	0.14	200	●

Prod. Gr. 1AC



twist drill type U4
for universal use up to 1300 N/mm²

Application:
series and single-part production, in particular on CNC machines in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups.

advantage:
- 4-surface cutting for drilling without centring
- universal application, thereby reducing tool costs to a minimum and increasing user flexibility
- innovative and high-quality coating technology ensures increased service life
- ideal for use on NC machines





Typ U4

	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11079	1.0-14.0 mm	HSSE	3xD	1897	●	●	●	●	●	●	○	
11086	1.0-14.0 mm	HSSE	3xD	1897	●	●	●	●	●	●	○	
11023	1.0-14.0 mm	HSSE	5xD	338	●	●	●	●	●	●	○	
11037	1.0-14.0 mm	HSSE	5xD	338	●	●	●	●	●	●	○	

twist drill type N
for universal use up to 1000 N/mm²

Application:
series and single-part production on conventional and CNC machines in the steel, non-ferrous metals, cast iron up to a strength of 1000 N/mm² material groups.

advantage:
- long-term proven cutting geometry: excellent all-round properties and precise cutting behaviour
- universal application: tool costs minimised and greater flexibility for the user





Typ N

	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11020	0.3-20.0 mm	HSS	5xD	338	●	○			○	○		
11066	1.0-25.0 mm	HSS	5xD	338	●	○			○	○		
11022600-834	1.0-16.0 mm	HSS	5xD	338	●	○			○	○		
11031	1.0-13.0 mm	HSS	5xD	338	●	○			○	●		
11041	1.0-13.0 mm	HSS	5xD	338	●	○			○	○		
11040	2.0-16.0 mm	HSS	5xD	338	●	○			○	○		
11056	0.6-16.0 mm	HSS	10xD	340	●	○			○	○		
11059	1.0-13.0 mm	HSS	10xD	340	●	○			○	○		
11063	1.5-14.0 mm	HSS	20xD	1869	●	○			○	○		
11070	5.0-65.0 mm	HSS	5xD	345	●	○			○	○		
11071	10.0-60.0 mm	HSS	5xD	345	●	○			○	○		
11084	14.0-25.0 mm	HSS	10xD	345	●	●			○	○		

Twist drill type NV
For use in high-strength materials from 700 N/mm²

Application:
Series and single-part production on conventional and CNC machines for use in the steel, stainless steel, cast iron and special alloy material groups from a strength of 700 N/mm².

advantage:
- special geometry with reinforced core and increased thermal resistance
- use in high-strength materials owing to high cobalt content in cutting material





Typ NV

	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11052	1.0-20.0 mm	HSSE	3xD	1897	○	●	●	●		●	●	
11053	1.0-20.0 mm	HSSE	3xD	1897	○	●	●	●	○	●	○	
11026	1.0-13.0 mm	HSSE Co8	5xD	338	○	●	●	●	○	●	○	

Twist drill type TLP
for universal use up to 1300 N/mm²

Application:
Series and single-part production on conventional and CNC machines in the steel, (stainless steel), non-ferrous metals, cast iron and special alloy material groups up to a strength of 1300 N/mm².

advantage:
- deep hole profile with large chipping spaces for optimised chip removal with larger drilling depths without venting
- favourable removal of chips owing to high chipping space volume





Typ TLP

	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11021	1.0-16.0 mm	HSS	5xD	338	●	○			●	●		
11027	1.0-16.0 mm	HSSE	5xD	338	●	●	●	○	●	●	○	
11033	1.0-15.0 mm	HSSE	5xD	338	●	●	●	○	●	●	○	
11055	1.0-14.0 mm	HSS	10xD	340	●	●			●	●		
11057	1.0-16.0 mm	HSSE	10xD	340	●	●	●	○	●	●	○	
11060	1.0-12.0 mm	HSSE	10xD	340	●	●	●	○	●	●	○	
11061	2.0-10.0 mm	HSS	15xD	1869	●	○			●	●		
11085	8.0-25.0 mm	HSS	10xD	345	●	●			●	○		

Twist drill type VA
For use in stainless steel and special alloys

Application:
Series and single-part production on conventional and CNC machines in the stainless steel, special alloy and (steel) material groups up to a strength of 1300 N/mm².

advantage:
- special geometry with aggressive cutter design and free geometry for very smooth cutting in stainless steel and special alloys
- long service life owing to increased cobalt content





Typ VA

	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11028	1.0-13.0 mm	HSSE	5xD	338	○	○	○	●	○		●	
11029	0.3-16.0 mm	HSSE	5xD	338	○	○	○	●	○		●	
11058	1.0-12.0 mm	HSSE	10xD	340	○	○	○	●	○		●	
11074	11.0-23.0 mm	HSSE	5xD	345	○	○	○	●	○		●	

Twist drill type X
for universal use up to 1300 N/mm²

Application:
Series and single-part production on conventional and CNC machines in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1300 N/mm².

advantage:
- very high wear resistance and heat resistance owing to high-quality HSSE-PM cutting material
- high cutting edge stability owing to special point thinning and cutting angle adjustment
- very long service life in higher-alloyed steels and materials





Typ X

	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11080	1.0-14.0 mm	HSSE-PM	3xD	1897	●	●	●	●	●	●	○	
11025	1.0-14.0 mm	HSSE-PM	5xD	338	●	●	●	●	●	●	○	

twist drill type UNI/VA HSSE V3
for high-strength and stainless steel processing

application:
problem solver on conventional machines without internal cooling in the following material groups: steel, stainless steel and high-strength materials

advantage:
- special geometry in conjunction with HSSE-V3 cutting material makes the drill the ultimate problem solver
- very high cutting speeds achievable
- very long service life in high-alloyed steels and stainless steels
- for low-performance machines without internal cooling in stainless steel





TiAlN

Typ VA

micro twist drill HSSE-PM
for universal use up to 1300 N/mm²

Application:
for machining micro holes up to a strength of 1300 N/mm².

advantage:
- high-quality HSSE PM cutting material provides maximum toughness and is therefore less susceptible to breakage
- diameter from 0.05 mm–1.50 mm
- cost-effective alternative to solid carbide range






Typ N

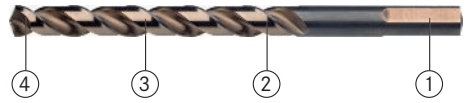
	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11054	0.05-1.5 mm	HSSE-PM	5xD	1899	●	●	●	●	●	●	○	

Multi-twist drill
Straight shank with 3-surface cut

Application:
The multi-twist drill was specially developed for mobile use on cordless drill screwdrivers (plates up to 5 mm) and electronic drills.
advantage:

- Three-faced polished section on the shank ensures optimum power transmission and fastening in drill chuck. Slippage is a thing of the past. Less effort when opening or closing in drill chuck.
- 40° twist angle ensures reliable removal of chippings during universal use. Higher cutting speeds with increased stability and accuracy.
- Special coating in connection with relief grinding provides for maximum adhesion of the lubricant and reliable chip removal.
- In the case of hand-held applications with a cordless drill screwdriver in particular, the 135° tip angle provides for a very high precision of the bore hole, a reduced cutting edge (extension of the battery life) and optimum centring precision, thanks to the innovative centre grinding.





	Ø	Cutting material	Nutzlänge	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11032020-130	2.0-13.0 mm	HSSE	5xD	338	●	●	○	●	●	○	○	

Twist drill with soldered cemented carbide cutting insert

Application:
series and single-part production on conventional and CNC machines.
advantage:

- polished chipping space ensures favourable chip removal
- cemented carbide cutting insert K20 ensures long service life
- ideal where high elasticity with high wear resistance is required
- excellent price/performance ratio





HM

Typ **N**

	Ø	Schneid-stoff	Max. drilling depth (D)	DIN	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11160	1.5-20.0 mm	Carbide	4xD	8037	●	●	●	○	○	●	○		
11162	3.0-12.0 mm	Carbide	4xD	8037								●	
11163	13.0-30.0 mm	Carbide	4xD	8041	●	●	●	○	○	●	○		

twist drill type U4
for universal use up to 1300 N/mm²

Application:
series and single-part production, in particular on CNC machines in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups.

advantage:
- 4-surface cutting for drilling without centring
- universal application, thereby reducing tool costs to a minimum and increasing user flexibility
- innovative and high-quality coating technology ensures increased service life
- ideal for use on NC machines





Typ U4

ATORN® Twist drill type U4 HSSE 3xD (DIN 1897)
for universal use up to 1300 N/mm²

HSSE | TiNAlOX | 3xD | Typ U4 | 118° | HA

Application:
Universal use in all material groups up to a strength of 1300 N/mm2.

Execution:
- **No. 11079:** Twist drill with 4-facet ground
- **No. 11086:** Twist drill with 4-surface cut

Advantage:
- innovative cutting geometry: 4-faced polished section for drilling without centring
- universal use: tool costs minimised and greater flexibility for the user
- **No. 11086:** extremely hard, low-friction, temperature-resistant and form-fitting TiNAlOX coating ensures greater service life

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)


No. 11079


No. 11086

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11079	40	20	10	10	8	60	80	70	45	40	30	30	10	30	10	10	10		
11086	40	20	10	10	8	60	80	70	45	40	30	30	10	30	10	10	10		

Cutting material				HSSE		HSSE	
Surface				Uncoated		TiNALOX	
mm	mm	mm	f steel 1000 ● (mm/U)	11079... Ident. No.		11086... Ident. No.	
1	6	26	0.03	015	●	015	●
1.1	7	28	0.03	017	●	017	●
1.2	8	30	0.03	020	●	020	●
1.3	8	30	0.03	022	●	022	●
1.4	9	32	0.03	024	●	024	●
1.5	9	32	0.03	026	●	026	●
1.6	10	34	0.03	029	●	029	●
1.7	10	34	0.03	031	●	031	●
1.8	11	36	0.03	033	●	033	●
1.9	11	36	0.03	035	●	035	●
2	12	38	0.03	038	●	038	●
2.1	12	38	0.03	040	●	040	●
2.2	13	40	0.04	042	●	042	●
2.3	13	40	0.04	044	●	044	●
2.4	14	43	0.04	047	●	047	●
2.5	14	43	0.04	049	●	049	●
2.6	14	43	0.04	051	●	051	●
2.7	16	46	0.04	053	●	053	●
2.8	16	46	0.04	056	●	056	●
2.9	16	46	0.04	058	●	058	●
3	16	46	0.04	060	●	060	●
3.1	18	49	0.04	062	●	062	●
3.2	18	49	0.04	065	●	065	●
3.3	18	49	0.05	067	●	067	●
3.4	20	52	0.05	069	●	069	●
3.5	20	52	0.05	071	●	071	●
3.6	20	52	0.05	074	●	074	●
3.7	20	52	0.06	076	●	076	●
3.8	22	55	0.06	078	●	078	●
3.9	22	55	0.06	080	●	080	●
4	22	55	0.06	083	●	083	●
4.1	22	55	0.06	084	●	084	●
4.2	22	55	0.07	085	●	085	●
4.3	24	58	0.07	087	●	087	●
4.4	24	58	0.07	089	●	089	●
4.5	24	58	0.07	090	●	090	●
4.6	24	58	0.08	091	●	091	●
4.7	24	58	0.08	092	●	092	●
4.8	26	62	0.08	095	●	095	●
4.9	26	62	0.08	096	●	096	●
5	26	62	0.08	097	●	097	●
5.1	26	62	0.09	098	●	098	●
5.2	26	62	0.09	099	●	099	●

Cutting material				HSSE		HSSE	
Surface				Uncoated		TiNALOX	
mm	mm	mm	f steel 1000 ● (mm/U)	11079... Ident. No.		11086... Ident. No.	
5.3	26	62	0.09	101	●	101	●
5.4	28	66	0.09	102	●	102	●
5.5	28	66	0.1	103	●	103	●
5.6	28	66	0.1	105	●	105	●
5.7	28	66	0.1	106	●	106	●
5.8	28	66	0.1	108	●	108	●
5.9	28	66	0.1	109	●	109	●
6	28	66	0.11	111	●	111	●
6.1	31	70	0.11	112	●	112	●
6.2	31	70	0.11	113	●	113	●
6.3	31	70	0.11	115	●	115	●
6.4	31	70	0.12	117	●	117	●
6.5	31	70	0.12	118	●	118	●
6.6	31	70	0.12	119	●	119	●
6.7	31	70	0.12	120	●	120	●
6.8	34	74	0.12	122	●	122	●
6.9	34	74	0.13	123	●	123	●
7	34	74	0.13	124	●	124	●
7.1	34	74	0.13	125	●	125	●
7.2	34	74	0.13	127	●	127	●
7.3	34	74	0.14	129	●	129	●
7.4	34	74	0.14	130	●	130	●
7.5	34	74	0.14	131	●	131	●
7.6	37	79	0.14	133	●	133	●
7.7	37	79	0.14	134	●	134	●
7.8	37	79	0.15	136	●	136	●
7.9	37	79	0.15	137	●	137	●
8	37	79	0.15	139	●	139	●
8.1	37	79	0.15	140	●	140	●
8.2	37	79	0.15	141	●	141	●
8.3	37	79	0.15	143	●	143	●
8.4	37	79	0.15	145	●	145	●
8.5	37	79	0.15	146	●	146	●
8.8	40	84	0.16	151	●	151	●
9	40	84	0.16	153	●	153	●
9.3	40	84	0.16	158	●	158	●
9.5	40	84	0.16	160	●	160	●
9.8	43	89	0.16	165	●	165	●
10	43	89	0.16	168	●	168	●
10.2	43	89	0.16	170	●	170	●
10.5	43	89	0.17	175	●	175	●
11	47	95	0.17	182	●	182	●
11.5	47	95	0.17	188	●	188	●

Cutting material				HSSE		HSSE	
			Surface	Uncoated		TiNALOX	
mm	mm	mm	f steel 1000 ● (mm/U)	11079... Ident. No.		11086... Ident. No.	
12	51	102	0.18	195	●	195	●
12.5	51	102	0.18	201	●	201	●
13	51	102	0.18	207	●	207	●
13.5	54	107	0.18	214	●	214	●
14	54	107	0.19	221	●	221	●

Prod. Gr. 1AG

ATORN® Twist drill type U4 HSSE 5xD (DIN 338)

for universal use up to 1300 N/mm²

HSSE | TiNAIOX | 5xD | Typ U4 | 118° | HA

Application:
Universal application in all material groups up to a strength of 1300 N/mm2.

Execution:
- **No. 11023:** Twist drill with 4-surface cutting
- **No. 11037:** Twist drill with 4-flute cutting

Advantage:
- universal use: tool costs minimised and greater flexibility for the user
- extremely hard, low-friction, temperature-resistant and form-fitting TiNAIOX coating ensures greater service life
- **No. 11023:** 4-flute cutting for drilling without centring
- **No. 11037:** 4-faced polished section for drilling without centring

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)



No. 11023



No. 11037

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11023	40	20	10	10	8	60	80	70	45	40	30	30	10	30	10	10	10		
11037	40	20	10	10	8	60	80	70	45	40	30	30	10	30	10	10	10		

Cutting material				HSSE		HSSE	
			Surface	Uncoated		TiNALOX	
mm	mm	mm	f steel 1000 ● (mm/U)	11023... Ident. No.		11037... Ident. No.	
1	12	34	0.03	081	●	081	●
1.1	14	36	0.03	091	●	091	●
1.2	16	38	0.03	101	●	101	●
1.3	16	38	0.03	111	●	111	●
1.4	18	40	0.03	121	●	121	●
1.5	18	40	0.03	131	●	131	●
1.6	20	43	0.03	141	●	141	●
1.7	20	43	0.03	151	●	151	●
1.8	22	46	0.03	161	●	161	●
1.9	22	46	0.03	171	●	171	●
2	24	49	0.03	181	●	181	●
2.1	24	49	0.03	192	●	192	●
2.2	27	53	0.04	202	●	202	●
2.3	27	53	0.04	210	●	210	●
2.4	30	57	0.04	220	●	220	●
2.5	30	57	0.04	230	●	230	●
2.6	30	57	0.04	240	●	240	●
2.7	33	61	0.04	250	●	250	●
2.8	33	61	0.04	260	●	260	●
2.9	33	61	0.04	270	●	270	●
3	33	61	0.04	280	●	280	●
3.1	36	65	0.04	282	●	282	●
3.17	36	65	0.04	285	●	-	-
3.2	36	65	0.04	286	●	286	●
3.3	36	65	0.05	289	●	289	●
3.4	39	70	0.05	291	●	291	●
3.5	39	70	0.05	293	●	293	●
3.6	39	70	0.05	296	●	296	●
3.7	39	70	0.06	299	●	299	●
3.8	43	75	0.06	302	●	302	●
3.9	43	75	0.06	305	●	305	●
3.97	43	75	0.06	307	●	-	-
4	43	75	0.06	310	●	310	●
4.1	43	75	0.06	314	●	314	●
4.2	43	75	0.07	316	●	316	●
4.3	47	80	0.07	319	●	319	●
4.4	47	80	0.07	324	●	324	●
4.5	47	80	0.07	326	●	326	●
4.6	47	80	0.08	329	●	329	●
4.7	47	80	0.08	332	●	332	●
4.8	52	86	0.08	335	●	335	●
4.9	52	86	0.08	337	●	337	●
5	52	86	0.08	341	●	341	●
5.1	52	86	0.09	344	●	344	●
5.2	52	86	0.09	349	●	349	●
5.3	52	86	0.09	352	●	352	●
5.4	57	93	0.09	355	●	355	●
5.5	57	93	0.1	358	●	358	●
5.6	57	93	0.1	361	●	361	●
5.7	57	93	0.1	364	●	364	●
5.8	57	93	0.1	367	●	367	●
5.9	57	93	0.1	369	●	369	●
6	57	93	0.11	371	●	371	●
6.1	63	101	0.11	373	●	373	●
6.2	63	101	0.11	375	●	375	●
6.3	63	101	0.11	377	●	377	●
6.35	63	101	0.11	378	●	-	-
6.4	63	101	0.12	379	●	379	●
6.5	63	101	0.12	381	●	381	●
6.6	63	101	0.12	383	●	383	●
6.7	63	101	0.12	385	●	385	●
6.8	69	109	0.12	387	●	387	●
6.9	69	109	0.13	389	●	389	●
7	69	109	0.13	391	●	391	●
7.1	69	109	0.13	393	●	393	●
7.2	69	109	0.13	396	●	396	●
7.3	69	109	0.14	398	●	398	●
7.4	69	109	0.14	400	●	400	●
7.5	69	109	0.14	402	●	402	●
7.6	75	117	0.14	405	●	405	●
7.7	75	117	0.14	407	●	407	●
7.8	75	117	0.15	409	●	409	●
7.9	75	117	0.15	411	●	411	●
7.94	75	117	0.15	412	●	-	-
8	75	117	0.15	414	●	414	●
8.1	75	117	0.15	416	●	416	●
8.2	75	117	0.15	418	●	418	●
8.3	75	117	0.15	420	●	420	●
8.4	75	117	0.15	423	●	423	●
8.5	75	117	0.15	425	●	425	●
8.6	81	125	0.15	427	●	427	●
8.7	81	125	0.15	429	●	429	●
8.8	81	125	0.16	432	●	432	●
8.9	81	125	0.16	434	●	434	●
9	81	125	0.16	436	●	436	●
9.1	81	125	0.16	438	●	438	●
9.2	81	125	0.16	441	●	441	●
9.3	81	125	0.16	443	●	443	●
9.4	81	125	0.16	445	●	445	●
9.5	81	125	0.16	447	●	447	●
9.6	87	133	0.16	450	●	450	●
9.7	87	133	0.16	452	●	452	●
9.8	87	133	0.16	454	●	454	●
9.9	87	133	0.16	456	●	456	●
10	87	133	0.16	459	●	459	●
10.2	87	133	0.16	461	●	461	●
10.3	87	133	0.16	463	●	-	-
10.5	87	133	0.17	466	●	466	●
11	94	142	0.17	473	●	473	●
11.11	94	142	0.17	475	●	-	-
11.5	94	142	0.17	480	●	480	●
12	101	151	0.18	488	●	488	●
12.5	101	151	0.18	494	●	494	●
13	101	151	0.18	500	●	500	●
13.5	108	160	0.18	505	●	507	●
14	108	160	0.19	510	●	514	●

Prod. Gr. 1AG

twist drill type N
for universal use up to 1000 N/mm²

Application:
series and single-part production on conventional and CNC machines in the steel, non-ferrous metals, cast iron up to a strength of 1000 N/mm² material groups.

advantage:
- long-term proven cutting geometry: excellent all-round properties and precise cutting behaviour
- universal application: tool costs minimised and greater flexibility for the user





Typ N

ATORN® Twist drill type N HSS 5xD (DIN 338)
for universal use up to 1000 N/mm²

HSS | TiN | 5xD | Typ N | 118° | HA

Application:
Standard geometry for universal use up to 1000 N/mm².

Execution:
- **No. 11020 011–11020 577, 11066 081–11066 561:** Twist drill with universal standard geometry
- **No. 11022:** twist drill with universal standard geometry

Advantage:
- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- **No. 11020:** vaporisation ensures favourable adherence of coolant
- **No. 11022–11066:** TiN coating for increased requirements in service life

Delivery:
No. 11020: box quantity: drill Ø 1.0–6.0 mm = 10 units (price per unit)

Notes:
No. 11020: vaporised drill Ø >2.4 mm


No. 11020


No. 11022


No. 11066

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11020	30	20		10		50	45	40	35	40	30	20	10	25					
11022600-834	30	20		10		50	45	40	35	40	30	20	10	25					
11066	30	20		10		50	45	40	35	40	30	20	10	25					

Cutting material				HSS		HSS		HSS	
Surface				Vapor-ised		TiN		TiN	
mm	mm	mm	f steel 700 ● (mm/U)	11020... Ident. No.		11022... Ident. No.		11066... Ident. No.	
0.3	3	20	0.02	011	●	-	-	-	-
0.4	5	20	0.03	021	●	-	-	-	-
0.45	5	20	0.03	025	●	-	-	-	-
0.5	6	22	0.03	031	●	-	-	-	-
0.6	7	24	0.03	041	●	-	-	-	-
0.65	7	24	0.03	045	●	-	-	-	-
0.7	9	28	0.03	051	●	-	-	-	-
0.75	9	28	0.03	055	●	-	-	-	-
0.8	10	30	0.03	061	●	-	-	-	-
0.85	10	30	0.03	065	●	-	-	-	-
0.9	11	32	0.03	071	●	-	-	-	-
0.95	11	32	0.03	075	●	-	-	-	-
1	12	34	0.03	081	●	600	●	081	●
1.1	14	36	0.04	091	●	602	●	091	●
1.19	16	38	0.04	095	●	-	-	-	-
1.2	16	38	0.04	101	●	604	●	101	●
1.25	16	38	0.04	105	●	-	-	105	●
1.3	16	38	0.04	111	●	606	●	111	●
1.4	18	40	0.04	121	●	608	●	121	●
1.45	18	40	0.04	125	●	-	-	125	●
1.5	18	40	0.04	131	●	610	●	131	●
1.6	20	43	0.04	141	●	612	●	141	●
1.7	20	43	0.04	151	●	614	●	151	●
1.8	22	46	0.04	161	●	616	●	161	●
1.9	22	46	0.05	171	●	618	●	171	●
2	24	49	0.05	181	●	620	●	181	●
2.05	24	49	0.05	185	●	-	-	185	●
2.1	24	49	0.05	192	●	622	●	192	●
2.15	24	49	0.05	195	●	-	-	195	●
2.2	27	53	0.05	202	●	624	●	202	●
2.3	27	53	0.05	210	●	626	●	210	●
2.4	30	57	0.05	220	●	628	●	220	●
2.49	30	57	0.05	229	●	-	-	-	-
2.5	30	57	0.05	230	●	630	●	230	●
2.6	30	57	0.06	240	●	632	●	240	●
2.65	30	57	0.06	245	●	-	-	-	-
2.7	33	61	0.06	250	●	634	●	250	●
2.8	33	61	0.06	260	●	636	●	260	●
2.9	33	61	0.06	270	●	638	●	270	●
3	33	61	0.06	280	●	640	●	280	●
3.1	36	65	0.06	282	●	642	●	282	●

Cutting material				HSS		HSS		HSS	
Surface				Vapor-ised		TiN		TiN	
mm	mm	mm	f steel 700 ● (mm/U)	11020... Ident. No.		11022... Ident. No.		11066... Ident. No.	
3.15	36	65	0.06	283	●	-	-	-	-
3.17	36	65	0.06	285	●	-	-	-	-
3.2	36	65	0.07	286	●	644	●	286	●
3.25	36	65	0.07	287	●	-	-	-	-
3.26	36	65	0.07	288	●	-	-	-	-
3.3	36	65	0.07	289	●	646	●	289	●
3.4	39	70	0.07	291	●	648	●	291	●
3.5	39	70	0.07	293	●	650	●	293	●
3.6	39	70	0.08	296	●	652	●	296	●
3.7	39	70	0.08	299	●	654	●	299	●
3.8	43	75	0.08	302	●	656	●	302	●
3.9	43	75	0.09	305	●	658	●	305	●
3.97	43	75	0.09	308	●	-	-	-	-
4	43	75	0.09	310	●	660	●	310	●
4.09	43	75	0.09	312	●	-	-	-	-
4.1	43	75	0.09	314	●	662	●	314	●
4.2	43	75	0.09	316	●	664	●	316	●
4.25	43	75	0.09	318	●	-	-	-	-
4.3	47	80	0.1	319	●	666	●	319	●
4.37	47	80	0.1	323	●	-	-	-	-
4.4	47	80	0.1	324	●	668	●	324	●
4.5	47	80	0.1	326	●	670	●	326	●
4.6	47	80	0.11	329	●	672	●	329	●
4.65	47	80	0.11	331	●	-	-	-	-
4.7	47	80	0.11	332	●	674	●	332	●
4.76	47	80	0.11	334	●	-	-	-	-
4.8	52	86	0.11	335	●	676	●	335	●
4.9	52	86	0.11	337	●	678	●	337	●
5	52	86	0.12	341	●	680	●	341	●
5.1	52	86	0.12	344	●	682	●	344	●
5.16	52	86	0.12	347	●	-	-	-	-
5.2	52	86	0.12	349	●	684	●	349	●
5.25	52	86	0.12	350	●	-	-	-	-
5.3	52	86	0.12	352	●	686	●	352	●
5.4	57	93	0.13	355	●	688	●	355	●
5.5	57	93	0.13	358	●	690	●	358	●
5.55	57	93	0.13	359	●	-	-	-	-
5.56	57	93	0.13	360	●	-	-	-	-
5.6	57	93	0.13	361	●	692	●	361	●
5.65	57	93	0.13	362	●	-	-	-	-
5.7	57	93	0.14	364	●	694	●	364	●

Cutting material				HSS		HSS		HSS	
Surface				Vapor-ised		TiN		TiN	
mm	mm	mm	f steel 700 ● (mm/U)	11020... Ident. No.		11022... Ident. No.		11066... Ident. No.	
5.8	57	93	0.14	367	●	696	●	367	●
5.9	57	93	0.14	369	●	698	●	369	●
6	57	93	0.14	371	●	700	●	371	●
6.1	63	101	0.15	373	●	702	●	373	●
6.2	63	101	0.15	375	●	704	●	375	●
6.3	63	101	0.15	377	●	706	●	377	●
6.35	63	101	0.15	378	●	-	-	-	-
6.4	63	101	0.16	379	●	708	●	379	●
6.5	63	101	0.16	381	●	710	●	381	●
6.6	63	101	0.16	383	●	712	●	383	●
6.7	63	101	0.16	385	●	714	●	385	●
6.75	63	101	0.16	386	●	-	-	-	-
6.8	69	109	0.17	387	●	716	●	387	●
6.9	69	109	0.17	389	●	718	●	389	●
7	69	109	0.17	391	●	720	●	391	●
7.1	69	109	0.18	393	●	722	●	393	●
7.2	69	109	0.18	396	●	724	●	396	●
7.3	69	109	0.18	398	●	726	●	398	●
7.4	69	109	0.18	400	●	728	●	400	●
7.5	69	109	0.19	402	●	730	●	402	●
7.55	69	109	0.19	403	●	-	-	-	-
7.6	75	117	0.19	405	●	732	●	405	●
7.7	75	117	0.19	407	●	734	●	407	●
7.8	75	117	0.19	409	●	736	●	409	●
7.9	75	117	0.2	411	●	738	●	411	●
7.94	75	117	0.2	412	●	-	-	-	-
8	75	117	0.2	414	●	740	●	414	●
8.1	75	117	0.2	416	●	742	●	416	●
8.2	75	117	0.2	418	●	744	●	418	●
8.3	75	117	0.2	420	●	746	●	420	●
8.4	75	117	0.2	423	●	748	●	423	●
8.5	75	117	0.21	425	●	750	●	425	●
8.6	81	125	0.21	427	●	752	●	427	●
8.7	81	125	0.21	429	●	754	●	429	●
8.75	81	125	0.21	431	●	-	-	-	-
8.8	81	125	0.21	432	●	756	●	432	●
8.9	81	125	0.21	434	●	758	●	434	●
9	81	125	0.21	436	●	760	●	436	●
9.1	81	125	0.21	438	●	762	●	438	●
9.2	81	125	0.21	441	●	764	●	441	●
9.3	81	125	0.21	443	●	766	●	443	●
9.4	81	125	0.21	445	●	768	●	445	●
9.5	81	125	0.22	447	●	770	●	447	●
9.52	81	125	0.22	448	●	-	-	-	-
9.6	87	133	0.22	450	●	772	●	450	●
9.7	87	133	0.22	452	●	774	●	452	●
9.8	87	133	0.22	454	●	776	●	454	●
9.9	87	133	0.22	456	●	778	●	456	●
10	87	133	0.22	459	●	780	●	459	●
10.1	87	133	0.22	460	●	782	●	460	●
10.2	87	133	0.22	461	●	784	●	461	●

Cutting material				HSS		HSS		HSS	
Surface				Vapor-ised		TiN		TiN	
mm	mm	mm	f steel 700 ● (mm/U)	11020... Ident. No.		11022... Ident. No.		11066... Ident. No.	
10.25	87	133	0.22	462	●	-	-	-	-
10.3	87	133	0.22	463	●	786	●	463	●
10.4	87	133	0.22	465	●	788	●	465	●
10.5	87	133	0.23	466	●	790	●	466	●
10.6	87	133	0.23	467	●	792	●	467	●
10.7	94	142	0.23	468	●	794	●	468	●
10.72	94	142	0.23	469	●	-	-	-	-
10.8	94	142	0.23	471	●	796	●	471	●
10.9	94	142	0.23	472	●	798	●	472	●
11	94	142	0.23	473	●	800	●	473	●
11.1	94	142	0.23	474	●	802	●	474	●
11.2	94	142	0.23	476	●	804	●	476	●
11.3	94	142	0.23	478	●	806	●	478	●
11.4	94	142	0.23	479	●	808	●	479	●
11.5	94	142	0.24	480	●	810	●	480	●
11.6	94	142	0.24	482	●	812	●	482	●
11.7	94	142	0.24	483	●	814	●	483	●
11.8	94	142	0.24	485	●	816	●	485	●
11.9	101	151	0.24	486	●	818	●	486	●
12	101	151	0.24	488	●	820	●	488	●
12.1	101	151	0.24	489	●	822	●	489	●
12.2	101	151	0.24	490	●	824	●	490	●
12.3	101	151	0.24	492	●	826	●	492	●
12.4	101	151	0.24	493	●	828	●	493	●
12.5	101	151	0.25	494	●	830	●	494	●
12.6	101	151	0.25	495	●	832	●	495	●
12.7	101	151	0.25	496	●	834	●	496	●
12.8	101	151	0.25	498	●	836	●	498	●
12.9	101	151	0.25	499	●	838	●	499	●
13	101	151	0.25	500	●	840	●	500	●
13.25	108	160	0.25	503	●	842	●	-	-
13.5	108	160	0.26	507	●	844	●	505	●
13.75	108	160	0.26	510	●	846	●	-	-
14	108	160	0.26	514	●	848	●	514	●
14.25	114	169	0.26	517	●	850	●	-	-
14.5	114	169	0.27	521	●	852	●	521	●
14.75	114	169	0.27	525	●	854	●	-	-
15	114	169	0.27	528	●	856	●	528	●
15.25	120	178	0.27	532	●	858	●	-	-
15.5	120	178	0.28	536	●	860	●	536	●
15.75	120	178	0.28	539	●	862	●	-	-
16	120	178	0.28	543	●	864	●	543	●
16.5	125	187	0.28	550	●	-	-	550	●
17	125	187	0.29	557	●	-	-	557	●
17.5	130	196	0.29	561	●	-	-	-	-
18	130	196	0.3	564	●	-	-	561	●
18.5	135	205	0.3	567	●	-	-	-	-
19	135	205	0.3	570	●	-	-	-	-
19.5	140	214	0.31	574	●	-	-	-	-
20	140	214	0.31	577	●	-	-	-	-
				Price/unit, €					

Prod. Gr. 1AA

Prod. Gr. 1AP

ATORN® ORION® Twist drill type N HSS 10xD (DIN 340)

for universal use up to 1000 N/mm²



Application:
Standard geometry for universal use up to 1000 N/mm².

Execution:
- Twist drill with universal standard geometry

Advantage:
- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- Vaporisation ensures favourable adherence of coolant

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11056	30	20		10		40	60	50	35	30	20	20	10	25					
11059	30	20		10		40	60	50	35	30	20	20	10	25					

				ATORN®		ORION®	
			Cutting material	HSS		HSS	
			Surface	Vaporised		Vaporised	
mm	mm	mm	f steel 700 ● (mm/U)	11056... Ident. No.		11059... Ident. No.	
0.6	15	35	0.03	006	●	-	-
0.8	29	46	0.03	008	●	-	-
1	33	56	0.03	030	●	030	●
1.1	37	60	0.04	031	●	-	-
1.2	41	65	0.04	033	●	-	-
1.3	41	65	0.04	035	●	-	-
1.4	45	70	0.04	037	●	-	-
1.5	45	70	0.04	039	●	039	●
1.6	50	76	0.04	042	●	-	-
1.7	50	76	0.04	044	●	-	-
1.8	53	80	0.04	046	●	-	-
1.9	53	80	0.05	048	●	-	-
2	56	85	0.05	051	●	051	●
2.1	56	85	0.05	053	●	-	-
2.2	59	90	0.05	055	●	-	-
2.3	59	90	0.05	057	●	-	-
2.4	62	95	0.05	060	●	-	-
2.5	62	95	0.05	062	●	062	●

				ATORN®		ORION®	
			Cutting material	HSS		HSS	
			Surface	Vaporised		Vaporised	
mm	mm	mm	f steel 700 ● (mm/U)	11056... Ident. No.		11059... Ident. No.	
2.6	62	95	0.06	064	●	-	-
2.7	66	100	0.06	066	●	-	-
2.8	66	100	0.06	069	●	-	-
2.9	66	100	0.06	071	●	-	-
3	66	100	0.06	073	●	073	●
3.1	69	106	0.06	075	●	-	-
3.2	69	106	0.07	078	●	-	-
3.3	69	106	0.07	080	●	080	●
3.4	73	112	0.07	082	●	-	-
3.5	73	112	0.07	084	●	084	●
3.6	73	112	0.08	087	●	-	-
3.7	73	112	0.08	089	●	-	-
3.8	78	119	0.08	091	●	-	-
3.9	78	119	0.09	093	●	-	-
4	78	119	0.09	096	●	096	●
4.1	78	119	0.09	098	●	-	-
4.2	78	119	0.09	100	●	100	●
4.3	82	126	0.1	102	●	-	-

				ATORN®		ORION®	
			Cutting material	HSS		HSS	
			Surface	Vaporised		Vaporised	
mm	mm	mm	f steel 700 ● (mm/U)	11056... Ident. No.		11059... Ident. No.	
4.5	82	126	0.1	107	●	107	●
4.6	82	126	0.11	109	●	-	-
4.7	82	126	0.11	111	●	-	-
4.8	87	132	0.11	114	●	-	-
4.9	87	132	0.11	116	●	-	-
5	87	132	0.12	118	●	118	●
5.1	87	132	0.12	119	●	-	-
5.2	87	132	0.12	121	●	-	-
5.3	87	132	0.12	123	●	-	-
5.4	91	139	0.13	124	●	-	-
5.5	91	139	0.13	125	●	125	●
5.6	91	139	0.13	127	●	-	-
5.7	91	139	0.14	128	●	-	-
5.8	91	139	0.14	130	●	-	-
5.9	91	139	0.14	131	●	-	-
6	91	139	0.14	133	●	133	●
6.1	97	148	0.15	134	●	-	-
6.2	97	148	0.15	135	●	-	-
6.3	97	148	0.15	137	●	-	-
6.4	97	148	0.16	139	●	-	-
6.5	97	148	0.16	140	●	140	●
6.6	97	148	0.16	141	●	-	-
6.7	97	148	0.16	142	●	-	-
6.8	102	156	0.17	144	●	-	-

				ATORN®		ORION®	
			Cutting material	HSS		HSS	
			Surface	Vaporised		Vaporised	
mm	mm	mm	f steel 700 ● (mm/U)	11056... Ident. No.		11059... Ident. No.	
7	102	156	0.17	146	●	146	●
7.5	102	156	0.19	153	●	153	●
7.7	109	165	0.19	156	●	-	-
7.8	109	165	0.19	158	●	-	-
8	109	165	0.2	161	●	161	●
8.1	109	165	0.2	162	●	-	-
8.2	109	165	0.2	163	●	-	-
8.4	109	165	0.2	167	●	-	-
8.5	109	165	0.21	168	●	168	●
9	115	175	0.21	175	●	175	●
9.5	115	175	0.22	182	●	-	-
9.8	121	184	0.22	187	●	-	-
10	121	184	0.22	190	●	-	-
10.2	121	184	0.22	192	●	-	-
10.5	121	184	0.23	197	●	-	-
11	128	197	0.23	204	●	-	-
11.5	128	197	0.24	207	●	-	-
12	134	205	0.24	211	●	-	-
12.5	134	205	0.25	214	●	-	-
13	134	205	0.25	217	●	217	●
13.5	140	214	0.26	221	●	-	-
14	140	214	0.26	224	●	-	-
15	144	220	0.27	230	●	-	-
16	149	227	0.28	235	●	-	-

ATORN® = Prod. Gr. 1AA
ORION = Prod. Gr. 1AP

ATORN® Twist drills type N HSS 15xD-25xD (DIN 1869)

for universal use up to 1000 N/mm²



Application:
Standard geometry for universal use up to 1000 N/mm².

Execution:
- Twist drill with universal standard geometry

Advantage:
- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- Vaporisation ensures favourable adherence of coolant

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11063	20	10				40	50	40	30	30	20	10		20					

Cutting material			Surface	HSS	Uncoated		Cutting material			Surface	HSS	Uncoated	
mm	mm	mm	f steel 700 ● (mm/U)	11063... Ident. No.			mm	mm	mm	f steel 700 ● (mm/U)	11063... Ident. No.		
1.5	80	125	0.04	005	●		6.5	250	315	0.16	190	●	
1.5	100	160	0.04	010	●		7	150	200	0.17	195	●	
2	80	125	0.05	015	●		7	200	250	0.17	200	●	
2	100	160	0.05	020	●		7	250	315	0.17	205	●	
2.5	80	125	0.05	025	●		7.5	150	200	0.19	215	●	
2.5	100	160	0.05	030	●		7.5	200	250	0.19	220	●	
3	100	160	0.06	045	●		7.5	250	315	0.19	225	●	
3	150	200	0.06	050	●		8	200	250	0.2	235	●	
3	200	250	0.06	055	●		8	250	315	0.2	240	●	
3.5	100	160	0.07	060	●		8	300	400	0.2	250	●	
3.5	200	250	0.07	070	●		8.5	200	250	0.21	260	●	
4	100	160	0.09	075	●		8.5	250	315	0.21	265	●	
4	150	200	0.09	080	●		9	200	250	0.21	275	●	
4	200	250	0.09	085	●		9	250	315	0.21	280	●	
4	250	315	0.09	090	●		9	300	400	0.21	285	●	
4.5	100	160	0.1	095	●		9.5	200	250	0.22	290	●	
4.5	150	200	0.1	100	●		9.5	250	315	0.22	295	●	
4.5	200	250	0.1	105	●		10	200	250	0.22	300	●	
4.5	250	315	0.1	110	●		10	250	315	0.22	305	●	
5	100	160	0.12	115	●		10	300	400	0.22	315	●	
5	150	200	0.12	120	●		10.5	200	250	0.23	320	●	
5	200	250	0.12	125	●		10.5	250	315	0.23	325	●	
5	250	315	0.12	130	●		10.5	300	400	0.23	335	●	
5	300	400	0.12	135	●		11	200	250	0.23	340	●	
5.5	150	200	0.13	140	●		11	250	315	0.23	345	●	
5.5	200	250	0.13	145	●		11	300	400	0.23	355	●	
5.5	250	315	0.13	150	●		12	200	250	0.24	360	●	
6	150	200	0.14	155	●		12	250	315	0.24	365	●	
6	200	250	0.14	160	●		12	300	400	0.24	375	●	
6	250	315	0.14	165	●		13	250	315	0.25	380	●	
6	300	400	0.14	170	●		13	300	400	0.25	385	●	
6.5	150	200	0.16	180	●		14	250	315	0.26	390	●	
6.5	200	250	0.16	185	●		14	300	400	0.26	395	●	

Prod. Gr. 112

Twist drill type NV
For use in high-strength materials from 700 N/mm²

Application:
Series and single-part production on conventional and CNC machines for use in the steel, stainless steel, cast iron and special alloy material groups from a strength of 700 N/mm².

advantage:

- special geometry with reinforced core and increased thermal resistance
- use in high-strength materials owing to high cobalt content in cutting material





Typ NV

ATORN® Twist drill type NV HSSE 3xD (DIN 1897)
For use in high-strength materials from 700 N/mm²

HSSE | TiN | 3xD | Typ NV | 130° | HA

Application:
Geometry with reinforced core and increased thermal resistance for application from strengths upwards of 700 N/mm².

Execution:

- Twist drill with reinforced geometry

Advantage:

- excellent cutting durability owing to reinforced core geometry
- **No. 11052:** TiN coating for increased service life requirements

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)


No. 11052


No. 11053

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11052	40	20	10	20	15			45	35	40	30			30	7	6	6		
11053	30	20	10	20	10			50	35	40	30			30	8	6	6		

Cutting material				HSSE		HSSE	
			Surface	TiN		Uncoated	
mm	mm	mm	f steel 1300 ● (mm/U)	11052... Ident. No.		11053... Ident. No.	
1	6	26	0.03	015	●	015	●
1.1	7	28	0.03	016	●	016	●
1.2	8	30	0.03	020	●	020	●
1.3	8	30	0.03	021	●	021	●
1.4	9	32	0.03	024	●	024	●
1.5	9	32	0.03	026	●	026	●
1.6	10	34	0.03	029	●	029	●
1.7	10	34	0.03	030	●	030	●
1.8	11	36	0.03	033	●	033	●
1.9	11	36	0.03	034	●	034	●
2	12	38	0.03	038	●	038	●
2.1	12	38	0.03	040	●	040	●
2.2	13	40	0.04	042	●	042	●
2.3	13	40	0.04	045	●	045	●
2.4	14	43	0.04	047	●	047	●
2.5	14	43	0.04	049	●	049	●
2.6	14	43	0.04	051	●	051	●
2.7	16	46	0.04	053	●	053	●
2.8	16	46	0.04	056	●	056	●
2.9	16	46	0.04	059	●	059	●
3	16	46	0.04	060	●	060	●
3.1	18	49	0.04	061	●	061	●
3.2	18	49	0.04	065	●	065	●
3.3	18	49	0.04	067	●	067	●
3.4	20	52	0.05	069	●	069	●
3.5	20	52	0.05	071	●	071	●
3.6	20	52	0.05	074	●	074	●
3.7	20	52	0.05	075	●	075	●
3.8	22	55	0.05	078	●	078	●
3.9	22	55	0.05	081	●	081	●
4	22	55	0.05	083	●	083	●
4.1	22	55	0.05	084	●	084	●
4.2	22	55	0.05	085	●	085	●
4.3	24	58	0.06	087	●	087	●
4.4	24	58	0.06	088	●	088	●
4.5	24	58	0.06	090	●	090	●
4.6	24	58	0.06	346	●	346	●
4.7	24	58	0.06	347	●	347	●
4.8	26	62	0.06	348	●	348	●
4.9	26	62	0.06	349	●	349	●
5	26	62	0.06	097	●	097	●
5.1	26	62	0.07	098	●	098	●
5.2	26	62	0.07	099	●	099	●
5.3	26	62	0.07	353	●	353	●
5.4	28	66	0.07	354	●	354	●
5.5	28	66	0.07	103	●	103	●

Cutting material				HSSE		HSSE	
			Surface	TiN		Uncoated	
mm	mm	mm	f steel 1300 ● (mm/U)	11052... Ident. No.		11053... Ident. No.	
5.6	28	66	0.07	104	●	104	●
5.7	28	66	0.07	107	●	107	●
5.8	28	66	0.07	108	●	108	●
5.9	28	66	0.08	359	●	359	●
6	28	66	0.08	111	●	111	●
6.1	31	70	0.08	361	●	361	●
6.2	31	70	0.08	362	●	362	●
6.3	31	70	0.08	363	●	363	●
6.4	31	70	0.08	364	●	364	●
6.5	31	70	0.08	118	●	118	●
6.6	31	70	0.08	366	●	366	●
6.7	31	70	0.08	367	●	367	●
6.8	34	74	0.09	122	●	122	●
6.9	34	74	0.09	369	●	369	●
7	34	74	0.09	124	●	124	●
7.1	34	74	0.09	125	●	125	●
7.2	34	74	0.09	372	●	372	●
7.3	34	74	0.09	373	●	373	●
7.4	34	74	0.09	374	●	374	●
7.5	34	74	0.09	131	●	131	●
7.6	37	79	0.1	376	●	376	●
7.7	37	79	0.1	377	●	377	●
7.8	37	79	0.1	136	●	136	●
7.9	37	79	0.1	379	●	379	●
8	37	79	0.1	139	●	139	●
8.1	37	79	0.1	381	●	381	●
8.2	37	79	0.1	382	●	382	●
8.3	37	79	0.1	383	●	383	●
8.4	37	79	0.1	145	●	145	●
8.5	37	79	0.11	146	●	146	●
8.6	40	84	0.11	386	●	386	●
8.7	40	84	0.11	387	●	387	●
8.8	40	84	0.11	151	●	151	●
8.9	40	84	0.11	388	●	388	●
9	40	84	0.11	153	●	153	●
9.1	40	84	0.11	391	●	391	●
9.2	40	84	0.11	392	●	392	●
9.3	40	84	0.11	393	●	393	●
9.4	40	84	0.11	394	●	394	●
9.5	40	84	0.12	395	●	395	●
9.6	43	89	0.12	396	●	396	●
9.7	43	89	0.12	397	●	397	●
9.8	43	89	0.12	398	●	398	●
9.9	43	89	0.12	399	●	399	●
10	43	89	0.12	168	●	168	●
10.2	43	89	0.12	170	●	170	●

Cutting material				HSSE		HSSE	
Surface				TiN		Uncoated	
mm	mm	mm	f steel 1300 ● (mm/U)	11052... Ident. No.		11053... Ident. No.	
10.5	43	89	0.13	175	●	175	●
11	47	95	0.13	182	●	182	●
11.5	47	95	0.14	188	●	188	●
12	51	102	0.14	195	●	195	●
12.5	51	102	0.15	201	●	201	●
13	51	102	0.15	207	●	207	●
13.5	54	107	0.16	435	●	435	●
14	54	107	0.16	440	●	440	●
14.5	56	111	0.17	445	●	445	●
15	56	111	0.17	450	●	450	●
15.5	58	115	0.18	455	●	455	●
15.75	58	115	0.18	457	●	-	-

Cutting material				HSSE		HSSE	
Surface				TiN		Uncoated	
mm	mm	mm	f steel 1300 ● (mm/U)	11052... Ident. No.		11053... Ident. No.	
16	58	115	0.18	460	●	460	●
16.5	60	119	0.18	465	●	465	●
17	60	119	0.18	470	●	470	●
17.5	62	123	0.18	475	●	475	●
17.75	62	123	0.18	477	●	-	-
18	62	123	0.18	480	●	480	●
18.5	64	127	0.19	485	●	485	●
19	64	127	0.19	490	●	490	●
19.5	66	131	0.19	495	●	495	●
19.75	66	131	0.19	497	●	-	-
20	66	131	0.19	500	●	500	●

Prod. Gr. 112

ATORN® Twist drill type NV HSSE 5xD (DIN 338)

for use in high-strength materials from 700 N/mm²



Application:
Geometry with reinforced core and increased thermal resistance for application from strengths upwards of 700 N/mm².

Execution:
- Twist drill with reinforced geometry

Advantage:
- excellent cutting durability owing to reinforced core geometry

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11026	30	20	10	20	10			45	35	40	30			30	7	6	6		

Cutting material			HSSE Co8		
Surface			Uncoated		
mm	mm	mm	f steel 1300 ● (mm/U)	11026... Ident. No.	
1	12	34	0.03	081	●
1.1	14	36	0.03	091	●
1.2	16	38	0.03	101	●
1.3	16	38	0.03	111	●
1.4	18	40	0.03	121	●
1.5	18	40	0.03	131	●
1.6	20	43	0.03	141	●
1.7	20	43	0.03	151	●
1.8	22	46	0.03	161	●
1.9	22	46	0.03	171	●
2	24	49	0.03	181	●
2.1	24	49	0.03	192	●
2.2	27	53	0.04	202	●
2.3	27	53	0.04	210	●
2.4	30	57	0.04	220	●
2.5	30	57	0.04	230	●
2.6	30	57	0.04	240	●
2.7	33	61	0.04	250	●
2.8	33	61	0.04	260	●
2.9	33	61	0.04	270	●
3	33	61	0.04	280	●
3.1	36	65	0.04	282	●
3.2	36	65	0.04	286	●
3.3	36	65	0.04	289	●
3.4	39	70	0.05	291	●
3.5	39	70	0.05	293	●
3.6	39	70	0.05	296	●
3.7	39	70	0.05	299	●
3.8	43	75	0.05	302	●
3.9	43	75	0.05	305	●
4	43	75	0.05	310	●
4.1	43	75	0.05	314	●
4.2	43	75	0.05	316	●
4.3	47	80	0.06	319	●
4.4	47	80	0.06	324	●
4.5	47	80	0.06	326	●
4.6	47	80	0.06	329	●
4.7	47	80	0.06	332	●
4.8	52	86	0.06	335	●
4.9	52	86	0.06	337	●
5	52	86	0.06	341	●
5.1	52	86	0.07	344	●
5.2	52	86	0.07	349	●
5.3	52	86	0.07	352	●
5.4	57	93	0.07	355	●
5.5	57	93	0.07	358	●
5.6	57	93	0.07	361	●
5.7	57	93	0.07	364	●
5.8	57	93	0.07	367	●

Cutting material			HSSE Co8		
Surface			Uncoated		
mm	mm	mm	f steel 1300 ● (mm/U)	11026... Ident. No.	
5.9	57	93	0.08	369	●
6	57	93	0.08	371	●
6.1	63	101	0.08	373	●
6.2	63	101	0.08	375	●
6.3	63	101	0.08	377	●
6.4	63	101	0.08	379	●
6.5	63	101	0.08	381	●
6.6	63	101	0.08	383	●
6.7	63	101	0.08	385	●
6.8	69	109	0.09	387	●
6.9	69	109	0.09	389	●
7	69	109	0.09	391	●
7.1	69	109	0.09	393	●
7.2	69	109	0.09	396	●
7.3	69	109	0.09	398	●
7.4	69	109	0.09	400	●
7.5	69	109	0.09	402	●
7.6	75	117	0.1	405	●
7.7	75	117	0.1	407	●
7.8	75	117	0.1	409	●
7.9	75	117	0.1	411	●
8	75	117	0.1	414	●
8.1	75	117	0.1	416	●
8.2	75	117	0.1	418	●
8.3	75	117	0.1	420	●
8.4	75	117	0.1	423	●
8.5	75	117	0.11	425	●
8.6	81	125	0.11	427	●
8.7	81	125	0.11	429	●
8.8	81	125	0.11	432	●
8.9	81	125	0.11	434	●
9	81	125	0.11	436	●
9.1	81	125	0.11	438	●
9.2	81	125	0.11	441	●
9.3	81	125	0.11	443	●
9.4	81	125	0.11	445	●
9.5	81	125	0.12	447	●
9.6	87	133	0.12	450	●
9.7	87	133	0.12	452	●
9.8	87	133	0.12	454	●
9.9	87	133	0.12	456	●
10	87	133	0.12	459	●
10.1	87	133	0.12	460	●
10.2	87	133	0.12	461	●
10.5	87	133	0.13	466	●
11	94	142	0.13	473	●
11.5	94	142	0.14	480	●
11.8	94	142	0.14	485	●
12	101	151	0.14	488	●

			Cutting material	HSSE Co8	
			Surface	Uncoated	
mm	mm	mm	f steel 1300 ● (mm/U)	11026... Ident. No.	
12.1	101	151	0.14	489	●
12.5	101	151	0.15	494	●

			Cutting material	HSSE Co8	
			Surface	Uncoated	
mm	mm	mm	f steel 1300 ● (mm/U)	11026... Ident. No.	
13	101	151	0.15	500	●

Prod. Gr. 112

Twist drill type TLP
for universal use up to 1300 N/mm²

Application:
Series and single-part production on conventional and CNC machines in the steel, (stainless steel), non-ferrous metals, cast iron and special alloy material groups up to a strength of 1300 N/mm².

advantage:
- deep hole profile with large chipping spaces for optimised chip removal with larger drilling depths without venting
- favourable removal of chips owing to high chipping space volume





Typ TLP

ATORN® Twist drill type TLP HSS(E) 5xD (DIN 338)
With deep-hole profile for long-chipping materials

HSS | HSSE | TiAlN | 5xD | Typ TLP | 130° | HA

Application:
No. 11021: Geometry with deep-hole profile for application up to a strength of 1000 N/mm².
No. 11027–11033: Geometry with deep-hole profile for application up to a strength of 1300 N/mm².

Execution:
- Twist drill with deep-hole profile

Advantage:
- Deep-hole profile for optimised chip removal at greater drilling depths without venting
- effective removal of chips thanks to large chipping spaces
- **No. 11033:** TiAlN coating for increased service life demands

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Notes:
No. 11021–11027: Chamfer-nitrated >2.36


No. 11021


No. 11027


No. 11033

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11021	30	20		10		40	60	45	35	40	30	20		20					
11027	30	20	10	15	10	50	70	45	35	40	30	20	10	30	10	10	10		
11033	40	20	10	10	20	60	80	60	45	40	30	30	10	30	10	10	10		

			Cutting material	HSS		HSSE		HSSE	
			Surface	Uncoated		Uncoated		TiAlN	
mm	mm	mm	f steel 700 ● (mm/U)	11021... Ident. No.		11027... Ident. No.		11033... Ident. No.	
1	12	34	0.03	081	●	081	●	081	●
1.1	14	36	0.03	091	●	091	●	091	●
1.2	16	38	0.03	101	●	101	●	101	●
1.3	16	38	0.03	111	●	111	●	111	●
1.35	16	38	0.03	114	●	116	●	-	-
1.4	18	40	0.03	121	●	121	●	121	●
1.5	18	40	0.03	131	●	131	●	131	●
1.55	18	40	0.03	136	●	136	●	-	-
1.6	20	43	0.03	141	●	141	●	141	●
1.65	20	43	0.03	-	-	146	●	-	-
1.7	20	43	0.03	151	●	151	●	151	●
1.8	22	46	0.03	161	●	161	●	161	●
1.9	22	46	0.03	171	●	171	●	171	●
2	24	49	0.03	181	●	181	●	181	●
2.1	24	49	0.03	192	●	192	●	192	●
2.2	27	53	0.04	202	●	202	●	202	●
2.3	27	53	0.04	210	●	210	●	210	●
2.4	30	57	0.04	220	●	220	●	220	●
2.5	30	57	0.04	230	●	230	●	230	●
2.6	30	57	0.04	240	●	240	●	240	●
2.65	30	57	0.04	-	-	245	●	-	-
2.7	33	61	0.04	250	●	250	●	250	●
2.8	33	61	0.04	260	●	260	●	260	●
2.9	33	61	0.04	270	●	270	●	270	●
3	33	61	0.04	280	●	280	●	280	●
3.1	36	65	0.04	282	●	282	●	282	●
3.2	36	65	0.04	286	●	286	●	286	●
3.25	36	65	0.05	287	●	287	●	287	●
3.3	36	65	0.05	289	●	289	●	289	●
3.4	39	70	0.05	291	●	291	●	291	●
3.45	39	70	0.05	292	●	292	●	-	-
3.5	39	70	0.05	293	●	293	●	293	●
3.6	39	70	0.05	296	●	296	●	296	●
3.7	39	70	0.06	299	●	299	●	299	●
3.8	43	75	0.06	302	●	302	●	302	●

			Cutting material	HSS		HSSE		HSSE	
			Surface	Uncoated		Uncoated		TiAlN	
mm	mm	mm	f steel 700 ● (mm/U)	11021... Ident. No.		11027... Ident. No.		11033... Ident. No.	
3.9	43	75	0.06	305	●	305	●	305	●
4	43	75	0.06	310	●	310	●	310	●
4.1	43	75	0.06	314	●	314	●	314	●
4.2	43	75	0.07	316	●	316	●	316	●
4.3	47	80	0.07	319	●	319	●	319	●
4.4	47	80	0.07	324	●	324	●	324	●
4.5	47	80	0.07	326	●	326	●	326	●
4.6	47	80	0.08	329	●	329	●	329	●
4.65	47	80	0.08	330	●	331	●	330	●
4.7	47	80	0.08	332	●	332	●	332	●
4.8	52	86	0.08	335	●	335	●	335	●
4.9	52	86	0.08	337	●	337	●	337	●
5	52	86	0.08	341	●	341	●	341	●
5.1	52	86	0.09	344	●	344	●	344	●
5.2	52	86	0.09	349	●	349	●	349	●
5.3	52	86	0.09	352	●	352	●	352	●
5.4	57	93	0.09	355	●	355	●	355	●
5.5	57	93	0.1	358	●	358	●	358	●
5.55	57	93	0.1	359	●	-	-	359	●
5.6	57	93	0.1	361	●	361	●	361	●
5.7	57	93	0.1	364	●	364	●	364	●
5.8	57	93	0.1	367	●	367	●	367	●
5.9	57	93	0.1	369	●	369	●	369	●
6	57	93	0.11	371	●	371	●	371	●
6.1	63	101	0.11	373	●	373	●	373	●
6.2	63	101	0.11	375	●	375	●	375	●
6.3	63	101	0.11	377	●	377	●	377	●
6.35	63	101	0.11	378	●	378	●	-	-
6.4	63	101	0.12	379	●	379	●	379	●
6.5	63	101	0.12	381	●	381	●	381	●
6.6	63	101	0.12	383	●	383	●	383	●
6.7	63	101	0.12	385	●	385	●	385	●
6.8	69	109	0.12	387	●	387	●	387	●
6.9	69	109	0.13	389	●	389	●	389	●
7	69	109	0.13	391	●	391	●	391	●

Cutting material				HSS		HSSE		HSSE	
			Surface	Uncoated		Uncoated		TiAlN	
mm	mm	mm	f steel 700 ● (mm/U)	11021... Ident. No.		11027... Ident. No.		11033... Ident. No.	
7.1	69	109	0.13	393	●	393	●	393	●
7.2	69	109	0.13	396	●	396	●	396	●
7.3	69	109	0.14	398	●	398	●	398	●
7.4	69	109	0.14	400	●	400	●	400	●
7.5	69	109	0.14	402	●	402	●	402	●
7.6	75	117	0.14	405	●	405	●	405	●
7.7	75	117	0.14	407	●	407	●	407	●
7.8	75	117	0.15	409	●	409	●	409	●
7.9	75	117	0.15	411	●	411	●	411	●
8	75	117	0.15	414	●	414	●	414	●
8.1	75	117	0.15	416	●	416	●	416	●
8.2	75	117	0.15	418	●	418	●	418	●
8.3	75	117	0.15	420	●	420	●	420	●
8.4	75	117	0.15	423	●	423	●	423	●
8.5	75	117	0.15	425	●	425	●	425	●
8.6	81	125	0.15	427	●	427	●	427	●
8.7	81	125	0.15	429	●	429	●	429	●
8.8	81	125	0.16	432	●	432	●	432	●
8.9	81	125	0.16	434	●	434	●	434	●
9	81	125	0.16	436	●	436	●	436	●
9.1	81	125	0.16	438	●	438	●	438	●
9.2	81	125	0.16	441	●	441	●	441	●
9.3	81	125	0.16	443	●	443	●	443	●
9.4	81	125	0.16	445	●	445	●	445	●
9.5	81	125	0.16	447	●	447	●	447	●
9.6	87	133	0.16	450	●	450	●	450	●
9.7	87	133	0.16	452	●	452	●	452	●
9.8	87	133	0.16	454	●	454	●	454	●
9.9	87	133	0.16	456	●	456	●	456	●
10	87	133	0.16	459	●	459	●	459	●
10.2	87	133	0.16	461	●	461	●	461	●
10.5	87	133	0.17	466	●	466	●	466	●
11	94	142	0.17	473	●	473	●	473	●
11.2	94	142	0.17	476	●	476	●	476	●
11.5	94	142	0.17	480	●	480	●	480	●
12	101	151	0.18	488	●	488	●	488	●
15	114	169	0.19	528	●	528	●	528	●
16	114	169	0.19	560	●	543	●	-	-

Prod. Gr. 110

ATORN® Twist drill type TLP HSS/HSSE 10xD

With deep-hole profile for long-chipping materials

HSS | HSSE | TiN | TiAlN | 10xD | Typ TLP | 130° | HA



No. 11055



No. 11057



No. 11060

Application:

No. 11055: Geometry with deep-hole profile for application up to a strength of 1000 N/mm².

No. 11057–11060: Geometry with deep-hole profile for application up to a strength of 1300 N/mm².

Execution:

- Twist drill with deep-hole profile

Advantage:

- Deep-hole profile to optimise chip removal at greater drilling depths without venting
- effective removal of chips thanks to large chipping spaces
- **No. 11060:** TiAlN coating for increased service life requirements

Delivery:

Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Notes:

No. 11057–11060: Chamfer-nitrated >2.36

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11055	30	20				40	60	45	35	40	30	20	10	20					
11057	40	20	10	12	10	50	70	45	35	40	30	20	10	25	6	6	6		
11060	40	20	10	12	10	50	70	45	35	40	30	20	10	25	6	6	6		

Cutting material				HSS		HSSE		HSSE	
			Surface	TiN		Uncoated		TiAlN	
mm	mm	mm	f steel 700 ● (mm/U)	11055... Ident. No.		11057... Ident. No.		11060... Ident. No.	
1	33	56	0.03	030	●	030	●	030	●
1.1	37	60	0.03	031	●	031	●	031	●
1.2	41	65	0.03	033	●	333	●	333	●
1.3	41	65	0.03	035	●	335	●	335	●
1.4	45	70	0.03	037	●	337	●	337	●
1.5	45	70	0.03	039	●	039	●	039	●
1.6	50	76	0.03	042	●	042	●	042	●
1.7	50	76	0.03	044	●	344	●	344	●
1.8	53	80	0.03	046	●	046	●	046	●
1.9	53	80	0.03	048	●	048	●	048	●
2	56	85	0.03	051	●	051	●	051	●
2.1	56	85	0.03	053	●	353	●	353	●
2.2	59	90	0.04	055	●	355	●	355	●
2.3	59	90	0.04	057	●	357	●	357	●
2.4	62	95	0.04	060	●	360	●	360	●
2.5	62	95	0.04	062	●	062	●	062	●
2.6	62	95	0.04	064	●	364	●	364	●
2.7	66	100	0.04	066	●	366	●	366	●
2.8	66	100	0.04	069	●	369	●	369	●
2.9	66	100	0.04	071	●	071	●	071	●
3	66	100	0.04	073	●	073	●	073	●
3.1	69	106	0.04	075	●	375	●	375	●
3.2	69	106	0.04	078	●	078	●	078	●
3.3	69	106	0.05	080	●	080	●	080	●
3.4	73	112	0.05	082	●	382	●	382	●
3.5	73	112	0.05	084	●	084	●	084	●
3.6	73	112	0.05	087	●	387	●	387	●
3.7	73	112	0.06	089	●	089	●	089	●
3.8	78	119	0.06	091	●	391	●	391	●
3.9	78	119	0.06	093	●	093	●	093	●
4	78	119	0.06	096	●	096	●	096	●
4.1	78	119	0.06	098	●	398	●	398	●
4.2	78	119	0.07	100	●	100	●	100	●
4.3	82	126	0.07	102	●	402	●	402	●
4.4	82	126	0.07	105	●	405	●	405	●
4.5	82	126	0.07	107	●	107	●	107	●
4.6	82	126	0.08	109	●	109	●	109	●
4.7	82	126	0.08	111	●	411	●	411	●
4.8	87	132	0.08	114	●	114	●	114	●
4.9	87	132	0.08	116	●	416	●	416	●
5	87	132	0.08	118	●	118	●	118	●
5.1	87	132	0.09	119	●	419	●	419	●
5.2	87	132	0.09	121	●	421	●	421	●
5.3	87	132	0.09	123	●	423	●	423	●
5.4	91	139	0.09	124	●	424	●	424	●
5.5	91	139	0.1	125	●	125	●	125	●
5.6	91	139	0.1	127	●	427	●	427	●
5.7	91	139	0.1	128	●	428	●	428	●
5.8	91	139	0.1	130	●	130	●	130	●
5.9	91	139	0.1	131	●	431	●	431	●
6	91	139	0.11	133	●	133	●	133	●
6.1	97	148	0.11	134	●	434	●	434	●
6.2	97	148	0.11	135	●	435	●	435	●
6.3	97	148	0.11	137	●	436	●	436	●
6.35	97	148	0.11	138	●	-	-	-	-
6.4	97	148	0.12	139	●	437	●	437	●
6.5	97	148	0.12	140	●	140	●	140	●
6.6	97	148	0.12	141	●	438	●	438	●
6.7	97	148	0.12	142	●	439	●	439	●
6.8	102	156	0.12	144	●	144	●	144	○
6.9	102	156	0.13	145	●	440	●	440	●
7	102	156	0.13	146	●	146	●	146	●
7.1	102	156	0.13	147	●	441	●	441	●
7.2	102	156	0.13	148	●	442	●	442	●
7.3	102	156	0.14	149	●	443	●	443	●
7.4	102	156	0.14	150	●	444	●	444	●
7.5	102	156	0.14	153	●	153	●	153	●
7.6	109	165	0.14	154	●	445	●	445	●
7.7	109	165	0.14	155	●	446	●	446	●
7.8	109	165	0.15	156	●	158	●	158	●
7.9	109	165	0.15	157	●	447	●	447	●
8	109	165	0.15	161	●	161	●	161	●
8.1	109	165	0.15	162	●	448	●	448	●
8.2	109	165	0.15	163	●	449	●	449	●

Cutting material				HSS		HSSE		HSSE	
Surface				TiN		Uncoated		TiAlN	
mm	mm	mm	f steel 700 ● (mm/U)	11055... Ident. No.		11057... Ident. No.		11060... Ident. No.	
8.3	109	165	0.15	164	●	450	●	450	●
8.4	109	165	0.15	165	●	451	●	451	●
8.5	109	165	0.15	168	●	168	●	168	●
8.6	109	165	0.15	169	●	-	-	-	-
9	115	175	0.16	175	●	175	●	175	●
9.5	115	175	0.16	182	●	182	●	182	○
9.7	121	184	0.16	186	●	-	-	-	-
9.8	121	184	0.16	187	●	187	●	187	●
10	121	184	0.16	190	●	190	●	190	●
10.2	121	184	0.16	192	●	192	●	192	○
10.5	121	184	0.16	197	●	197	●	197	●
11	128	197	0.16	204	●	204	●	204	●
11.5	128	197	0.16	207	●	207	●	207	●
12	134	205	0.16	211	●	211	●	211	●
12.5	134	205	0.18	214	●	525	●	-	-
13	134	205	0.18	219	●	530	●	-	-
13.5	140	214	0.18	-	-	535	●	-	-
14	140	214	0.19	230	●	540	●	-	-
14.5	144	220	0.19	-	-	545	●	-	-
15	144	220	0.19	-	-	550	●	-	-
15.5	149	227	0.2	-	-	555	●	-	-
16	149	227	0.2	-	-	560	●	-	-

Prod. Gr. 112

ATORN® Twist drills type TLP HSS 15xD-25xD (DIN 1869)

for universal use up to 1000 N/mm² in long-chipping materials





Application:
Geometry with deep-hole profile for application up to a strength of 1000 N/mm².

Execution:
- Twist drill with deep-hole profile

Advantage:
- Deep-hole profile to optimise chip removal at greater drilling depths without venting
- effective removal of chips thanks to large chipping spaces

Delivery:
Box quantity: Drill Ø 1.0–6.0 mm = 10 units
(price per unit)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11061	25	10				40	50	45	35	40	30	10		20					

Cutting material			HSS
Surface			Uncoated
mm	mm	mm	f steel 700 ● (mm/U)	11061... Ident. No.	
---	---	---	---	---	---
2	85	125	0.05	020	●
2.5	95	140	0.05	025	●
3	100	150	0.06	030	●
3	130	190	0.06	035	●
3.5	115	165	0.07	040	●
4	120	175	0.09	050	●
4	150	220	0.09	055	●
4	190	280	0.09	060	●
4.5	125	185	0.1	065	●
5	135	195	0.12	080	●
5	170	245	0.12	085	●
5	210	315	0.12	090	●
5.5	140	205	0.13	095	●
6	140	205	0.14	110	●
6	180	260	0.14	115	●
6	225	330	0.14	120	●
6.5	150	215	0.16	122	●
7	155	225	0.17	135	●
7	200	290	0.17	140	●
8	165	240	0.2	165	●
8	210	305	0.2	170	●
8	265	390	0.2	175	●
8.5	165	240	0.21	180	●
9	175	250	0.21	195	●
10	185	265	0.22	225	●
10	235	340	0.22	230	●
10	295	430	0.22	235	●

Prod. Gr. 1AA

Twist drill type VA

For use in stainless steel and special alloys

Application:
Series and single-part production on conventional and CNC machines in the stainless steel, special alloy and (steel) material groups up to a strength of 1300 N/mm².

advantage:
- special geometry with aggressive cutter design and free geometry for very smooth cutting in stainless steel and special alloys
- long service life owing to increased cobalt content






ATORN® ORION® Twist drill type stainless steel HSSE 5xD (DIN 338)

For use in stainless steel and special alloys

HSSE | 5xD | Typ VA | 130° | HA



No. 11028



No. 11029

Application:
For use in stainless steel, special alloys up to a strength of 1300 N/mm².

Execution:
- **No. 11028:** twist drill with stainless steel profile
- **No. 11029:** Twist drill with stainless steel profile

Advantage:
- **No. 11028:** Special geometry with aggressive cutter design and free geometry for very smooth cutting
- **No. 11029:** special geometry with aggressive flute design and free geometry for very smooth cutting

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11028	30	20	10	10	20	50	70	70	45	40	30				10	10	10		
11029	30	20	10	10	20	50	70	70	45	40	30				10	10	10		

				ATORN®		ORION®	
Cutting material				HSSE		HSSE	
Surface				Uncoated		Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11029... Ident. No.		11028... Ident. No.	
0.3	3	19	0.02	011	●	-	-
0.4	5	20	0.02	021	●	-	-
0.5	6	22	0.02	031	●	-	-
0.6	7	24	0.02	041	●	-	-
0.7	9	28	0.03	051	●	-	-
0.8	10	30	0.03	061	●	-	-
0.9	11	32	0.03	071	●	-	-
1	12	34	0.03	081	●	081	●
1.1	14	36	0.03	091	●	091	●
1.2	16	38	0.03	101	●	101	●
1.3	16	38	0.03	111	●	-	-
1.4	18	40	0.03	121	●	121	●
1.45	18	40	0.03	125	●	-	-
1.5	18	40	0.03	131	●	131	●
1.6	20	43	0.03	141	●	141	●
1.7	20	43	0.03	151	●	151	●
1.8	22	46	0.03	161	●	161	●
1.9	22	46	0.03	171	●	171	●
2	24	49	0.03	181	●	181	●
2.1	24	49	0.03	192	●	192	●
2.2	27	53	0.04	202	●	202	●
2.3	27	53	0.04	210	●	210	●
2.4	30	57	0.04	220	●	220	●
2.5	30	57	0.04	230	●	230	●
2.6	30	57	0.04	240	●	240	●
2.7	33	61	0.04	250	●	250	●
2.8	33	61	0.04	260	●	260	●
2.9	33	61	0.04	270	●	270	●
3	33	61	0.04	280	●	280	●
3.1	36	65	0.04	282	●	282	●
3.17	36	65	0.04	285	●	-	-
3.2	36	65	0.04	286	●	286	●
3.25	36	65	0.04	287	●	-	-
3.26	36	65	0.04	288	●	-	-
3.3	36	65	0.04	289	●	289	●
3.4	39	70	0.05	291	●	291	●
3.5	39	70	0.05	293	●	293	●
3.6	39	70	0.05	296	●	296	●
3.7	39	70	0.05	299	●	299	●
3.8	43	75	0.05	302	●	302	●
3.9	43	75	0.05	305	●	305	●
3.97	43	75	0.05	306	●	-	-
4	43	75	0.05	310	●	310	●
4.1	43	75	0.05	314	●	314	●
4.2	43	75	0.05	316	●	316	●
4.3	47	80	0.06	319	●	319	●
4.4	47	80	0.06	324	●	324	●
4.5	47	80	0.06	326	●	326	●
4.6	47	80	0.06	329	●	329	●
4.65	47	80	0.06	330	●	-	-
4.7	47	80	0.06	332	●	332	●
4.8	52	86	0.06	335	●	335	●
4.9	52	86	0.06	337	●	337	●
5	52	86	0.06	341	●	341	●
5.1	52	86	0.07	344	●	344	●
5.2	52	86	0.07	349	●	349	●
5.3	52	86	0.07	352	●	352	●
5.4	57	93	0.07	355	●	355	●
5.5	57	93	0.07	358	●	358	●
5.55	57	93	0.07	359	●	-	-

				ATORN®		ORION®	
Cutting material				HSSE		HSSE	
Surface				Uncoated		Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11029... Ident. No.		11028... Ident. No.	
5.6	57	93	0.07	361	●	361	●
5.7	57	93	0.07	364	●	364	●
5.8	57	93	0.07	367	●	367	●
5.9	57	93	0.08	369	●	369	●
6	57	93	0.08	371	●	371	●
6.1	63	101	0.08	373	●	373	●
6.2	63	101	0.08	375	●	375	●
6.3	63	101	0.08	377	●	377	●
6.35	63	101	0.08	378	●	-	-
6.4	63	101	0.08	379	●	379	●
6.5	63	101	0.08	381	●	381	●
6.6	63	101	0.08	383	●	383	●
6.7	63	101	0.08	385	●	385	●
6.8	69	109	0.09	387	●	387	●
6.9	69	109	0.09	389	●	389	●
7	69	109	0.09	391	●	391	●
7.1	69	109	0.09	393	●	393	●
7.2	69	109	0.09	396	●	396	●
7.3	69	109	0.09	398	●	398	●
7.4	69	109	0.09	400	●	400	●
7.5	69	109	0.09	402	●	402	●
7.6	75	117	0.09	-	-	405	●
7.6	75	117	0.1	405	●	-	-
7.7	75	117	0.09	-	-	407	●
7.7	75	117	0.1	407	●	-	-
7.8	75	117	0.1	409	●	409	●
7.9	75	117	0.1	411	●	411	●
8	75	117	0.1	414	●	414	●
8.1	75	117	0.1	416	●	416	●
8.2	75	117	0.1	418	●	-	-
8.3	75	117	0.1	420	●	420	●
8.4	75	117	0.1	423	●	423	●
8.5	75	117	0.11	425	●	425	●
8.6	81	125	0.11	427	●	427	●
8.7	81	125	0.11	429	●	429	●
8.8	81	125	0.11	432	●	432	●
8.9	81	125	0.11	434	●	434	●
9	81	125	0.11	436	●	436	●
9.1	81	125	0.11	438	●	438	●
9.2	81	125	0.11	441	●	441	●
9.3	81	125	0.11	443	●	443	●
9.4	81	125	0.11	445	●	445	●
9.5	81	125	0.12	447	●	447	●
9.6	87	133	0.12	450	●	-	-
9.7	87	133	0.12	452	●	-	-
9.8	87	133	0.12	454	●	454	●
9.9	87	133	0.12	456	●	456	●
10	87	133	0.12	459	●	459	●
10.2	87	133	0.12	461	●	461	●
10.3	87	133	0.13	463	●	-	-
10.5	87	133	0.13	466	●	466	●
11	94	142	0.13	473	●	473	●
11.2	94	142	0.13	476	●	-	-
11.5	94	142	0.14	480	●	480	●
11.8	94	142	0.14	485	●	-	-
12	101	151	0.14	488	●	488	●
12.2	101	151	0.14	490	●	-	-
12.5	101	151	0.15	494	●	494	●
12.7	101	151	0.15	496	●	-	-
13	101	151	0.15	500	●	500	●

				ATORN®		ORION®	
			Cutting material	HSSE		HSSE	
			Surface	Uncoated		Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11029... Ident. No.		11028... Ident. No.	
13.5	108	160	0.15	507	●	-	-
14	108	160	0.15	514	●	-	-
14.5	114	169	0.15	521	●	-	-

				ATORN®		ORION®	
			Cutting material	HSSE		HSSE	
			Surface	Uncoated		Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11029... Ident. No.		11028... Ident. No.	
15	114	169	0.17	528	●	-	-
15.5	120	178	0.17	536	●	-	-
16	120	178	0.17	543	●	-	-

ORION = Prod. Gr. 102
ATORN® = Prod. Gr. 112

ATORN® Twist drill type stainless steel HSSE 10xD, uncoated (DIN 340)

For application in stainless steel and special alloys



Application:
For use in stainless steel, special alloys up to a strength of 1300 N/mm².

Execution:
- Twist drill with stainless steel profile

Advantage:
- Special geometry with aggressive cutter design and free geometry for very smooth cutting

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11058	30	20	10	15	10	50	70	45	35	40	30				7	6	6		

			Cutting material	HSSE	
			Surface	Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11058... Ident. No.	
1	33	56	0.03	030	●
1.1	37	60	0.03	031	●
1.2	41	65	0.03	033	●
1.3	41	65	0.03	035	●
1.4	45	70	0.03	037	●
1.5	45	70	0.03	039	●
1.6	50	76	0.03	042	●
1.7	50	76	0.03	044	●
1.8	53	80	0.03	046	●
1.9	53	80	0.03	048	●
2	56	85	0.03	051	●
2.1	56	85	0.03	053	●
2.2	59	90	0.04	055	●
2.3	59	90	0.04	057	●
2.4	62	95	0.04	060	●
2.5	62	95	0.04	062	●
2.6	62	95	0.04	064	●
2.7	66	100	0.04	066	●
2.8	66	100	0.04	069	●
2.9	66	100	0.04	071	●
3	66	100	0.04	073	●
3.1	69	106	0.04	075	●
3.2	69	106	0.04	078	●
3.3	69	106	0.04	080	●
3.4	73	112	0.05	082	●
3.5	73	112	0.05	084	●
3.6	73	112	0.05	087	●
3.7	73	112	0.05	089	●
3.8	78	119	0.05	091	●
3.9	78	119	0.05	093	●
4	78	119	0.05	096	●
4.1	78	119	0.05	098	●
4.2	78	119	0.05	100	●
4.3	82	126	0.06	102	●
4.4	82	126	0.06	105	●
4.5	82	126	0.06	107	●

			Cutting material	HSSE	
			Surface	Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11058... Ident. No.	
4.7	82	126	0.06	111	●
4.8	87	132	0.06	114	●
4.9	87	132	0.06	116	●
5	87	132	0.06	118	●
5.1	87	132	0.07	119	●
5.2	87	132	0.07	121	●
5.3	87	132	0.07	123	●
5.4	91	139	0.07	124	●
5.5	91	139	0.07	125	●
5.6	91	139	0.07	127	●
5.7	91	139	0.07	128	●
5.8	91	139	0.07	130	●
5.9	91	139	0.08	131	●
6	91	139	0.08	133	●
6.1	97	148	0.08	134	●
6.2	97	148	0.08	135	●
6.3	97	148	0.08	137	●
6.4	97	148	0.08	139	●
6.5	97	148	0.08	140	●
6.6	97	148	0.08	141	●
6.7	97	148	0.08	142	●
6.8	102	156	0.09	144	●
7	102	156	0.09	146	●
7.5	102	156	0.09	153	●
7.7	109	165	0.1	156	●
8	109	165	0.1	161	●
8.1	109	165	0.1	162	●
8.4	109	165	0.1	167	●
8.5	109	165	0.11	168	●
9	115	175	0.11	175	●
9.5	115	175	0.12	182	●
9.8	121	184	0.12	187	●
10	121	184	0.12	190	●
10.2	121	184	0.12	192	●
10.5	121	184	0.13	197	●
12	134	205	0.14	211	●

Prod. Gr. 110

Twist drill type X
for universal use up to 1300 N/mm²

Application:
Series and single-part production on conventional and CNC machines in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1300 N/mm².

advantage:
- very high wear resistance and heat resistance owing to high-quality HSSE-PM cutting material
- high cutting edge stability owing to special point thinning and cutting angle adjustment
- very long service life in higher-alloyed steels and materials





Typ X

ATORN® Twist drill type X HSSE-PM TiN 3xD (DIN 1897)
for universal use up to 1300 N/mm²

HSSE-PM | TiN | 3xD | Typ X | 118° | HA



Application:
Universal use in all material groups up to a strength of 1300 N/mm2.

Execution:
- Twist drill with special point thinning

Advantage:
- high wear resistance and increased heat resistance
- high cutting edge stability owing to special point thinning and cutting angle adjustment
- ideal for machining higher-alloyed and higher-strength steels and materials

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11080	50	35	15	12	10	80	90	80	50	50	45	40	15	40	12	12	12		

Cutting material				HSSE-PM	
			Surface	TiN	
mm	mm	mm	f steel 1000 ● (mm/U)	11080... Ident. No.	
1	6	26	0.03	015	●
1.1	7	28	0.03	017	●
1.2	8	30	0.03	020	●
1.3	8	30	0.03	022	●
1.4	9	32	0.03	024	●
1.5	9	32	0.03	026	●
1.6	10	34	0.03	029	●
1.7	10	34	0.03	031	●
1.8	11	36	0.03	033	●
1.9	11	36	0.03	035	●
2	12	38	0.03	038	●
2.1	12	38	0.03	040	●
2.2	13	40	0.04	042	●
2.3	13	40	0.04	044	●
2.4	14	43	0.04	047	●
2.5	14	43	0.04	049	●
2.6	14	43	0.04	051	●
2.7	16	46	0.04	053	●
2.8	16	46	0.04	056	●
2.9	16	46	0.04	058	●
3	16	46	0.04	060	●
3.1	18	49	0.04	062	●
3.2	18	49	0.04	065	●
3.3	18	49	0.05	067	●
3.4	20	52	0.05	069	●
3.5	20	52	0.05	071	●
3.6	20	52	0.05	074	●
3.7	20	52	0.06	076	●
3.8	22	55	0.06	078	●
3.9	22	55	0.06	080	●
4	22	55	0.06	083	●
4.1	22	55	0.06	084	●
4.2	22	55	0.07	085	●
4.3	24	58	0.07	087	●
4.4	24	58	0.07	089	●
4.5	24	58	0.07	090	●
4.6	24	58	0.08	091	●
4.7	24	58	0.08	092	●
4.8	26	62	0.08	095	●
4.9	26	62	0.08	096	●
5	26	62	0.08	097	●
5.1	26	62	0.09	098	●
5.2	26	62	0.09	099	●
5.3	26	62	0.09	101	●
5.4	28	66	0.09	102	●
5.5	28	66	0.1	103	●

Cutting material				HSSE-PM	
			Surface	TiN	
mm	mm	mm	f steel 1000 ● (mm/U)	11080... Ident. No.	
5.6	28	66	0.1	105	●
5.7	28	66	0.1	106	●
5.8	28	66	0.1	108	●
5.9	28	66	0.1	109	●
6	28	66	0.11	111	●
6.1	31	70	0.11	112	●
6.2	31	70	0.11	113	●
6.3	31	70	0.11	115	●
6.4	31	70	0.12	117	●
6.5	31	70	0.12	118	●
6.6	31	70	0.12	119	●
6.7	31	70	0.12	120	●
6.8	34	74	0.12	122	●
6.9	34	74	0.13	123	●
7	34	74	0.13	124	●
7.1	34	74	0.13	125	●
7.2	34	74	0.13	127	●
7.3	34	74	0.14	129	●
7.4	34	74	0.14	130	●
7.5	34	74	0.14	131	●
7.6	37	79	0.14	133	●
7.7	37	79	0.14	134	●
7.8	37	79	0.15	136	●
7.9	37	79	0.15	137	●
8	37	79	0.15	139	●
8.1	37	79	0.15	140	●
8.2	37	79	0.15	141	●
8.3	37	79	0.15	143	●
8.4	37	79	0.15	145	●
8.5	37	79	0.15	146	●
8.8	40	84	0.16	151	●
9	40	84	0.16	153	●
9.3	40	84	0.16	158	●
9.5	40	84	0.16	160	●
9.8	43	89	0.16	165	●
10	43	89	0.16	168	●
10.2	43	89	0.16	170	●
10.5	43	89	0.17	175	●
11	47	95	0.17	182	●
11.5	47	95	0.17	188	●
12	51	102	0.18	195	●
12.5	51	102	0.18	201	●
13	51	102	0.18	207	●
13.5	54	107	0.18	214	●
14	54	107	0.19	221	●

Prod. Gr. 1AG

ATORN® Twist drill type X HSSE-PM TIN 5xD (DIN 338)

for universal use up to 1300 N/mm²

HSSE-PM | TiN | 5xD | Typ X | 118° | HA



Application:
Universal use in all material groups up to a strength of 1300 N/mm2.

Execution:
- Twist drill with special point thinning

Advantage:
- high wear resistance and increased heat resistance
- high cutting edge stability owing to special point thinning and cutting angle adjustment
- ideal for machining higher-alloyed and higher-strength steels and materials

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11025	50	35	15	12	10	80	90	80	50	50	45	40	15	40	12	12	12		

Cutting material			HSSE-PM	
Surface			TiN	
mm	mm	mm	f steel 1000 ● (mm/U)	11025... Ident. No.	
1	12	34	0.03	081	●
1.1	14	36	0.03	091	●
1.2	16	38	0.03	101	●
1.3	16	38	0.03	111	●
1.4	18	40	0.03	121	●
1.5	18	40	0.03	131	●
1.6	20	43	0.03	141	●
1.7	20	43	0.03	151	●
1.8	22	46	0.03	161	●
1.9	22	46	0.03	171	●
2	24	49	0.03	181	●
2.1	24	49	0.03	192	●
2.2	27	53	0.04	202	●
2.3	27	53	0.04	210	●
2.4	30	57	0.04	220	●
2.5	30	57	0.04	230	●
2.6	30	57	0.04	240	●
2.7	33	61	0.04	250	●
2.8	33	61	0.04	260	●
2.9	33	61	0.04	270	●
3	33	61	0.04	280	●
3.1	36	65	0.04	282	●
3.2	36	65	0.04	286	●
3.3	36	65	0.05	289	●
3.4	39	70	0.05	291	●
3.5	39	70	0.05	293	●
3.6	39	70	0.05	296	●
3.7	39	70	0.06	299	●
3.8	43	75	0.06	302	●
3.9	43	75	0.06	305	●
4	43	75	0.06	310	●
4.1	43	75	0.06	314	●
4.2	43	75	0.07	316	●
4.3	47	80	0.07	319	●
4.4	47	80	0.07	324	●
4.5	47	80	0.07	326	●
4.6	47	80	0.08	329	●
4.7	47	80	0.08	332	●
4.8	52	86	0.08	335	●
4.9	52	86	0.08	337	●
5	52	86	0.08	341	●
5.1	52	86	0.09	344	●
5.2	52	86	0.09	349	●
5.3	52	86	0.09	352	●
5.4	57	93	0.09	355	●
5.5	57	93	0.1	358	●
5.6	57	93	0.1	361	●

Cutting material			HSSE-PM	
Surface			TiN	
mm	mm	mm	f steel 1000 ● (mm/U)	11025... Ident. No.	
5.7	57	93	0.1	364	●
5.8	57	93	0.1	367	●
5.9	57	93	0.1	369	●
6	57	93	0.11	371	●
6.1	63	101	0.11	373	●
6.2	63	101	0.11	375	●
6.3	63	101	0.11	377	●
6.4	63	101	0.12	379	●
6.5	63	101	0.12	381	●
6.6	63	101	0.12	383	●
6.7	63	101	0.12	385	●
6.8	69	109	0.12	387	●
6.9	69	109	0.13	389	●
7	69	109	0.13	391	●
7.1	69	109	0.13	393	●
7.2	69	109	0.13	396	●
7.3	69	109	0.14	398	●
7.4	69	109	0.14	400	●
7.5	69	109	0.14	402	●
7.6	75	117	0.14	405	●
7.7	75	117	0.14	407	●
7.8	75	117	0.15	409	●
7.9	75	117	0.15	411	●
8	75	117	0.15	414	●
8.1	75	117	0.15	416	●
8.2	75	117	0.15	418	●
8.3	75	117	0.15	420	●
8.4	75	117	0.15	423	●
8.5	75	117	0.15	425	●
8.8	81	125	0.16	432	●
9	81	125	0.16	436	●
9.3	81	125	0.16	443	●
9.5	81	125	0.16	447	●
9.8	87	133	0.16	454	●
10	87	133	0.16	459	●
10.2	87	133	0.16	461	●
10.3	87	133	0.16	463	●
10.5	87	133	0.17	466	●
11	94	142	0.17	473	●
11.5	94	142	0.17	480	●
12	101	151	0.18	488	●
12.3	101	151	0.18	492	●
12.5	101	151	0.18	494	●
12.7	101	151	0.18	496	●
13	101	151	0.18	500	●
13.5	108	160	0.18	507	●
14	108	160	0.19	514	●

Prod. Gr. 1AG

twist drill type UNI/VA HSSE V3
for high-strength and stainless steel processing

application:
problem solver on conventional machines without internal cooling in the following material groups: steel, stainless steel and high-strength materials

advantage:
- special geometry in conjunction with HSSE-V3 cutting material makes the drill the ultimate problem solver
- very high cutting speeds achievable
- very long service life in high-alloyed steels and stainless steels
- for low-performance machines without internal cooling in stainless steel





TiAlN | Typ VA

micro twist drill HSSE-PM
for universal use up to 1300 N/mm²

Application:
for machining micro holes up to a strength of 1300 N/mm².

advantage:
- high-quality HSSE PM cutting material provides maximum toughness and is therefore less susceptible to breakage
- diameter from 0.05 mm–1.50 mm
- cost-effective alternative to solid carbide range







ATORN® HSSE-PM micro drill (DIN 1899)
for universal use up to 1300 N/mm²







Application:
Standard geometry for universal use up to a strength of 1300 N/mm².

Execution:
- profile-ground
- Ø=0.05-0.8 mm shaft diameter = 1.0 mm
- Ø=0.85–1.50 mm shaft diameter = 1.5 mm

Advantage:
- excellent all-round properties and precise cutting pattern
- HSSE-PM cutting material ensures a long service life with a high degree of resilience at the same time

Delivery:
Packaging unit = 10 pieces (price per piece)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11054	30	20	10	10	10	50	60	50	45	40	30	30	10	30	7	6	6		

Cutting material			Surface	HSSE-PM Uncoated		
mm	mm	mm	f steel 1000 ● (mm/U)	11054... Ident. No.		
0.05	0.4	25	0.006	005	●	
0.08	0.5	25	0.006	008	●	
0.1	0.7	25	0.006	010	●	
0.15	1	25	0.007	015	●	
0.2	1.8	25	0.008	020	●	
0.25	2.2	25	0.009	025	●	
0.3	2.2	25	0.01	030	●	
0.35	2.8	25	0.011	035	●	
0.4	3.6	25	0.012	040	●	
0.45	3.6	25	0.013	045	●	
0.5	4	25	0.014	050	●	
0.55	4.5	25	0.015	055	●	
0.6	4.5	25	0.016	060	●	

Cutting material			Surface	HSSE-PM Uncoated		
mm	mm	mm	f steel 1000 ● (mm/U)	11054... Ident. No.		
0.65	5	25	0.017	065	●	
0.7	5.6	25	0.018	070	●	
0.75	5.6	25	0.019	075	●	
0.8	6.3	25	0.022	080	●	
0.85	6.3	25	0.025	085	●	
0.9	7.1	25	0.028	090	●	
0.95	7.1	25	0.031	095	●	
1	8	25	0.034	100	●	
1.1	9	25	0.037	110	●	
1.2	10	25	0.04	120	●	
1.3	10	25	0.043	130	●	
1.4	11.2	25	0.046	140	●	
1.5	12.5	25	0.049	150	●	

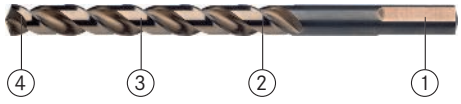
Prod. Gr. 112

Multi-twist drill
Straight shank with 3-surface cut

Application:
The multi-twist drill was specially developed for mobile use on cordless drill screwdrivers (plates up to 5 mm) and electronic drills.

advantage:
- Three-faced polished section on the shank ensures optimum power transmission and fastening in drill chuck. Slippage is a thing of the past. Less effort when opening or closing in drill chuck.
- 40° twist angle ensures reliable removal of chippings during universal use. Higher cutting speeds with increased stability and accuracy.
- Special coating in connection with relief grinding provides for maximum adhesion of the lubricant and reliable chip removal.
- In the case of hand-held applications with a cordless drill screwdriver in particular, the 135° tip angle provides for a very high precision of the bore hole, a reduced cutting edge (extension of the battery life) and optimum centring precision, thanks to the innovative centre grinding.





ATORN® Multi-twist drills (DIN 338)

For universal use up to 1300 N/mm² in portable drills

HSSE | 5xD | UNI | 135° | HA



Application:
Multi-spiral drill for portable use on cordless drill screwdrivers and drilling machines engineered up to a plate thickness of 5 mm.

Execution:
- Twist drill with special geometry for mobile use

Advantage:
- Three-faced polished section on the shank ensures optimum force transmission and fastening in drill chuck (no slipping through)
- 135° tip angle ensures very high degree of precision of the bore hole, in particular with hand-held applications in the cordless drill screwdriver thanks to the innovative centre cutting, reduced cutting forces (longer battery life) and optimum centring precision
- Special coating in conjunction with relief grinding ensures maximum adhesion of the lubricant and reliable chip removal

Delivery:
Packaging unit: drill Ø 1.0-6.0 mm = 10 pieces (price per piece)

Notes:
drill Ø <4.00 mm without three-faced polished section

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11032020-130	30	20	10	10	10	50	60	50	45	40	30	20	15	30	10	10	10		

			Cutting material	HSSE	
			Surface	Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11032... Ident. No.	
2	24	49	0.03	020	●
2.5	30	57	0.04	025	●
3	33	61	0.04	030	●
3.2	36	65	0.04	032	●
3.3	36	65	0.04	033	●
3.5	39	70	0.05	035	●
4	43	75	0.05	040	●
4.2	43	75	0.05	042	●
4.5	47	80	0.06	045	●
5	52	86	0.06	050	●
5.5	57	93	0.07	055	●
6	57	93	0.08	060	●
6.5	63	101	0.08	065	●
6.8	69	109	0.09	068	●

			Cutting material	HSSE	
			Surface	Uncoated	
mm	mm	mm	f steinl. st. ● (mm/U)	11032... Ident. No.	
7	69	109	0.09	070	●
7.5	69	109	0.09	075	●
8	75	117	0.1	080	●
8.5	75	117	0.11	085	●
9	81	125	0.11	090	●
9.5	81	125	0.12	095	●
10	87	133	0.12	100	●
10.2	87	133	0.12	102	●
10.5	87	133	0.13	105	●
11	94	142	0.13	110	●
11.5	94	142	0.14	115	●
12	101	151	0.14	120	●
12.5	101	151	0.15	125	●
13	101	151	0.15	130	●

Prod. Gr. 112

ATORN® Multi twist drill set (DIN 338)

For universal use up to 1300 N/mm² in portable drills

Application:
Multi-spiral drill for portable use on cordless drill screwdrivers and drilling machines engineered up to a plate thickness of 5 mm.

Execution:
- twist drill with special geometry for mobile use

Advantage:
- Three-faced polished section on the shank ensures optimum force transmission and fastening in drill chuck (no slipping through)
- 135° tip angle ensures very high degree of precision of the bore hole, in particular with hand-held applications in the cordless drill screwdriver thanks to the innovative centre cutting, reduced cutting forces (longer battery life) and optimum centring precision
- special coating in connection with relief grinding ensures maximum lubricant adhesion and safe chip removal

Notes:
Drill Ø <4.00 mm without three-faced polished section





			Surface	Uncoated	
			Cutting material	HSSE	
			Type	UNI	
Composition of set	Pitch of drill Ø	Number of pieces in assortment/set (PCS)	11032... Ident. No.		
2.0-8.0 mm (no. 11032)	1 mm	6	001	●	
1.0-10.0 (no. 11032)	0.5 mm	19	002	●	
1.0-13.0 (no. 11032)	0.5 mm	25	003	●	

Prod. Gr. 112

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11032001-003	30	20	10	10	10	50	60	50	45	40	30	20	15	30	10	10	10		

ATORN® HSS core drill (DIN 344)

for universal use up to 1000 N/mm²

HSS | Z 3



Application:
For core drilling pre-drilled, pre-cast or punched holes.

Advantage:
- stable grinding combined with the three blades ensure that any mis-alignments and run-out of the pre-made holes are corrected

Execution:
- 3-blade design

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11410	22	20	10	6	4	40	50	40	35	30	25	40		20					

Cutting edge Ø (mm)	Cutting edge length (mm)	Length (mm)	f steel 700 ● (mm/U)	11410... Ident. No.	
4.8	74	108	0.05	048	●
5	74	108	0.05	050	●
5.8	80	116	0.05	058	●
6	80	116	0.06	060	●
6.8	93	133	0.06	068	●
7	93	133	0.06	070	●
7.8	100	142	0.07	078	●
8	100	142	0.07	080	●
8.8	107	151	0.07	088	●
9	107	151	0.08	090	●
9.8	116	162	0.08	098	●
10	116	162	0.08	100	●
11	125	173	0.08	110	●
11.75	134	184	0.08	117	●
12	134	184	0.08	120	●

Prod. Gr. 117

ATORN® Twist drill set HSS/E 5xD (DIN 338)

in metal box



No. 11037 900, 11042 051, 11042 251, 11049 051
D = 1–10 mm, increasing by 0.5 mm



No. 11037 920, 11042 061, 11042 261, 11049 061
D = 1–10.5 mm, increasing by 0.5 mm + core drill



No. 11037 930, 11042 071, 11042 271, 11049 071
D = 1-13 mm, increasing by 0.5 mm



No. 11042 011, 11042 111, 11049 011



No. 11042 021, 11042 121, 11049 021
D = 6–10 mm, increasing by 0.1 mm



No. 11042 081
D = 1-5.9 mm, increasing by 0.1 mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11037900-930	40	20	10	10	8	60	80	70	45	40	30	30	10	30	10	10	10		
11042011-081	30	20		10		40	60	70	45	40	30	20	10	25					
11042111-271	30	20		10		40	60	70	45	40	30	20	10	25					
11049011-071	40	20	10	10	10	50	45	40	35	40	30	20	10	30	6	6	6		

			Surface	TiNALOX		Vaporised		TiN		TiN	
			Cutting material	HSSE		HSS		HSS		HSSE	
			Type	U4 (no. 11037)		N (no. 11020)		N (no. 11022)		TLP (no. 11030)	
Composition of set	Pitch of drill Ø	Number of pieces in assort-ment/set (PCS)		11037... Ident. No.		11042... Ident. No.		11042... Ident. No.		11049... Ident. No.	
1,0-10,0	0.5 mm	19		900	●	051	●	251	●	051	●
1,0-10,5	0.5 mm + core-hole drill	24		920	●	061	●	261	●	061	●
1,0-13,0	0.5 mm	25		930	●	071	●	271	●	071	●
6,0-10,0	0.1 mm	41		-	-	021	●	121	●	021	●
1,0-10,0	0.1 mm	91		-	-	081	●	-	-	-	-
1,0-5,9	0.1 mm	50		-	-	011	●	111	●	011	●

11042... = Prod. Gr. 1AA
11037... = Prod. Gr. 1AG
11042... = Prod. Gr. 112
11049... = Prod. Gr. 112

ATORN® ORION® Twist drill set HSS/HSSE 5xD

Without box

		ATORN®		ORION®		ORION®	
	Surface	Vaporised		Vaporised		TiN	
	Cutting material	HSS		HSS		HSS	
	Type	N (no. 11020)		N (no. 11040)		N (no. 11031)	
Composition of set	Pitch of drill Ø	11042... Ident. No.		11043... Ident. No.		11047... Ident. No.	
1,0-5,0	0.1 mm	010	●	010	●	010	●
5,1-10,0	0.1 mm	020	●	020	●	-	-
1,0-10,0	0.5 mm	050	●	050	●	-	-
1,0-10,5	0.5 mm + core-hole drill	060	●	060	●	-	-
1,0-13,0	0.5 mm	070	●	070	●	070	●

ORION = Prod. Gr. 1AP
ATORN® = Prod. Gr. 112



No. 11042–11043



No. 11047

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11042010-070	30	20		10		50	45	40	35	40	30	20	10	25					
11043010-070	30	20		10		50	45	40	35	40	30	20	10	25					
11047010-070	40	20	10	10		50	45	40	35	40	30	20	10	30	10				

ATORN® Twist drill set 3xD (DIN 1897)

In metal box

			Surface	Vaporised		TiNALOX	
			Cutting material	HSS		HSSE	
			Type	N (no. 11051)		U4 (no. 11086)	
Composition of set	Pitch of drill Ø	Number of pieces in assortment/set (PCS)		11051... Ident. No.		11086... Ident. No.	
1,0-10,0	1 mm	10		910	●	910	●
1,0-10,0	0.5 mm + core-hole drill	23		920	●	920	●

11051... = Prod. Gr. 1AA
11086... = Prod. Gr. 1AG



No. 11051 910, 11086 910
Ident. No. 910



No. 11051 920, 11086 920
Ident. No. 920

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11051910-920	30	20	10	10		40	60	50	35	35	20	20	10	20	8				
11086910-920	40	20	10	10	8	60	80	70	45	40	30	30	10	30	10	10	10		

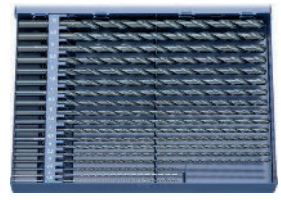
ATORN® Twist drill set type N HSS 15xD-25xD steam-treated

for universal use up to 1000 N/mm²

Application:
Proven standard geometry for universal use up to 1000 N/mm².

Execution:
- Twist drill with universal standard geometry
- **Ident. No. 900:**
  - Ø 1.5 mm–2.5 mm cutting length 100 mm, overall length 160 mm
  - Ø 3.0 mm–10.0 mm cutting length 200 mm, overall length 250 mm
- **Ident. No. 910:**
  - Ø 2.0 mm cutting length 100 mm, overall length 160 mm
  - Ø 3.0 mm–10.0 mm cutting length 200 mm, overall length 250 mm

Advantage:
- Excellent all-round properties and precise cutting pattern
- Steam treatment increases service life



Pitch of drill Ø					0.5 mm	1 mm
Number of pieces in assortment/set (PCS)					19	9
	Surface	Cutting material	Type			
11063...	Vaporised	HSS	N	Ident. No.	900 ●	910 ●

Prod. Gr. 112

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11063900	20	10				40	50	40	30	30	20	10		20					
11063910	20	10				40	50	40	30	30	20	10		20					

ATORN® ORION® Twist drill type N HSS with offset shank

for universal use up to 1000 N/mm²



Application:
Standard geometry for universal use up to 1000 N/mm².

Execution:
- Twist drill with universal standard geometry

Advantage:
- excellent all-round properties and precise cutting pattern
- Steam treatment ensures favourable adherence of coolant
- Diameter-independent straight shank of uniform length for clamping and tool advantages
- **No. 11068:** Inexpensive tool, very good value for money

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11067	30	20	10	10	8	40	60	50	30	30	20	20	10	20	4				
11068	30	20	10	10	8	40	60	50	30	30	20	20	10	20	4				

mm	mm	mm	Shaft Ø (mm)	f steel 700 ● (mm/U)	ATORN® 11067... Ident. No.		ORION® 11068... Ident. No.	
13.5	76	152	12.7	0.26	135	●	135	●
14	76	152	12.7	0.26	140	●	140	●
14.5	76	152	12.7	0.27	145	●	145	●
15	76	152	12.7	0.27	150	●	150	●
15.5	76	152	12.7	0.28	155	●	155	●
16	76	152	12.7	0.28	160	●	160	●
16.5	76	152	12.7	0.28	165	●	165	●
17	76	152	12.7	0.29	170	●	170	●
17.5	76	152	12.7	0.29	175	●	175	●
18	76	152	12.7	0.3	180	●	180	●
18.5	76	152	12.7	0.3	185	●	185	●
19	76	152	12.7	0.3	190	●	190	●
19.5	76	152	12.7	0.31	195	●	195	●
20	76	152	12.7	0.31	200	●	200	●
21	76	152	12.7	0.32	210	●	210	●
22	76	152	12.7	0.33	220	●	220	●
23	76	152	12.7	0.33	230	●	230	●
24	76	152	12.7	0.34	240	●	240	●
25	76	152	12.7	0.35	250	●	250	●

ATORN® = Prod. Gr. 1AA
ORION = Prod. Gr. 1AP

ATORN® Twist drill set, type N HSS with offset shank

for universal use up to 1000 N/mm²

Application:
Standard geometry for universal use up to a strength of 1000 N/mm².

Execution:
- Twist drill with universal standard geometry

Advantage:
- excellent all-round properties and precise cutting pattern
- Steam treatment ensures favourable adherence of coolant
- Diameter-independent straight shank of uniform length for clamping and tooling advantages



Composition of set		Ø 13.5-20 mm	Ø 14-25 mm
Pitch of drill Ø		0.5 mm	1 mm
Number of pieces in assortment/set (PCS)		14	12
11067...	Ident. No.	900	910
		●	●

Prod. Gr. 1AA

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11067900-910	30	20	10	10	8	40	60	50	30	30	20	20	10	20	4				

ATORN® ORION® Twist drill type N HSS 5xD (DIN 345)

for universal use up to 1000 N/mm²

HSS | 5xD | Typ N | 118° | MK



No. 11070



No. 11071

Application:
Standard geometry for universal use up to 1000 N/mm².

Execution:
- Twist drill with universal standard geometry

Advantage:
- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- Steam treatment ensures favourable adherence of coolant

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11070	30	20		10		50	45	40	35	40	30	20	10	25					
11071	30	20		10		50	45	40	35	40	30	20	10	25					

					ATORN®		ORION®	
				Cutting material	HSS		HSS	
				Surface	Vaporised		Vaporised	
mm	mm	mm		f steel 700 ● (mm/U)	11070... Ident. No.		11071... Ident. No.	
5	52	133	MK 1	0.11	031	●	-	-
6	57	138	MK 1	0.12	046	●	-	-
7	69	150	MK 1	0.12	059	●	-	-
8	75	156	MK 1	0.12	074	●	-	-
8.5	75	156	MK 1	0.13	081	●	-	-
9	81	162	MK 1	0.13	088	●	-	-
9.5	81	162	MK 1	0.14	095	●	-	-
10	87	168	MK 1	0.22	103	●	103	●
10.2	87	168	MK 1	0.22	105	●	-	-
10.5	87	168	MK 1	0.23	110	●	110	●
11	94	175	MK 1	0.23	117	●	117	●
11.5	94	175	MK 1	0.24	124	●	124	●
11.75	94	175	MK 1	0.24	128	●	128	●
11.8	94	175	MK 1	0.24	129	●	-	-
12	101	182	MK 1	0.24	132	●	132	●
12.1	101	182	MK 1	0.24	133	●	-	-
12.2	101	182	MK 1	0.24	134	●	-	-
12.5	101	182	MK 1	0.25	138	●	138	●
12.75	101	182	MK 1	0.25	141	●	-	-
13	101	182	MK 1	0.25	144	●	144	●
13.25	108	189	MK 1	0.25	-	-	147	●
13.5	108	189	MK 1	0.26	151	●	151	●
13.75	108	189	MK 1	0.26	154	●	154	●
14	108	189	MK 1	0.26	158	●	158	●
14.25	114	212	MK 2	0.26	161	●	161	●
14.5	114	212	MK 2	0.27	165	●	165	●
14.75	114	212	MK 2	0.27	169	●	169	●
15	114	212	MK 2	0.27	172	●	172	●
15.25	120	218	MK 2	0.27	176	●	176	●
15.5	120	218	MK 2	0.28	180	●	180	●
15.75	120	218	MK 2	0.28	183	●	183	●
16	120	218	MK 2	0.28	187	●	187	●
16.25	125	223	MK 2	0.28	190	●	190	●
16.5	125	223	MK 2	0.28	194	●	194	●
16.75	125	223	MK 2	0.29	198	●	198	●
17	125	223	MK 2	0.29	201	●	201	●
17.25	130	228	MK 2	0.29	205	●	205	●
17.5	130	228	MK 2	0.29	209	●	209	●
17.75	130	228	MK 2	0.29	212	●	212	●
18	130	228	MK 2	0.3	216	●	216	●
18.25	135	233	MK 2	0.3	-	-	219	●
18.5	135	233	MK 2	0.3	223	●	223	●
18.75	135	233	MK 2	0.3	227	●	227	●
19	135	233	MK 2	0.3	230	●	230	●
19.25	140	238	MK 2	0.31	-	-	234	●
19.5	140	238	MK 2	0.31	238	●	238	●
19.75	140	238	MK 2	0.31	241	●	241	●
20	140	238	MK 2	0.31	245	●	245	●
20.25	145	243	MK 2	0.31	-	-	249	●
20.5	145	243	MK 2	0.32	252	●	252	●
20.75	145	243	MK 2	0.32	-	-	256	●
21	145	243	MK 2	0.32	259	●	259	●
21.25	150	248	MK 2	0.32	-	-	263	●
21.5	150	248	MK 2	0.32	267	●	267	●
21.75	150	248	MK 2	0.33	270	●	270	●
22	150	248	MK 2	0.33	274	●	274	●
22.25	150	248	MK 2	0.33	-	-	278	●
22.5	155	253	MK 2	0.33	281	●	281	●
22.75	155	253	MK 2	0.33	-	-	285	●
23	155	253	MK 2	0.33	288	●	288	●
23.25	155	276	MK 3	0.34	-	-	290	●

					ATORN®		ORION®	
				Cutting material	HSS		HSS	
				Surface	Vaporised		Vaporised	
mm	mm	mm		f steel 700 ● (mm/U)	11070... Ident. No.		11071... Ident. No.	
23.5	155	276	MK 3	0.34	292	●	292	●
23.75	160	281	MK 3	0.34	-	-	293	●
24	160	281	MK 3	0.34	295	●	295	●
24.25	160	281	MK 3	0.34	-	-	297	●
24.5	160	281	MK 3	0.35	298	●	298	●
24.75	160	281	MK 3	0.35	300	●	300	●
25	160	281	MK 3	0.35	301	●	301	●
25.25	165	286	MK 3	0.35	-	-	302	●
25.4	165	286	MK 3	0.35	303	●	-	-
25.5	165	286	MK 3	0.35	304	●	304	●
25.75	165	286	MK 3	0.35	-	-	305	●
26	165	286	MK 3	0.35	307	●	307	●
26.25	165	286	MK 3	0.36	-	-	309	●
26.5	165	286	MK 3	0.36	310	●	310	●
26.75	170	291	MK 3	0.36	-	-	312	●
27	170	291	MK 3	0.36	314	●	314	●
27.5	170	291	MK 3	0.36	317	●	317	●
27.75	170	291	MK 3	0.36	-	-	318	●
28	170	291	MK 3	0.36	320	●	320	●
28.5	175	296	MK 3	0.37	323	●	323	●
28.75	175	296	MK 3	0.37	-	-	325	●
29	175	296	MK 3	0.37	327	●	327	●
29.5	175	296	MK 3	0.37	330	●	330	●
29.75	175	296	MK 3	0.37	-	-	331	●
30	175	296	MK 3	0.37	333	●	333	●
30.5	180	301	MK 3	0.37	336	●	336	●
30.75	180	301	MK 3	0.37	338	●	-	-
31	180	301	MK 3	0.38	340	●	340	●
31.5	180	301	MK 3	0.38	-	-	343	●
32	185	334	MK 4	0.38	345	●	345	●
32.5	185	334	MK 4	0.38	347	●	-	-
33	185	334	MK 4	0.38	350	●	350	●
33.5	185	334	MK 4	0.39	-	-	352	●
34	190	339	MK 4	0.39	354	●	354	●
34.5	190	339	MK 4	0.39	-	-	356	●
35	190	339	MK 4	0.39	359	●	359	●
35.5	190	339	MK 4	0.4	-	-	361	●
36	195	344	MK 4	0.4	363	●	363	●
36.5	195	344	MK 4	0.4	-	-	365	●
37	195	344	MK 4	0.4	-	-	368	●
37.5	195	344	MK 4	0.4	369	●	370	●
38	200	349	MK 4	0.41	372	●	372	●
38.5	200	349	MK 4	0.41	-	-	374	●
39	200	349	MK 4	0.41	376	●	376	●
39.5	200	349	MK 4	0.41	378	●	378	●
40	200	349	MK 4	0.41	380	●	380	●
41	205	354	MK 4	0.42	-	-	385	●
42	205	354	MK 4	0.42	389	●	389	●
43	210	359	MK 4	0.43	394	●	394	●
44	210	359	MK 4	0.43	-	-	398	●
45	210	359	MK 4	0.44	403	●	403	●
46	215	364	MK 4	0.44	-	-	407	●
47	215	364	MK 4	0.44	-	-	412	●
48	220	369	MK 4	0.45	413	●	416	●
49	220	369	MK 4	0.45	-	-	421	●
50	220	369	MK 4	0.46	425	●	425	●
52	230	417	MK 5	0.48	430	●	-	-
54	230	417	MK 5	0.48	442	●	-	-
55	230	417	MK 5	0.48	444	●	444	●
60	235	460	MK 5	0.5	460	●	460	●
65	235	460	MK 5	0.5	471	●	-	-

ATORN® = Prod. Gr. 1AA
ORION = Prod. Gr. 1AP

ATORN® Twist drill, type VA HSSE 5xD, uncoated (DIN 345)

For use in stainless steel and special alloys



Application:
For use in stainless steel, special alloys up to a strength of 1300 N/mm².

Advantage:
- Special geometry with aggressive cutter design and free geometry for very smooth cutting

Execution:
- twist drill with stainless steel profile

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11074	30	20	10	10	20	50	70	70	45	40	30			20	10	10	10		

				Cutting material	HSSE
				Surface	Uncoated
mm	mm	mm		f steel 700 ● (mm/U)	11074... Ident. No.	
11	94	175	MK 1	0.23	117	●
11.5	94	175	MK 1	0.24	124	●
12	101	182	MK 1	0.24	132	●
12.5	101	182	MK 1	0.25	138	●
13	101	182	MK 1	0.25	144	●
13.5	108	189	MK 1	0.26	151	●
14	108	189	MK 1	0.26	158	●
14.5	114	212	MK 2	0.27	165	●
15	114	212	MK 2	0.27	172	●
15.5	120	218	MK 2	0.28	180	●
16	120	218	MK 2	0.28	187	●
16.5	125	223	MK 2	0.28	194	●
17	125	223	MK 2	0.29	201	●

				Cutting material	HSSE
				Surface	Uncoated
mm	mm	mm		f steel 700 ● (mm/U)	11074... Ident. No.	
17.5	130	228	MK 2	0.29	209	●
18	130	228	MK 2	0.3	216	●
18.5	135	233	MK 2	0.3	223	●
19	135	233	MK 2	0.3	230	●
19.5	140	238	MK 2	0.31	238	●
20	140	238	MK 2	0.31	245	●
20.5	145	243	MK 2	0.32	252	●
21	145	243	MK 2	0.32	259	●
21.5	150	248	MK 2	0.32	267	●
22	150	248	MK 2	0.33	274	●
22.5	155	253	MK 2	0.33	281	●
23	155	253	MK 2	0.33	288	●

Prod. Gr. 112

ATORN® Twist drill, type N HSS 10xD-20xD, steam-treated (DIN 345)

for universal use up to 1000 N/mm²



Application:
Standard geometry for universal use up to 1000 N/mm².

Advantage:
- excellent all-round properties and precise cutting pattern
- universal use: minimises tool costs and improves flexibility
- Steam treatment ensures favourable adherence of coolant

Execution:
- Twist drill with universal standard geometry

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11084	22	14				40	50	45	30	30	20	10		20	5				

				Cutting material	HSS
				Surface	Vaporised
mm	mm	mm		f steel 700 ● (mm/U)	11084... Ident. No.	
14	142	223	MK 1	0.26	140	●
14	220	325	MK 1	0.26	141	●
14	275	410	MK 1	0.26	142	●
15	147	245	MK 2	0.27	150	●
15	220	340	MK 2	0.27	151	●
15	275	425	MK 2	0.27	152	●
16	153	251	MK 2	0.28	160	●
16	230	355	MK 2	0.28	161	●
16	295	445	MK 2	0.28	162	●
17	159	257	MK 2	0.29	170	●
17	230	355	MK 2	0.29	171	●
18	165	263	MK 2	0.3	180	●

				Cutting material	HSS
				Surface	Vaporised
mm	mm	mm		f steel 700 ● (mm/U)	11084... Ident. No.	
18	245	370	MK 2	0.3	181	●
18	310	465	MK 2	0.3	182	●
20	177	275	MK 2	0.31	200	●
20	260	385	MK 2	0.31	201	●
21	184	282	MK 2	0.32	210	●
21	260	385	MK 2	0.32	211	●
22	270	405	MK 2	0.33	221	●
24	206	327	MK 3	0.34	240	●
24	290	440	MK 3	0.34	241	●
25	206	327	MK 3	0.35	250	●
25	290	440	MK 3	0.35	251	●
25	365	555	MK 3	0.35	252	●

Prod. Gr. 112

ATORN® Twist drill, type TLP HSS 10xD-20xD, uncoated (DIN 345)

For universal use up to 1300 N/mm² in long-chipping materials





Application:
Geometry with deep-hole profile for application up to a strength of 1000 N/mm².

Execution:
- Twist drill with deep-hole profile

Advantage:
- Deep-hole profile for optimised chip removal at greater drilling depths without venting
- effective removal of chips thanks to large chipping spaces

Notes:
chamfer nitrated < Ø16; steam treated > Ø16

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11085	30	20				40	60	45	35	40	30	20	10	20					

Cutting material				Surface	HSS Uncoated	
mm	mm	mm		f steel 1000 ● (mm/U)	11085... Ident. No.	
8	100	181	MK 1	0.15	080	●
8	165	265	MK 1	0.15	081	●
8	210	330	MK 1	0.15	082	●
8	420	500	MK 1	0.15	083	●
9	107	188	MK 1	0.16	090	●
9	175	275	MK 1	0.16	091	●
9	220	345	MK 1	0.16	092	●
9	420	500	MK 1	0.16	093	●
10	116	197	MK 1	0.16	100	●
10	185	285	MK 1	0.16	101	●
10	235	360	MK 1	0.16	102	●
10	420	500	MK 1	0.16	103	●
11	125	206	MK 1	0.17	110	●
11	195	300	MK 1	0.17	111	●
11	420	500	MK 1	0.17	113	●
12	134	215	MK 1	0.18	120	●
12	205	310	MK 1	0.18	121	●
12	260	395	MK 1	0.18	122	●
12	420	500	MK 1	0.18	123	●
13	134	215	MK 1	0.18	130	●
13	205	310	MK 1	0.18	131	●
13	260	395	MK 1	0.18	132	●
14	142	223	MK 1	0.19	140	●
14	220	325	MK 1	0.19	141	●
14	275	410	MK 1	0.19	142	●
14	420	500	MK 1	0.19	143	●
14	500	600	MK 1	0.19	144	●
14	650	750	MK 1	0.19	145	●
15	147	245	MK 2	0.19	150	●
15	220	340	MK 2	0.19	151	●
15	275	425	MK 2	0.19	152	●

Cutting material				Surface	HSS Uncoated	
mm	mm	mm		f steel 1000 ● (mm/U)	11085... Ident. No.	
15	500	600	MK 2	0.19	154	●
15	650	750	MK 2	0.19	155	●
15	850	1000	MK 2	0.19	156	●
16	153	251	MK 2	0.2	160	●
16	230	355	MK 2	0.2	161	●
16	295	445	MK 2	0.2	162	●
16	400	500	MK 2	0.2	163	●
16	500	600	MK 2	0.2	164	●
17	159	257	MK 2	0.21	170	●
17	230	355	MK 2	0.21	171	●
18	165	263	MK 2	0.21	180	●
18	245	370	MK 2	0.21	181	●
18	310	465	MK 2	0.21	182	●
18	400	500	MK 2	0.21	183	●
18	500	600	MK 2	0.21	184	●
18	650	750	MK 2	0.21	185	●
20	177	275	MK 2	0.22	200	●
20	260	385	MK 2	0.22	201	●
20	325	490	MK 2	0.22	202	●
20	400	500	MK 2	0.22	203	●
20	500	600	MK 2	0.22	204	●
21	184	282	MK 2	0.23	210	●
21	260	385	MK 2	0.23	211	●
21	500	600	MK 2	0.23	214	●
22	270	405	MK 2	0.23	221	●
22	500	600	MK 2	0.23	224	●
24	290	440	MK 3	0.24	241	●
24	475	600	MK 3	0.24	244	●
25	206	327	MK 3	0.25	250	●
25	475	600	MK 3	0.25	254	●

Prod. Gr. 112

Stepped drill bit for thread cutting (core hole and counterbore)



Application:
series and single-part production on conventional and CNC machines.

advantage:
- high profitability as core hole and 90°counterbore produced in single work step
- precise alignment of drill diameter and counterbore diameter

ATORN® Stepped drill bit, short, type N solid carbide/TiAlN, 90°

for thread core hole with countersink

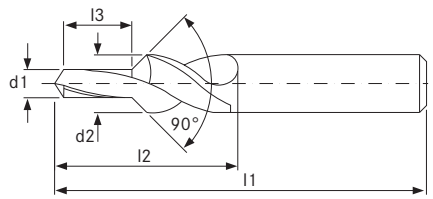
VHM | TiAlN | Typ N | 140° | HA



Application:
Countersink and thread core holes are manufactured in one machining step. Sturdy short design in particular for using in NC machines and automatic machines.

Execution:
- Heavy-duty stepped drill bit with universal precision grinding

Advantage:
- precise alignment of drill diameter and countersink diameter, lower process costs
- universal use, therefore tool costs are reduced to a minimum and user flexibility is increased



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11134	70	60	40	35	25	170	200	180	120	140	110			100	30				

Suitable for screw thread	d1 (mm)	d2 (mm)	l3 (mm)	l2 (mm)	l1 (mm)	Shaft Ø (mm)	f steel 1300 ● (mm/U)	11134... Ident. No.	
M3	2.5	6.0	8.8	28	66	6	0.05	030	●
M4	3.3	6.0	11.4	28	66	6	0.06	040	●
M5	4.2	6.0	13.6	28	66	6	0.09	050	●
M6	5	8.0	16.5	41	79	8	0.11	060	●
M8	6.8	10	21	47	89	10	0.14	080	●
M10	8.5	12	25.5	55	102	12	0.15	100	●
M12	10.2	14	30	60	107	14	0.16	120	●

Prod. Gr. 113

ATORN® Stepped drill bit, short, type N HSSE

For thread core hole with countersink

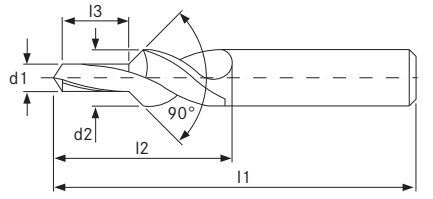
HSSE | Typ N | 118° | HA



Application:
Countersink and thread core holes are manufactured in one machining step. Sturdy short design in particular for using in NC machines and automatic machines.

Execution:
- profile-ground

Advantage:
- precise alignment of drill diameter and countersink diameter, lower process costs
- Special geometry for outstanding centring and positional accuracy



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11117	35	25	10	10	8	40	50	40	35	20	15			20	10				

Suitable for screw thread	d1 (mm)	d2 (mm)	l3 (mm)	l2 (mm)	l1 (mm)	Shaft Ø (mm)	f steel 1000 ● (mm/U)	11117... Ident. No.	
M3	2.5	3.4	8	15	52	3.4	0.04	003	●
M4	3.3	4.5	11	19	58	4.5	0.05	004	●
M5	4.2	5.5	13	23	66	5.5	0.07	005	●
M6	5	6.6	16	27	70	6.6	0.08	006	●
M8	6.8	9	20	35	84	9	0.1	008	●
M10	8.5	11	24	44	95	11	0.12	010	●
M12	10.2	14	29	49	107	14	0.14	012	●

Prod. Gr. 112

ATORN® HSSE stepped drill bit short type N, fine quality grade

For 90° countersunk screws

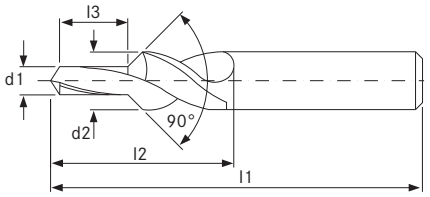




Application:
For through holes in accordance with DIN/ISO 273 and countersinking in accordance with DIN 74 for countersunk screws in accordance with ISO 2009-2010 and DIN 963-964. Sturdy short design in particular for using in NC machines and automatic machines.

Execution:
- profile-ground

Advantage:
- precise alignment of drill diameter and countersink diameter, lower process costs
- Special geometry for outstanding centring and positional accuracy



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11119	35	25	10	10	8	40	50	40	35	20	15			20	10				

Suitable for screw thread	d1 (mm)	d2 (mm)	l3 (mm)	l2 (mm)	l1 (mm)	Shaft Ø (mm)	f steel 1000 ● (mm/U)	11119... Ident. No.	
M2	2.2	4.6	6	11	45	4.6	0.04	002	●
M3	3.2	6.5	9	15	45	6.5	0.05	003	●
M4	4.3	8.6	11	19	50	8.6	0.07	004	●
M5	5.3	10.4	13	23	55	10.4	0.08	005	●
M6	6.4	12.4	15	27	63	12.4	0.1	006	●
M8	8.4	16.4	19	35	100	12.5	0.12	008	●
M10	10.5	20.4	23	44	110	12.5	0.14	010	●

Prod. Gr. 112

ATORN® Solid carbide TiAlN stepped drill bit short type N

For 180° cylinder head screws

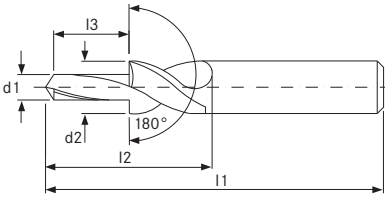




Application:
Drill diameter and countersink diameter are manufactured in one machining step. Sturdy short design in particular for using in NC machines and automatic machines.

Execution:
- Heavy-duty stepped drill bit with universal precision grinding

Advantage:
- precise alignment of drill diameter and countersink diameter, lower process costs
- universal use, therefore tool costs are reduced to a minimum and user flexibility is increased
- Hole and countersink are manufactured in one machining step



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11135	70	60	40	35	25	170	200	180	120	140	110			100	30				

Suitable for screw thread	d1 (mm)	d2 (mm)	l3 (mm)	l2 (mm)	l1 (mm)	Shaft Ø (mm)	f steel 1300 ● (mm/U)	11135... Ident. No.	
M3	3.4	6	9	28	64	6	0.05	030	●
M4	4.5	8	11	37	79	8	0.06	040	●
M5	5.5	10	13	43	89	10	0.09	050	●
M6	6.6	11	15	55	102	12	0.11	060	●
M8	9	15	19	60	115	16	0.14	080	●
M10	11	18	23	62	123	18	0.15	100	●

Prod. Gr. 113

ATORN® HSSE step drills type N, medium quality grade

For 180° cylinder head screws

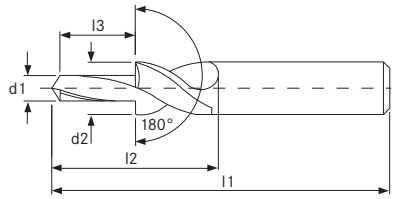
HSSE | Typ N | 118° | HA



Application:
According to DIN/ISO 273 and countersinking according to DIN 74, for cylinder head screws according to DIN 912, 6912, 7984 and ISO 1207. Hole and countersink produced in one machining step.

Execution:
- profile-ground

Advantage:
- precise alignment of drill diameter and countersink diameter, lower process costs
- Special geometry for outstanding centring and positional accuracy



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11118	35	25	10	10	8	40	50	40	35	20	15			20	10				

Suitable for screw thread	d1 (mm)	d2 (mm)	l3 (mm)	l2 (mm)	l1 (mm)	Shaft Ø (mm)	f steel 1000 ● (mm/U)	11118... Ident. No.	
M3	3.4	6	9	15	45	6	0.04	003	●
M4	4.5	8	11	19	50	8	0.05	004	●
M5	5.5	10	13	23	55	10	0.07	005	●
M6	6.6	11	15	26	63	11	0.08	006	●
M8	9	15	19	34	100	12.5	0.1	008	●
M10	11	18	23	41	110	12.5	0.12	010	●
M12	14	20	28	46	110	12.5	0.14	012	●

Prod. Gr. 112

ATORN® HSS stepped drill bit short type N

For core hole centrings

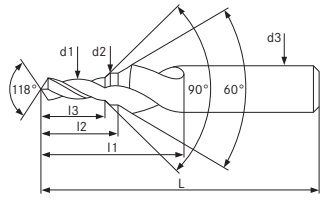
HSS | Typ N | 118° | HA | HB



Application:
Drilling of thread core holes in accordance with DIN 332-2, form D/DR. Simultaneous, precisely aligned insertion of centre hole, inlet for screw tap and thread core hole.

Execution:
- profile-ground

Advantage:
- precise alignment of drill diameter and countersink diameter, lower process costs
- universal use, therefore tool costs are reduced to a minimum and user flexibility is increased



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11121	30	20				40	50	40	35	20	15			20					
11122	30	20				40	50	40	35	20	15			20					

								Tool holding device	HA parallel shank		HB parallel shank	
Suitable for screw thread	d1 (mm)	d2 (mm)	l3 (mm)	l1 (mm)	l2 (mm)	L (mm)	d3 (mm)	f steel 700 ● (mm/U)	11121... Ident. No.		11122... Ident. No.	
M4	3.3	4.3	11	23	12.6	63	8	0.04	004	●	004	●
M5	4.2	5.3	13	27	15.1	67	10	0.05	005	●	005	●
M6	5	6.4	16	33	18.9	71	12.5	0.07	006	●	006	●
M8	6.8	8.4	19	41	23	88	14	0.08	008	●	008	●
M10	8.5	10.5	23	47	27.7	90	16	0.1	010	●	010	●
M12	10.2	13	28	59	34.5	105	22	0.12	012	●	012	●
M16	14	17	35	67	41.3	132	25	0.16	-	-	016	●
M20	17.5	21	38	77	48.3	145	31.5	0.18	-	-	020	●

Prod. Gr. 112

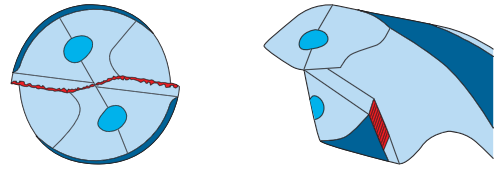
troubleshooting for solid carbide/HSSE drills

flank wear

flank wear is the preferred type of wear, if it is even.

problem
- cutting speed too high
- oil content in coolant too low
- cooling inadequate
- concentricity error

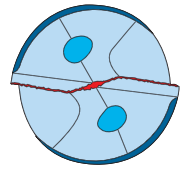
counter-measures
- reduce cutting speed
- increase oil content in coolant
- increase coolant quantity
- check concentricity



flank wear on chisel edge

problem
- cutting speed too low
- feed rate too high
- concentricity error

counter-measure
- reduce cutting speed
- reduce feed rate
- check concentricity



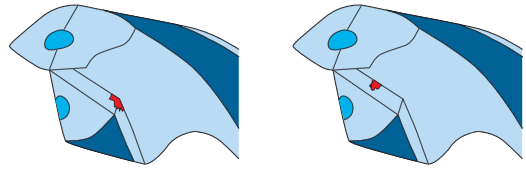
the hole quality decreases, since the self-centring capability is no longer guaranteed.

chipping

chipping occurs mainly when machining pre-drilled holes, when the tip angle of the pilot hole is smaller.

problem
- tip angles do not match each other
- unstable conditions
- concentricity error
- cooling inadequate

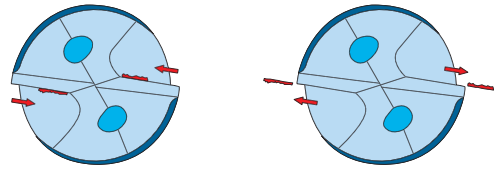
counter-measure
- check tip angles
- check clamping
- check concentricity
- increase cooling



built-up edges

problem
- cutting speed too high/too low
- oil content in coolant too low

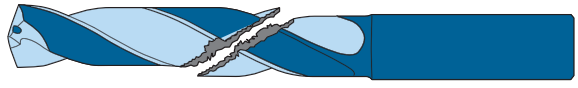
counter-measure
- increase cutting speed so that the build-up edge moves to the middle
- reduce cutting speed so that the built-up edge moves to the exterior or is avoided
- increase oil content in coolant



drill breakage

problem
- cutting speed too low
- unstable conditions
- concentricity error
- feed rate too high
- chips building up

counter-measure
- increase cutting speed
- check clamping
- check concentricity
- reduce feed rate
- increase cooling



ATORN range of countersink indexable inserts for standard plates CC..06, CC..09 and CC..12
in drilling depths 3xD-7xD

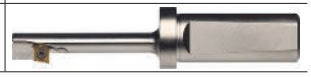
application:
- broad countersinks program for use with ISO indexable inserts with CC.. form
- adjustable single-edge cutter/dual-edge cutter and reverse machining

advantage:
- broad countersink range
- large diameter range can be covered
- standard indexable inserts can be used
- minimises tool costs through flexible use
- high-quality backing material







11233100-140	Indexable inserts, fine-boring rod, single tooth cutter, adjustable for universal use up to 1300 N/mm² with CC..06 and CC..09..	
11240	Indexable insert countersink, single tooth cutter for universal use up to 1300 N/mm² with CC..06 and CC..09..	
11243	Indexable insert countersink, twin-blade for universal use up to 1300 N/mm² with CC..06 and CC..09..	
11251	Reversible tips for reverse boring bar, single-bladed cutter for universal use up to 1300 N/mm² with CC..06, CC..09 and CC..12..	

ATORN range of countersink indexable inserts for standard plates CC..06, CC..09 and CC..12
in drilling depths 3xD-7xD

application:
- broad countersinks program for use with ISO indexable inserts with CC.. form
- adjustable single-edge cutter/dual-edge cutter and reverse machining

advantage:
- broad countersink range
- large diameter range can be covered
- standard indexable inserts can be used
- minimises tool costs through flexible use
- high-quality backing material



ATORN® Reversible tip fine boring rod, single tooth cutter, adjustable
For universal application up to 1300 N/mm² with CC..06 and CC..09 Indexable inserts

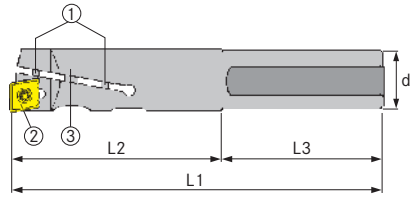
Z 1 | HB



Application:
boring and drill out with CC.. indexable inserts in the diameter range from 10.00–50.00 mm in the material groups steel, stainless steel, non-ferrous metals, cast materials and special alloys.

Execution:
- Support material made from high-grade steel with adjusting range and clamping surface in line with DIN 18535B

Advantage:
- low cost boring and reaming tool with large adjustment range
- standard CC.. indexable inserts can be used, thereby optimising procurement and minimising tool costs
- nickel-plated tool for high corrosion-resistance



① Adjusting screws
② Indexable insert screw
③ Locking screw

						Reversible tip fine boring rod, single tooth cutter, adjustable		Clamping screw for indexable inserts		indexable inserts, fine-boring rod, adjusting screws under tension		Wendeplatten Feinbohrstange Einstellschraube Druck	
Min./max. cutting edge Ø	L2 (mm)	L3 (mm)	L1 (mm)	d (mm)	Suitable for indexable inserts	11233... Ident. No.		16108... Ident. No.		16108... Ident. No.		16108... Ident. No.	
10-12 mm	30	70	100	10	CC..06	100	●	225	●	601	●	611	●
12-15 mm	30	70	105	12	CC..06	105	●	225	●	602	●	612	●
15-20 mm	50	60	110	16	CC..06	110	●	225	●	603	●	613	●
20-25 mm	60	60	120	20	CC..06	115	●	225	●	604	●	614	●
25-30 mm	70	70	140	25	CC..09	120	●	240	●	605	●	615	●
30-35 mm	90	70	160	25	CC..09	125	●	240	●	606	●	616	●
35-40 mm	100	70	170	32	CC..09	130	●	240	●	607	●	617	●
40-45 mm	120	70	190	32	CC..09	135	●	240	●	608	●	618	●
45-50 mm	150	70	220	32	CC..09	140	●	240	●	609	●	619	●

Prod. Gr. 142

ATORN® Indexable insert countersink, single tooth cutter

For universal use up to 1300 N/mm² with CC..06 and CC..09 indexable inserts

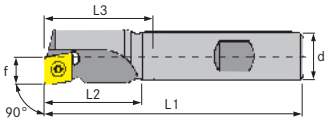
Z 1 | HB

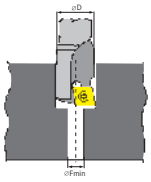
Application:
180° countersinks with CC.. indexable inserts in the diameter range from 10.00–33.00 mm, in the material groups steel, stainless steel, non-ferrous metals, cast materials and special alloys for use in single part and series production.

Execution:
- backing material made from high-grade steel with clamping surface in line with DIN 1835B

Advantage:
- precisely fitting inserts ensure optimum machining results even under difficult conditions
- universal use in all material groups
- cost-efficient tool in comparison with mono-block solutions







D (mm)	L2 (mm)	L1 (mm)	F min (mm)	d (mm)	Suitable for indexable inserts	Indexable insert countersink, single tooth cutter 11240... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
10	15	85	4	12	CC..06	400	●	225	●
11	15	85	4	12	CC..06	410	●	225	●
12	18	85	4	12	CC..06	420	●	225	●
13	23	85	4	12	CC..06	430	○	225	●
14	23	85	5	12	CC..06	440	●	225	●
15	30	85	5	12	CC..06	450	●	225	●
16	30	85	5	12	CC..06	460	●	225	●
17	30	95	6	16	CC..09	470	●	240	●
18	40	95	6	16	CC..09	480	●	240	●
19	40	95	6	16	CC..09	490	○	240	●
20	40	95	5	16	CC..09	500	●	240	●
21	42	95	5	16	CC..09	510	●	240	●
22	42	95	6	16	CC..09	520	●	240	●
23	42	95	6	16	CC..09	530	●	240	●
24	42	95	6	16	CC..09	540	○	240	●
25	42	95	8	16	CC..09	550	●	240	●
26	56	120	8	20	CC..09	560	●	240	●
27	56	120	8	20	CC..09	570	○	240	●
28	56	120	10	20	CC..09	580	●	240	●
29	56	120	10	20	CC..09	590	○	240	●
30	56	120	10	20	CC..09	600	○	240	●
31	56	120	12	20	CC..09	610	○	240	●
32	56	120	12	20	CC..09	620	○	240	●
33	56	120	12	20	CC..09	630	●	240	●

Prod. Gr. 142

ATORN® Indexable insert countersink, dual cutter

For universal application up to 1300 N/mm², with CC..06 and CC09.. Indexable inserts

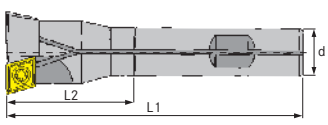
Z 2 | IK | HB

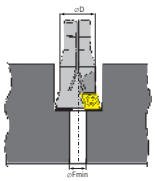
Application:
180° countersinks with CC.. indexable inserts in the diameter range from 10.00–33.00 mm, in the material groups steel, stainless steel, non-ferrous metals, cast materials and special alloys for use in single part and series production.

Execution:
- backing material made from high-grade steel with clamping surface in line with DIN 1835B

Advantage:
- precision-engineered insert seat and two blades ensure optimum machining results and smooth running even under difficult operating conditions
- universal use in all material groups
- cost-efficient tool in comparison with mono-block solutions







Cutting edge Ø (mm)	L2 (mm)	L1 (mm)	F min (mm)	d (mm)	Suitable for indexable inserts	Indexable insert countersink, dual cutter 11243... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
16	30	92	5	12	CC..06	160	●	225	●
17	32	94	6	16	CC..06	170	●	225	●
18	41	97	7	16	CC..06	180	●	225	●
19	41	100	8	16	CC..06	190	●	225	●
20	41	102	9	16	CC..06	200	●	225	●
21	41	105	10	16	CC..06	210	●	225	●
22	41	110	11	16	CC..06	220	○	225	●
23	41	112	12	16	CC..06	230	●	225	●
24	41	115	13	16	CC..06	240	●	225	●
25	40	120	8	16	CC..09	250	●	240	●
26	55	125	9	20	CC..09	260	●	240	●
27	55	128	10	20	CC..09	270	○	240	●
28	55	130	11	20	CC..09	280	○	240	●
29	55	132	12	20	CC..09	290	●	240	●
30	55	134	13	20	CC..09	300	●	240	●
31	55	136	14	20	CC..09	310	○	240	●
32	55	138	15	20	CC..09	320	●	240	●
33	55	140	16	20	CC..09	330	●	240	●
34	60	140	16	25	CC..09	340	●	240	●
35	60	140	17	25	CC..09	350	●	240	●
36	60	140	18	25	CC..09	360	●	240	●
37	60	140	19	25	CC..09	370	●	240	●
38	60	140	20	25	CC..09	380	○	240	●
39	60	140	21	25	CC..09	390	●	240	●
40	60	140	22	25	CC..09	400	●	240	●
41	60	140	23	25	CC..09	410	○	240	●
42	60	140	24	25	CC..09	420	○	240	●

Prod. Gr. 142

ATORN® Reversible tip reverse boring bar, single tooth cutter

For universal use up to 1300 N/mm² with CC..06 and CC09 and CC12 indexable inserts

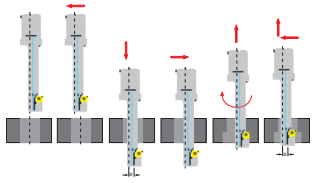
Z 1 | IK | HE

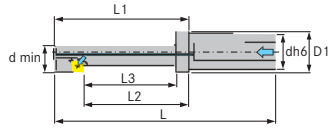
Application:
180° reverse counterboring with CC.. indexable inserts in the diameter range from 18.00–76.00 mm, in the material groups steel, stainless steel, non-ferrous metals, cast materials and special alloys for use in single part and series production.

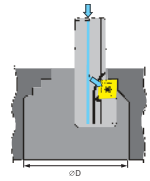
Execution:
- backing material made from high-grade steel with clamping surface as per DIN 1835E

Advantage:
- standard CC.. indexable inserts can be used, thereby optimising procurement and minimising tool costs
- precisely fitting inserts ensure optimum machining results even under difficult conditions
- nickel-plated tool for high corrosion-resistance









Counter-sink Ø (mm)	d min. (mm)	L (mm)	L1 (mm)	L2 (mm)	L3 (mm)	d (mm)	D1 (mm)	e (mm)	Suitable for indexable inserts	Reversible tip reverse boring bar, single tooth cutter 11251... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
18	10.5	112	62	47	40	20	25	4	CC..06	180	●	225	●
20	13	117	67	52	45	20	25	3.75	CC..06	200	●	225	●
24	15	122	72	57	50	20	25	4.75	CC..06	240	●	225	●
26	17	132	82	67	60	20	25	5	CC..06	260	●	225	●
30	19	142	92	77	65	20	25	6	CC..06	300	●	225	●
33	21	152	102	82	75	20	25	6.5	CC..09	330	●	240	●
36	23	173	113	93	85	32	25	7	CC..09	360	●	240	●
40	25	183	123	103	95	32	40	8	CC..09	400	●	240	●
43	30	183	123	103	95	32	40	7	CC..09	430	○	240	●
48	33	223	163	143	135	32	40	8	CC..09	480	●	240	●
53	36	210	140	-	110	40	-	9	CC..12	530	○	130	●
57	39	220	150	-	120	40	-	9.5	CC..12	570	○	130	●
66	45	245	165	-	135	50	-	11	CC..12	660	○	130	●
78	52	265	185	-	155	50	-	12.5	CC..12	760	○	130	●

Prod. Gr. 142

ATORN® XCNT indexable insert

For reversible tip countersink no. 11242



Surface	Coated		Coated		Coated	
Carbide type	HC P25-40		HC M30-40		HC K10-25	
ISO name	11262... Ident. No.		11262... Ident. No.		11262... Ident. No.	
XCNT 040104	041	●	042	●	043	○
XCNT 050204	051	●	052	●	053	●
XCNT 060204	061	●	062	●	063	○
XCNT 070304	071	●	072	●	073	●
XCNT 080304	081	●	082	●	083	●
XCNT 09T304	091	●	092	○	093	○
XCNT 10T304	101	●	102	●	103	●
XCNT 130404	131	●	132	●	133	●

Prod. Gr. 144

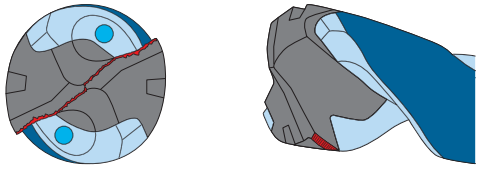
troubleshooting indexable insert drilling

wear to open space

wear to open space is the preferred type of wear, if it is even.

problem
- cutting speed too high
- oil content in coolant too low
- too little cooling
- concentricity error

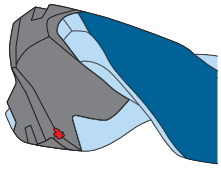
countermeasures
- lower cutting speed
- increase oil content in coolant
- increase coolant quantity
- check concentricity



plastic deformation

problem
- cutting speed too high
- feed rate too high
- too little cooling

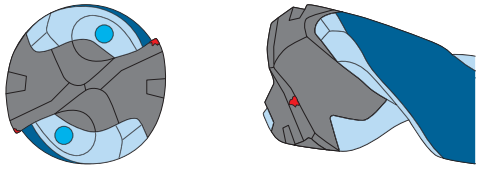
countermeasure
- reduce cutting speed
- reduce feed rate
- increase cooling



breakouts

problem
- tip angles do not match
- unstable conditions
- concentricity error
- feed rate too high
- too little cooling

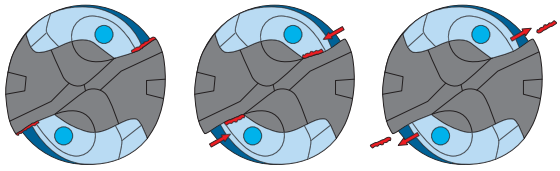
countermeasure
- check tip angle
- check clamping
- check concentricity
- reduce feed rate
- increase cooling



built-up edge

problem
- cutting speed too high/too low
- oil content of coolant too low

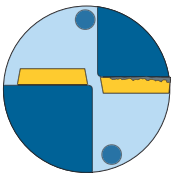
countermeasure
- increase cutting speed so that the built-up edge moves to the centre
- decrease cutting speed so that the built-up edge moves to the outer edge or is avoided
- increase coolant oil content



troubleshooting indexable insert drilling

rapid wear of the peripheral cutting edge

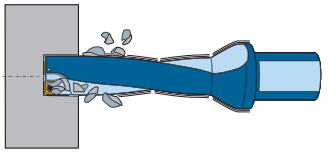
wear to open space is the preferred type of wear, if it is even.



problem
- cutting speed too high
- too little cooling
- wrong cemented carbide type

countermeasures
- reduce cutting speed
- increase cooling
- select a more wear-resistant cemented carbide type

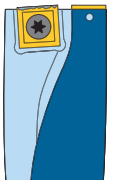
vibrations on the tool body



problem
- cutting speed too high
- feed rate too high
- too little cooling

countermeasure
- reduce cutting speed
- reduce feed rate
- increase cooling

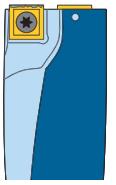
rapid wear of the inner cutting edge



problem
- uneven workpiece surface
- unstable tool/workpiece clamping conditions
- wrong cemented carbide type

countermeasure
- reduce feed rate by 50%
- check tool/workpiece clamping
- select a tougher grade of cemented carbide

rapid wear of the outer cutting edge



problem
- feed rate too high
- uneven workpiece surface
- wrong cemented carbide type
- wrong indexable insert geometry

countermeasure
- reduce feed rate
- reduce feed rate by 50%
- select a tougher grade of cemented carbide
- use an indexable insert geometry for higher feed rates

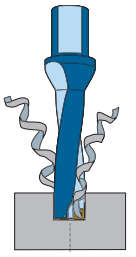
chips welding to the tool body



problem
- cutting speed too low (long-chipping)
- feed rate too high (long-chipping)
- feed rate too low
- too little cooling

countermeasure
- increase cutting speed (long-chipping)
- reduce feed rate (long-chipping)
- increase feed rate
- increase cooling

long continuous chips are produced



problem
- cutting speed too low (long-chipping)
- feed rate too high (long-chipping)
- feed rate too low
- incorrect indexable insert geometry

countermeasure
- increase cutting speed (long-chipping)
- reduce feed rate (long-chipping)
- increase feed rate
- use an indexable insert geometry for lower feed rates

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

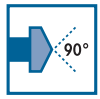


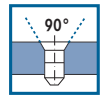
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

conical countersink 90° solid carbide

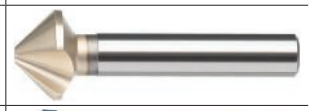
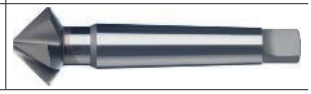
application:
for 90° screw head countersinking or deburring holes.

advantage:
- very wide range
- many shaft designs and shapes
- very long service life through high-quality solid carbide cutting material



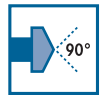
VHM

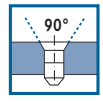
		P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H	H 65HRC	
11501705-724	Conical countersink, 90°, solid carbide, triple cutter, extremely uneven pitch For universal use up to 60 HRC	●	●	●	●	●	●	○	○	○	
11500230-285	Conical countersink 90° solid carbide, three-edge For universal use up to 1300 N/mm²	●	●	●	●	●	●	○			
11535	Conical countersink, 90°, solid carbide, multi-flute cutter For universal use up to 60 HRC	●	●	●	●	○	○	●	●	●	
11536	Conical countersink, 90°, solid carbide, multi-flute cutter For universal use up to 60 HRC	●	●	●	●	○	○	●	●	●	

conical countersink 90° HSS / HSSE

application:
for 90° screw head countersinking or deburring holes.

advantage:
- very wide range
- many cutting materials available
- many shaft designs and shapes

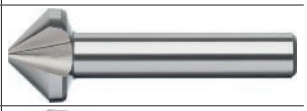
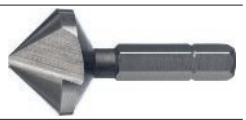
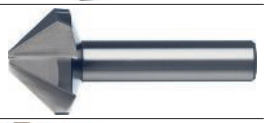





HSS

HSSE

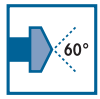
		P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H	H 65HRC	
11500006-138	Conical countersink 90° HSS, three-edge For universal use up to 1000 N/mm2	●	○	○		●	○				
11500601-648	Conical countersink 90° HSS-TiNAlOX, three-edge For universal use up to 1000 N/mm2	●	○	○	○	●	○		○		
11501006-138	90° conical countersink, HSS, triple cutter for universal use up to 1000 N/mm2	●	○	○		●	○				
11501146-218	Conical countersink, 90°, HSSE-TiN, triple cutter for universal use up to 1000 N/mm2	●	○	○		●	○				
11501800-825	Conical countersink, 90°, HSSE-TiN, triple cutter for universal use up to 1000 N/mm2	●	○	○		●	○				
11501826-853	Conical countersink, 90°, HSS TiALN, triple-edge cutter For universal use up to 1000 N/mm2	●	○	○		●	○				
11501637-661	Conical countersink, 90°, HSS, triple cutter, extremely uneven pitch for universal use up to 1000 N/mm²	●	●	●	○	○	●		○		

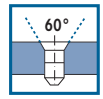
		P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H	H 65HRC	
11500698-750	90° conical countersink, HSSE, triple cutter for universal use up to 1300 N/mm²	●	●	○	●	●	○	○			
11501506-561	90° conical countersink HSS triple cutter with 3-edge shank for universal use up to 1000 N/mm²	●	○	○		●	○				
11501300-455	90° conical countersink, HSS, triple cutter, extra-long for universal use up to 1000 N/mm2	●	○	○		○	○				
11492	Conical countersink, 90°, HSS, with bit holder For universal use up to 1000 N/mm²	●	●	○		●	○				
11531	Conical countersink, 90°, HSSE, multi-flute cutter For universal use up to 1300 N/mm²	●	●	●	●	○	○	●			
11516010-050	Conical countersink, 90°, HSSE-TiN, single-bladed cutter for universal use up to 1300 N/mm2	●	●	○	○	●	○				
11515210-230	Conical countersink, 90°, HSSE, extra-long single flute cutter For universal use up to 1300 N/mm²	●	●	○	○	●	○				

conical countersink 60° solid carbide

application:
for 60° screw head countersinking or deburring holes.

advantage:
- very wide range
- many shaft designs and shapes
- very long service life through high-quality solid carbide cutting material



VHM

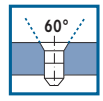
		P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H	H 65HRC	
11498308-325	Conical countersink 60° solid carbide, three-edge For universal use up to 1300 N/mm²	●	●	●	●	●	●	○			
11498226-263	60° conical countersink, HSS, triple cutter for universal use up to 1000 N/mm²	●	●	○		●	●				

conical countersink 60° HSS / HSSE

application:
for 60° screw head countersinking or deburring holes.

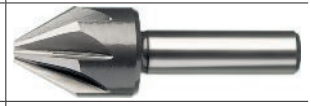
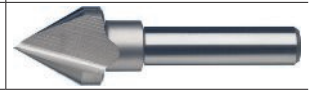
advantage:
- very wide range
- many cutting materials available
- many shaft designs and shapes



HSS

HSSE

		P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H	H 65HRC	
11498206-225	Conical countersink 60° HSS-TiN, three-edge For universal use up to 1000 N/mm2	●	○	○		●	○				
11495308-320	Conical countersink, 60°, HSS, multi-flute cutter For universal use up to 1000 N/mm²	●	○	○		○	○				
11495330-360	Conical countersink, 60°, HSS, multi-flute cutter For universal use up to 1000 N/mm²	●	○	○		○	○				
11498226-263	60° conical countersink, HSS, triple cutter for universal use up to 1000 N/mm²	●	●	○		●	●				
11497405-430	Conical countersink, 60°, HSSE, single-bladed cutter For universal use up to 1300 N/mm²	●	●	○		●	○				

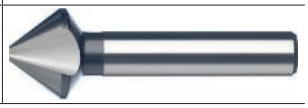
conical countersink HSS 75°

application:
for 75° screw head countersinking or deburring holes.








		P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H	H 65HRC	
11499008-025	Conical countersink 75° HSS, three-edge For universal use up to 1000 N/mm²	●	○	○		○	○				

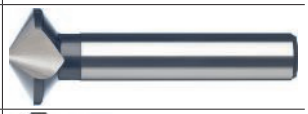
conical countersink HSS 120°

application:
for 120° screw head countersinking or deburring holes.





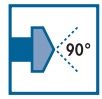


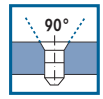

		P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H	H 65HRC	
11502106-126	120° conical countersink, HSS, triple cutter for universal use up to 1000 N/mm2	●	○	○		○	○				
11502231-250	Conical countersink 120° HSS, three-edge For universal use up to 1000 N/mm²	●	○	○		○	○				

conical countersink 90° solid carbide

application:
for 90° screw head countersinking or deburring holes.

advantage:
- very wide range
- many shaft designs and shapes
- very long service life through high-quality solid carbide cutting material





ATORN® SC 90° conical countersink, three flutes, extremely uneven pitch

For universal use up to 60 HRC





Application:
For producing 90° counterbores

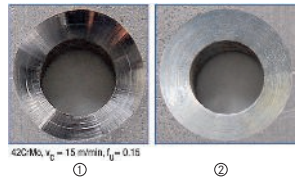
Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- Solid carbide cutting material for high service life requirements
- Uneven pitch ensures excellent surfaces without chatter marks and minimisation of cutting forces
- radial relief ensures optimum chip breaking





Argument no. 3:
Extremely variable pitch



Optimised sinking
① Standard countersink
② EUC speed

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11501705-724	60	50	40	30	30	60	80	70	70	70	70	70	25	45	15	20	15	12	8

mm	mm	mm	mm	Surface f steel 1300 ● (mm/U)	TiN/ZrN 11501... Ident. No.	
6.3	1.5	5	45	0.06	705	●
8.3	2	6	50	0.08	709	●
10.4	2.5	6	50	0.08	712	●
12.4	2.8	8	56	0.08	714	●
16.5	3.2	10	60	0.10	717	●
20.5	3.5	10	63	0.14	719	●
25	3.8	10	67	0.18	721	●
31	4.2	12	71	0.18	724	●

Prod. Gr. 114

ATORN® Solid carbide 90° conical countersink, three-flute cutter

for universal use up to 1300 N/mm²



Application:
For producing 90° counterbores up to 1300 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking
- solid carbide cutting material for high service life requirements

Notes:
Diameter 6-8.3 mm = solid carbide Diameter 10-31 mm = solid carbide head and steel shank



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11500230-285	60	45	20	20	15	80	150	120	100	80	60	60		40	20	20	20		

mm	mm	mm	mm	Surface f steel 1300 ● (mm/U)	Uncoated 11500... Ident. No.	
6	2.0	5	40	0.06	230	●
6.3	2.0	5	40	0.06	233	●
8	2	6	45	0.06	235	●
8.3	2	6	45	0.08	237	●
10	2.5	8	46	0.08	240	●
10.4	2.5	8	46	0.09	242	●
11.5	2.8	8	56	0.1	245	●
12.4	2.8	8	56	0.1	250	●
15	3.2	10	60	0.12	255	●
16.5	3.2	10	60	0.12	260	●
20.5	3.5	10	63	0.13	270	●
25	3.8	10	67	0.14	280	●
31	4.2	12	71	0.16	285	●

Prod. Gr. 114

ATORN® Conical countersink, 90°, solid carbide, multi-flute cutter

For universal use up to 63 HRC





Application:
For countersinking 90° in the material groups steel, stainless steel, (non-ferrous metals), (cast materials) and special alloys up to a strength of 63 HRC.

Execution:
- profile-ground multi-edge countersink with radial relief

Advantage:
- excellent service life characteristics in Hardox 400 and 500, Creusabro, Inconel, Nimonic, Hastelloy, Monel, manganese-hardened steel, hardened steels up to 60 HRC, titanium and titanium alloy materials
- innovative and patented cutter geometry with a large number of cutters ensures excellent cutting performance and good surface qualities

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11535	60	50	30	20	15	120	150	100	90	90	70			4	20	20	20	10	7

mm	mm	mm	mm	Number of cutting edges (PCS)	f steel 1300 ● (mm/U)	11535... Ident. No.	
10.4	4	46	8	4	0.04	104	●
12.4	4	56	8	5	0.05	124	●
16.5	4.5	60	10	5	0.06	165	●
20.5	5	63	10	5	0.08	205	●
25	5.5	67	10	5	0.09	250	●
31	6	71	12	5	0.1	310	●

Prod. Gr. 114

ATORN® Solid carbide 90° conical countersink, multi-flute cutter

For universal use up to 60 HRC



90° | HM | Z 5 | MK

Application:
For producing 90° counterbores up to 60 HRC.

Execution:
- profile-ground triple-edge countersink with patented grind

Advantage:
- excellent service life characteristics in Hardox 400 and 500, Creusabro, Inconel, Nimonic, Hastelloy, Monel, manganese-hardened steel, hardened steels up to 60 HRC, titanium and titanium alloy materials
- innovative and patented cutter geometry with a large number of cutters ensures excellent cutting performance and good surface qualities

mm	mm	mm		Number of cutting edges (PCS)	f steel 1300 ● (mm/U)	11536... Ident. No.	
31	6	108	MK 2	5	0.1	310	●
40	14	137	MK 3	5	0.12	400	●
50	18	147	MK 3	5	0.14	500	●

Prod. Gr. 114

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11536	60	50	30	20	15	120	150	100	90	90	70			4	20	20	20	10	7

conical countersink 90° HSS / HSSE

application:
for 90° screw head countersinking or deburring holes.

advantage:
- very wide range
- many cutting materials available
- many shaft designs and shapes



90° | 90° | HSS | HSSE

ATORN® ORION® HSS 90° conical countersinks (DIN 335)

For universal use

90° | HSS | TiNAlOX | TiN | TiAlN | Z 3 | HA

Application:
For producing 90° counterbores up to 1000 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking
- **No. 11500 601–11500 648:** TiNAlOX coating for increased service life requirements
- **No. 11501 826–11501 853:** TiAlN coating for increased service life requirements



No. 11500 006–11500 138, 11501 006–11501 138
HSS



No. 11500 601–11500 648
HSS TiNALOX



No. 11501 146–11501 825
HSS-TiN



No. 11501 826–11501 853

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11500006-138	30	20	10	8		40	70	60	50	40	30	30		15					
11500601-648	30	20	10	10	8	40	70	60	50	40	30	30		15	8			20	
11501006-138	30	20	10	8		40	70	60	50	40	30	30		15					
11501146-218	30	20	10	10		40	70	60	50	40	30	30		15	8				
11501800-825	30	20	10	8		40	70	60	50	40	30	30		15					
11501826-853	30	20	10	8		40	70	60	50	40	30	30		15					

					ATORN®				ORION®				ATORN®			
				Surface	Uncoated		TiNALOX		Uncoated		TiN		TiN		TiAlN	
mm	mm	mm	mm	f steel 700 ● (mm/U)	11500... Ident. No.		11500... Ident. No.		11501... Ident. No.		11501... Ident. No.		11501... Ident. No.		11501... Ident. No.	
4.3	1.3	4	40	0.06	006	●	601	●	006	●	146	●	800	●	826	●
5	1.5	4	40	0.07	011	●	602	●	011	●	151	●	801	●	827	●
5.3	1.5	4	40	0.07	013	●	604	●	013	●	153	●	802	●	828	●
5.8	1.5	5	45	0.08	016	●	606	●	016	●	155	●	803	●	829	●
6	1.5	5	45	0.08	021	●	608	●	021	●	157	●	804	●	830	●
6.3	1.5	5	45	0.08	026	●	611	●	026	●	161	●	805	●	831	●
7	1.8	6	50	0.09	031	●	612	●	031	●	163	●	806	●	832	●
7.3	1.8	6	50	0.09	036	●	614	●	036	●	165	●	807	●	833	●
8	2	6	50	0.1	041	●	616	●	041	●	167	●	808	●	834	●
8.3	2	6	50	0.1	046	●	618	●	046	●	171	●	809	●	835	●
9.4	2.2	6	50	0.11	048	●	621	●	048	●	173	●	810	●	836	●
10	2.5	6	50	0.12	051	●	622	●	051	●	168	●	811	●	837	●
10.4	2.5	6	50	0.12	056	●	624	●	056	●	177	●	812	●	838	●
11.5	2.8	8	56	0.13	061	●	626	●	061	●	179	●	813	●	839	●
12.4	2.8	8	56	0.13	071	●	628	●	071	●	181	●	814	●	841	●
13.4	2.9	8	56	0.13	076	●	631	●	076	●	186	●	815	●	842	●
15	3.2	10	60	0.14	081	●	632	●	081	●	191	●	816	●	843	●
16.5	3.2	10	60	0.14	096	●	634	●	096	●	196	●	817	●	844	●
19	3.5	10	63	0.15	101	●	636	●	101	●	198	●	818	●	846	●
20.5	3.5	10	63	0.16	114	●	638	●	114	●	201	●	819	●	847	●
23	3.8	10	67	0.17	121	●	640	●	121	●	206	●	820	●	848	●
25	3.8	10	67	0.18	131	●	642	●	131	●	211	●	821	●	849	●
28	4	12	71	0.19	132	●	644	●	136	●	216	●	822	●	851	●
30	4.2	12	71	0.2	136	●	646	●	137	●	217	●	823	●	852	●
31	4.2	12	71	0.21	138	●	648	●	138	●	218	●	824	●	853	●
40	10	12	75	0.25	-	-	-	-	-	-	-	-	825	●	-	-

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® ORION® HSS/HSSE 90° conical countersink sets (DIN 335)

For universal use

90° | HSS | HSSE | TiN | TiNAlOX | Z 3 | HA

Application:
Ident. No. 010–620: For producing 90° counterbores up to 1000 N/mm².
Ident. No. 700–720: For producing 90° counterbores up to 1300 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking
- **Ident. No. 480, 490, 500, 510, 520, 530:** TiN coating for increased service life requirements
- **Ident. No. 600–620:** TiNAlOX coating for increased requirements in service life



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11507010-061	30	20	10	8		40	70	60	50	40	30	30		15					
11507015-065	30	20	10	8		40	70	60	50	40	30	30		15					
11507480-530	30	20	10	8		40	70	60	50	40	30	30		15					
11507485-535	30	20	10	8		40	70	60	50	40	30	30		15					
11507700-720	30	20	10	8	6	40	70	60	50	40	30	30		15					

		ATORN®		ORION®		ATORN®		ORION®		ATORN®			
		Cutting material	HSS		HSS		HSS		HSS		HSS		HSSE
		Surface	Uncoated		Uncoated		TiN		TiN		TiNALOX		Uncoated
Composition of set	Number of pieces in assortment/set (PCS)		11507... Ident. No.		11507... Ident. No.		11507... Ident. No.		11507... Ident. No.		11507... Ident. No.		11507... Ident. No.	
8/10/11.5/15	4		010	●	015	●	480	●	485	●	-	-	-	-
10.4/16.5/20.5/25	4		020	●	025	●	490	●	495	●	-	-	-	-
6/8/10/11.5/15/19	6		031	●	035	●	500	●	505	●	600	●	700	●
6/8/10/11.5/15/19/25	7		041	●	045	●	510	●	515	●	-	-	-	-
6.3/8.3/10.4/12.4/16.5/20.5	6		051	●	055	●	520	●	525	●	620	●	720	●
6.3/8.3/10.4/12.4/16.5/20.5/25	7		061	●	065	●	530	●	535	●	-	-	-	-

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® ORION® HSS 90° conical countersink set (DIN 335)

For universal use

90° | HSS | TiN | TiNAlOX | Z 3 | HA

Application:
For producing 90° counterbores up to 1000 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking
- **Ident. No. 020:** TiN coating for increased requirements in service life
- **Ident. No. 030:** TiNAlOX coating for increased requirements in service life



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11512011	30	20	10	8		40	70	60	50	40	30	30		15					
11512015	30	20	10	8		40	70	60	50	40	30	30		15					
11512020	30	20	10	8		40	70	60	50	40	30	30		15					
11512025	30	20	10	8		40	70	60	50	40	30	30		15					
11512030	30	20	10	8		40	70	60	50	40	30	30		15					

		ATORN®		ORION®		ATORN®		ORION®		ATORN®	
Cutting material		HSS		HSS		HSS		HSS		HSS	
Surface		Uncoated		Uncoated		TiN		TiN		TiNALOX	
Composition of set	Number of pieces in assortment/ set (PCS)	11512... Ident. No.		11512... Ident. No.		11512... Ident. No.		11512... Ident. No.		11512... Ident. No.	
4.3/5.0/6.0/6.3/7.0/8.0/8.3/10.0/10.4/11.5/12.4/15.0/16.5/19.0/20.5/23.0/25.0	17	011	●	015	●	020	●	025	●	030	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® HSS 90° conical countersink, three flutes, extremely uneven pitch (DIN 335)

for universal use up to 1000 N/mm²

90° | HSS | TiN/ ZrN | Z 3 | HA

Application:
For producing 90° counterbores up to 1000 N/mm².

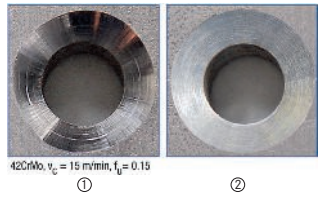
Execution:
- profile-ground triple-edge countersink with radial relief, with extremely uneven pitch

Advantage:
- radial relief ensures optimum chip breaking
- Uneven pitch ensures excellent surfaces without chatter marks and minimisation of cutting forces





Argument no. 3:
Extremely variable pitch



Optimised sinking
① Standard countersink
② EUC speed

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11501637-661	40	30	12	15	15	40	50	40	40	40	40	40		20	10			6	

					ATORN®							ATORN®	
				Surface	TiN/ZrN					Surface	TiN/ZrN		
mm	mm	mm	mm	f steel 700 ● (mm/U)	11501... Ident. No.		mm	mm	mm	mm	f steel 700 ● (mm/U)	11501... Ident. No.	
4.3	1.3	4	40	0.06	637	●	12.4	2.8	8	56	0.1	651	●
6	1.5	5	45	0.08	641	●	15	3.2	10	60	0.12	653	●
6.3	1.5	5	45	0.08	642	●	16.5	3.2	10	60	0.12	654	●
8	2	6	50	0.1	645	●	19	3.5	10	63	0.14	655	●
8.3	2	6	50	0.1	646	●	20.5	3.5	10	63	0.18	656	●
10	2.5	6	50	0.1	648	●	23	3.8	10	67	0.18	657	●
10.4	2.5	6	50	0.1	649	●	25	3.8	10	67	0.18	658	●
11.5	2.8	8	56	0.1	650	●	31	4.2	12	71	0.22	661	●

Prod. Gr. 1EB

ATORN® HSS 90° conical countersink set, three flutes, extremely uneven pitch (DIN 335)

for universal use up to 1000 N/mm²

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11501662	40	30	12	15	15	40	50	40	40	40	40	40		20	10			6	

		ATORN®
	Cutting material	HSS
	Surface	TiN/ZrN
Composition of set	Number of pieces in assortment/set (PCS)	11501... Ident. No.
6.3/10.4/16.5/20.5/25	5	662 ●

Prod. Gr. 1EB

ATORN® HSSE 90° conical countersink, three-flute cutter (DIN 335)

for universal use up to 1300 N/mm²

90° | HSSE | Z 3 | HA



Application:
For producing 90° counterbores up to 1300 N/mm².

Advantage:
- radial relief ensures optimum chip breaking

Execution:
- profile-ground triple-edge countersink with radial relief

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11500698-750	40	30	12	10	8	40	70	60	50	40	30	30		15	10	10			

				Surface	Uncoated	
mm	mm	mm	mm	f steel 1000 ● (mm/U)	11500... Ident. No.	
4.3	1.3	4	40	0.07	698	●
5	1.5	4	40	0.07	699	●
5.3	1.5	4	40	0.07	700	●
6	1.5	5	45	0.08	702	●
6.3	1.5	5	45	0.08	705	●
7	1.8	6	50	0.09	706	●
8	2	6	50	0.1	710	●
8.3	2	6	50	0.1	712	●
9.4	2.2	6	50	0.11	715	●
10	2.5	6	50	0.12	720	●

				Surface	Uncoated	
mm	mm	mm	mm	f steel 1000 ● (mm/U)	11500... Ident. No.	
10.4	2.5	6	50	0.12	722	●
11.5	2.8	8	56	0.13	723	●
12.4	2.8	8	56	0.13	725	●
15	3.2	10	60	0.14	730	●
16.5	3.2	10	60	0.14	735	●
19	3.5	10	63	0.15	736	●
20.5	3.5	10	63	0.16	740	●
23	3.8	10	67	0.17	741	●
25	3.8	10	67	0.18	745	●
31	4.2	12	71	0.21	750	●

Prod. Gr. 1EB

ATORN® HSS 90° conical countersink, three-flute cutter and shank with 3 flats

for universal use up to 1000 N/mm²

90° | HSS | Z 3



Application:
For producing 90° counterbores up to 1000 N/mm².

Advantage:
- radial relief ensures optimum chip breaking
- three-edge shank ensures excellent power transmission in the chuck

Execution:
- profile-ground triple-edge countersink with three-edge shank with radial relief

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11501506-561	30	20	10	8		40	70	60	50	40	30	30		15					

				Surface	Uncoated	
mm	mm	mm	mm	f steel 700 ● (mm/U)	11501... Ident. No.	
11.5	2.8	8	56	0.13	506	●
12.4	2.8	8	56	0.13	511	●
13.4	2.9	8	56	0.13	516	●
15	3.2	10	60	0.14	521	●
16.5	3.2	10	60	0.14	526	●
19	3.5	10	63	0.15	532	●

				Surface	Uncoated	
mm	mm	mm	mm	f steel 700 ● (mm/U)	11501... Ident. No.	
20.5	3.5	10	63	0.16	536	●
23	3.8	10	67	0.17	542	●
25	3.8	10	67	0.18	547	●
28	4	12	71	0.19	551	●
30	4.2	12	71	0.2	556	●
31	4.2	12	71	0.21	561	●

Prod. Gr. 1EB

ATORN® HSS 90° conical countersinks, extra-long

for universal use up to 1000 N/mm²



Application:
For producing deep-set 90° counterbores up to 1000 N/mm².

Execution:
- **Ident. No. 300–445:** profile-ground extra-long triple-edge countersink
- **Ident. No. 450–541:** Profile-ground extra-long triple-edge countersink

Advantage:
- **Ident. No. 300–445:**
  - radial relief ensures optimum chip breaking
  - deep-set countersinks are made easy for the user
- **Ident. No. 450–541:**
  - Radial relief ensures optimum chip breaking
  - Deep-set countersinks are made easy for the user

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11501300-455	30	20	10	10		40	70	60	50	40	30	30		15					

Cutting material				HSS	
mm	mm	mm	mm	f steel 700 ● (mm/U)	11501... Ident. No.	
5.8	1.5	104	5	0.08	300	●
6.3	1.5	104	5	0.08	305	●
6.3	1.5	154	5	0.08	405	●
8.3	2	105	6	0.1	310	●
8.3	2	155	6	0.1	410	●
9.4	2.2	106	6	0.11	315	●
10.4	2.5	107	6	0.12	320	●
10.4	2.5	157	6	0.12	420	●
11.5	2.8	108	6	0.13	325	●
12.4	2.8	108	8	0.13	330	●
12.4	2.8	158	8	0.13	430	●

Cutting material				HSS	
mm	mm	mm	mm	f steel 700 ● (mm/U)	11501... Ident. No.	
15	3.2	109	10	0.14	335	●
15	3.2	159	10	0.14	435	●
16.5	3.2	111	10	0.14	340	●
16.5	3.2	161	10	0.14	440	●
16.5	3.2	261	10	0.14	541	●
20.5	3.5	114	10	0.16	345	●
20.5	3.5	164	10	0.16	445	●
25	3.8	118	10	0.18	350	●
25	3.8	168	10	0.18	450	●
31	4.2	140	12	0.21	355	●
31	4.2	190	12	0.21	455	●

Prod. Gr. 1EB

ATORN® HSSE 90° conical countersink sets, extra-long

for universal use up to 1000 N/mm²

Application:
For producing deep-set 90° counterbores up to 1000 N/mm².

Execution:
- profile-ground extra-long triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking
- deep-set countersinks are made easy for the user



Ident. No. 390



Ident. No. 490

Composition of set		6.3/8.3/10.4/12.4/16.5/20.5	6.3/8.3/10.4/12.4/16.5/20.5
Shaft length (mm)		100	150
11501...	Ident. No.	390	490
		●	●

Prod. Gr. 1EB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11501390	30	20	10	8		40	70	60	50	40	30	30		15					
11501490	30	20	10	8		40	70	60	50	40	30	30		15					

ATORN® Conical countersink, 90°, HSSE, multi-flute cutter

for universal use up to 1300 N/mm²



Application:
For producing 90° counterbores up to 1300 N/mm².

Execution:
- profile-ground triple-edge countersink with patented special grind

Advantage:
- excellent service life for Hardox 400, Creusabro, Inconel, Nimonic, Hastelloy, Monel, titanium and titanium alloy materials
- radial relief ensures optimum chip breaking
- innovative cutting geometry with greater number of cutters provides excellent cutting performance and good surface quality

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11531	35	25	15	12	10	40	70	60	50	40	30			20	12	12	12		

mm	mm	mm	mm	Number of cutting edges (PCS)	11531... Ident. No.	
10.4	4	50	6	4	104	●
12.4	4	56	8	5	124	●
16.5	4.5	60	10	5	165	●
20.5	5	63	10	5	205	●
25	5.5	67	10	5	250	●
31	6	71	12	5	310	●

Prod. Gr. 1EB

ATORN® HSS 90° conical countersink, multi-flute cutter (DIN 335)

for universal use up to 1000 N/mm²



Application:
For producing 90° counterbores up to 1000 N/mm².

Execution:
- profile-ground multi-edge countersink with straight cutting edge

Advantage:
- high number of cutting edges for quiet cutting performance
- very good cutting performance and surface quality (chatter-free)

mm	mm	mm	mm	Number of cutting edges (PCS)	f steel 700 ● (mm/U)	11495... Ident. No.	
8	1.5	48	8	5	0.1	408	●
12.5	2	48	8	5	0.13	412	●
16	3.2	56	10	7	0.14	416	●
20	5	60	10	7	0.16	420	●

Prod. Gr. 1EB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11495408-420	30	20	10	10	15	40	70	40	40	60	60	30		20	20	20	20		

ATORN® ORION® HSS/HSSE 90° conical countersink, three-way cutter (DIN 335)

For universal use

90° | HSS | HSSE | Z 3 | MK



Application:
Ident. No. 312–373, 382–393, 402–403, 412–413, 422–423, 432–433, 442–443: For producing 90° counterbores up to 1000 N/mm².
Ident. No. 381, 401, 411, 421, 431, 441: For producing 90° counterbores up to 1300 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11500312-442	30	20	10	10		40	70	60	50	40	30	30		15					
11500353-443	30	20	10	10		40	70	60	50	40	30	30		15					
11500381-441	40	30	15	10	8	40	70	60	50	40	30	30		25	10	10			

					ATORN®		ORION®		ATORN®	
				Cutting material	HSS		HSS		HSSE	
mm	mm	mm		f steel 700 ● (mm/U)	11500... Ident. No.		11500... Ident. No.		11500... Ident. No.	
15	3.2	85	MK 1	0.14	312	●	-	-	-	-
16.5	3.2	85	MK 1	0.14	322	●	-	-	-	-
20.5	3.5	100	MK 2	0.16	337	●	-	-	-	-
25	3.8	106	MK 2	0.18	352	●	353	●	-	-
28	4	112	MK 2	0.19	367	●	-	-	-	-
30	4.2	112	MK 2	0.2	372	●	373	●	-	-
31	4.2	112	MK 2	0.21	382	●	383	●	381	●
34	4.5	118	MK 2	0.22	392	●	393	●	-	-
37	4.8	118	MK 2	0.24	402	●	403	●	401	●
40	10	140	MK 3	0.25	412	●	413	●	411	●
50	14	150	MK 3	0.28	422	●	423	●	421	●
63	16	180	MK 4	0.33	432	●	433	●	431	●
80	22	190	MK 4	0.33	442	●	443	●	441	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® HSSE 90° conical countersink, multi-flute cutter

For universal use up to 60 HRC

90° | HSSE | Z 5 | MK



Application:
For producing 90° counterbores up to 60 HRC.

Execution:
- profile-ground multi-edge countersink with radial relief on the cutter

Advantage:
- excellent service life for Hardox 400, Creusabro, Inconel, Nimonic, Hastelloy, Monel, titanium and titanium alloy materials
- innovative and patented cutter geometry with a large number of cutters ensures excellent cutting performance and good surface qualities

mm	mm	mm		Number of cutting edges (PCS)	11532... Ident. No.	
31	6	111	MK 2	5	310	●
40	10	140	MK 3	5	400	●

Prod. Gr. 1EB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11532	35	25	15	12	10	40	70	60	50	40	30			20	12	12	12		

ATORN® HSS 90° conical countersink, multi-flute cutter (DIN 335)

for universal use up to 1000 N/mm²



Application:
For producing 90° counterbores up to 1000 N/mm².

Execution:
- profile-ground multi-edge countersink with straight cutting edge

Advantage:
- high number of cutting edges for quiet cutting performance
- very good cutting performance and surface quality (chatter-free)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11495430-470	30	20	10	10		40	70	60	50	40	30	30		15					

mm	mm	mm		Number of cutting edges (PCS)	f steel 700 ● (mm/U)	11495... Ident. No.	
25	7	118	MK 2	9	0.18	430	●
31.5	9	122	MK 2	9	0.21	440	●
40	12	150	MK 3	11	0.25	450	●
50	16	155	MK 3	13	0.28	460	●
63	20	185	MK 4	15	0.33	470	●

Prod. Gr. 1EB

ATORN® ORION® HSSE 90° conical countersink and deburring tool

for universal use up to 1000 N/mm²



Application:
For producing 60° counterbores up to 1300 N/mm².

Execution:
- **Ident. No. 605–651:** profile-ground single-edge countersink with radial relief
- **Ident. No. 905–951:** profile-ground single-edge countersink

Advantage:
- radial relief ensures optimum chip breaking
- deep and wide flute provides optimum chip removal
- **Ident. No. 605–651:** special geometry ensures vibration-free and accurate countersinking with high finish quality

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11497605-651	30	20	10	8	7	40	70	50	40	35	30	30		15	8				
11497905-951	30	20	10	8	7	40	70	50	40	35	30	30		15	8				

mm	Min./max. cutting edge Ø	mm	mm	f steel 1000 ● (mm/U)	ATORN® 11497... Ident. No.		ORION® 11497... Ident. No.	
5	1-5 mm	5	50	0.07	605	●	905	●
10	1-10 mm	10	60	0.12	610	●	910	●
15	2-15 mm	10	65	0.14	615	●	915	●
20	2-20 mm	10	73	0.16	620	●	920	●
25	2-25 mm	10	80	0.18	625	●	925	●
30	3-30 mm	12	82	0.2	630	●	930	●
40	3-40 mm	15	92	0.25	640	●	940	●
40	3-40 mm	12	92	0.25	641	●	941	●
50	3-50 mm	15	100	0.28	650	●	950	●
50	3-50 mm	12	100	0.30	651	●	951	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® ORION® HSSE 90° conical countersinks with slanted hole

for universal use up to 1300 N/mm²

90° | HSSE | Z 1 | HA

Application:
For producing 90° counterbores up to 1300 N/mm².

Execution:
- profile-ground single-edge countersink with slanted hole

Advantage:
- slanted continuous hole improves chip removal
- **No. 11516:** TiN coating for increased requirements in service life
- **No. 11516 010, 11516 020, 11516 030, 11516 040, 11516 050:** precision grinding for the most demanding requirements in terms of dimensional accuracy



No. 11515
HSSE



No. 11516
HSSE, TiN-coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11515010-050	30	20	10	8	7	40	70	60	50	40	30	30		15	8				30
11515015-055	30	20	10	8	7	40	70	60	50	40	30	30		15	8				
11516010-050	30	20	10	8	7	40	70	60	50	40	30	30		15	8				
11516015-055	30	20	10	8	7	40	70	60	50	40	30	30		15	8				

					ATORN®		ORION®		ATORN®		ORION®	
				Surface	Uncoated		Uncoated		TiN		TiN	
mm	Min./max. cutting edge Ø	mm	mm	f steel 700 ● (mm/U)	11515... Ident. No.		11515... Ident. No.		11516... Ident. No.		11516... Ident. No.	
10	2-5 mm	6	45	0.12	010	●	015	●	010	●	015	●
14	5-10 mm	6	56	0.13	020	●	025	●	020	●	025	●
21	10-15 mm	10	67	0.16	030	●	035	●	030	●	035	●
28	15-20 mm	12	90	0.19	040	●	045	●	040	●	045	●
35	20-25 mm	15	106	0.23	050	●	055	●	050	●	055	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® ORION® 90° conical countersink set with slanted hole

for universal use up to 1300 N/mm²

90° | HSSE | TiN | Z 1 | HA

Application:
For producing 90° counterbores up to 1300 N/mm².

Execution:
- profile-ground single-edge countersink with slanted hole

Advantage:
- slanted continuous hole improves chip removal



No. 11517



No. 11518

		ATORN®		ORION®		ATORN®		ORION®	
	Surface	Uncoated		Uncoated		TiN		TiN	
Composition of set	Min./max. cutting edge Ø	11517... Ident. No.		11517... Ident. No.		11518... Ident. No.		11518... Ident. No.	
1 each of countersink 10/14/21/28	2-20 mm	010	●	015	●	010	●	015	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11517010	30	20	10	8	7	40	70	60	50	40	30	30		15	8				
11517015	30	20	10	8	7	40	70	60	50	40	30	30		15	8				
11518010	30	20	10	8	7	40	70	60	50	40	30	30		15	8				
11518015	30	20	10	8	7	40	70	60	50	40	30	30		15	8				

ATORN® HSSE 90° conical countersink, extra long

for universal use up to 1300 N/mm²



Application:
For producing 90° counterbores up to 1300 N/mm².

Execution:
- **Ident. No. 210–230:** profile-ground single-edge countersink, straight shank length 60 mm
- **Ident. No. 310–330:** profile-ground single-edge countersink with slanted bore, straight shank length 120 mm

Advantage:
- slanted continuous hole improves chip removal
- deep-set countersinks are made easy for the user



Ident. No. 210–230



Ident. No. 310–330

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11515210-230	30	20	10	8	7	40	70	60	50	40	30	30		15	8				
11515310-330	30	20	10	8	7	40	70	60	50	40	30	30		15	8				

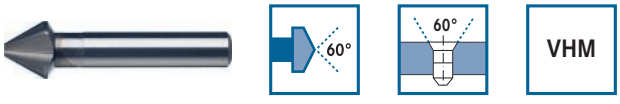
				Shaft length (mm)	60		120	
mm	Min./max. cutting edge Ø	mm	mm	f steel 1000 ● (mm/U)	11515... Ident. No.		11515... Ident. No.	
10	2-5 mm	6	76	0.12	210	●	-	-
10	2-5 mm	6	136	0.12	-	-	310	●
14	5-10 mm	6	86	0.13	220	●	-	-
14	5-10 mm	6	146	0.13	-	-	320	●
21	10-15 mm	10	96	0.16	230	●	-	-
21	10-15 mm	10	156	0.16	-	-	330	●

Prod. Gr. 1EB

conical countersink 60° solid carbide

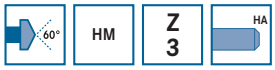
application:
for 60° screw head countersinking or deburring holes.

advantage:
- very wide range
- many shaft designs and shapes
- very long service life through high-quality solid carbide cutting material



ATORN® Solid carbide 60° conical countersink, three-flute cutter (DIN 334)

for universal use up to 1300 N/mm²



Application:
For producing 60° counterbores up to 1300 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11498308-325	60	45	20	20	15	80	150	120	100	80	60	60		40	20	20	20		

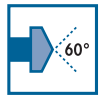
				Surface	Uncoated	
mm	mm	mm	mm	f steel 1300 ● (mm/U)	11498... Ident. No.	
8	2	6	50	0.08	308	●
10	2.5	8	50	0.09	310	●
12.5	3.2	8	56	0.1	312	●
16	4	10	63	0.12	316	●
20	5	10	67	0.13	320	●
25	6.3	10	71	0.14	325	●

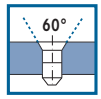
Prod. Gr. 114

conical countersink 60° HSS / HSSE

application:
for 60° screw head countersinking or deburring holes.

advantage:
- very wide range
- many cutting materials available
- many shaft designs and shapes



HSS
HSSE

ATORN® ORION® HSS 60° conical countersink, three-flute cutter (DIN 334)

for universal use up to 1000 N/mm²

60° | HSS | TiN | Z 3 | HA

Application:
For producing 60° counterbores up to 1000 N/mm².

Execution:
- **Ident. No. 106–225:** profile-ground triple-edge countersink with radial relief
- **Ident. No. 506–725:** profile-ground triple-edge countersink with standard relief

Advantage:
- radial relief ensures optimum chip breaking
- **Ident. No. 706–725:** TiN coating for increased service life requirements


Ident. No. 106–126, 506–525


Ident. No. 206–225, 706–725

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11498106-126	30	20	10	8		40	70	60	50	40	30	30		15					
11498206-225	30	20	10	8		40	70	60	50	40	30	30		15					
11498506-525	30	20	10	8		40	70	60	50	40	30	30		15					
11498706-725	30	20	10	8		40	70	60	50	40	30	30		15					

					ATORN®				ORION®			
				Surface	Uncoated		TiN		Uncoated		TiN	
mm	mm	mm	mm	f steel 700 ● (mm/U)	11498... Ident. No.		11498... Ident. No.		11498... Ident. No.		11498... Ident. No.	
6.3	1.6	5	45	0.08	106	●	206	●	506	●	706	●
8	2	6	50	0.1	108	●	208	●	508	●	708	●
10	2.5	6	50	0.12	110	●	210	●	510	●	710	●
12.5	3.2	8	56	0.13	112	●	212	●	512	●	712	●
16	4	10	63	0.14	117	●	216	●	516	●	716	●
20	5	10	67	0.16	121	●	220	●	520	●	720	●
25	6.3	10	71	0.18	126	●	225	●	525	●	725	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® ORION® HSSE 60° conical countersink set, three-flute cutter (DIN 334)

for universal use up to 1000 N/mm²



Ident. No. 900–905, 920–925



Ident. No. 910–915, 935

Application:
For producing 60° counterbores up to 1000 N/mm².

Execution:
- **Ident. No. 900, 910, 920, 930:** profile-ground triple-edge countersink with radial relief
- **Ident. No. 905, 915, 925, 935:** profile-ground triple-edge countersink with standard relief

Advantage:
- radial relief ensures optimum chip breaking

		ATORN®		ORION®		ATORN®		ORION®	
	Cutting material	HSS		HSS		HSS		HSS	
	Surface	Uncoated		Uncoated		TiN		TiN	
Composition of set	Number of pieces in assortment/set (PCS)	11498... Ident. No.		11498... Ident. No.		11498... Ident. No.		11498... Ident. No.	
8.0/10.0/12.5/16.0/20.0	5	900	●	905	●	910	●	915	●
6.3/8.0/10.0/12.5/16.0/20.0/25.0	7	920	●	925	●	930	●	935	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11498900	30	20	10	8		40	70	60	50	40	30	30		15					
11498905	30	20	10	8		40	70	60	50	40	30	30		15					
11498910	30	20	10	8		40	70	60	50	40	30	30		15					
11498915	30	20	10	8		40	70	60	50	40	30	30		15					
11498920	30	20	10	8		40	70	60	50	40	30	30		15					
11498925	30	20	10	8		40	70	60	50	40	30	30		15					
11498930	30	20	10	8		40	70	60	50	40	30	30		15					
11498935	30	20	10	8		40	70	60	50	40	30	30		15					

ATORN® Conical countersink, 60°, HSS, multi-flute cutter (DIN 334)

for universal use up to 1000 N/mm²



Application:
For producing 60° counterbores up to 1000 N/mm².

Execution:
- profile-ground multi-edge countersink with straight cutting edge

Advantage:
- high number of cutting edges for quiet cutting performance
- very good cutting performance and surface quality (chatter-free)

mm	mm	mm	mm	Number of cutting edges (PCS)	f steel 700 ● (mm/U)	11495... Ident. No.	
8	1.5	50	8	5	0.1	308	●
12.5	2	50	8	5	0.13	312	●
16	3.2	60	10	7	0.14	316	●
20	5	63	10	7	0.16	320	●

Prod. Gr. 1EB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11495308-320	30	20	10	10		40	70	40	40	60	60	30		20					

ATORN® Conical countersink, 60°, HSS, multi-flute cutter (DIN 334)

for universal use up to 1000 N/mm²



Application:
For producing 60° counterbores up to 1000 N/mm².

Execution:
- profile-ground multi-edge countersink with straight cutting edge

Advantage:
- high number of cutting edges for quiet cutting performance
- very good cutting performance and surface quality (chatter-free)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11495330-360	30	20	10	10		40	70	60	50	40	30	30		15					

mm	mm	mm		Number of cutting edges (PCS)	f steel 700 ● (mm/U)	11495... Ident. No.	
25	7	125	MK 2	9	0.18	330	●
31.5	9	132	MK 2	9	0.21	340	●
40	12	160	MK 3	11	0.25	350	●
50	16	170	MK 3	13	0.28	360	●

Prod. Gr. 1EB

ATORN® HSSE 60° conical countersink, three-flute cutter (DIN 334)

for universal use up to 1000 N/mm²





Application:
For producing 60° counterbores up to 1000 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11498226-263	30	20	10	10		40	70	60	50	40	30	30		15					

				Cutting material	ATORN® HSS	
mm	mm	mm		f steel 700 ● (mm/U)	11498... Ident. No.	
25	6.3	112	MK 2	0.18	226	●
31.5	10	118	MK 2	0.21	231	●
40	12.5	150	MK 3	0.25	240	●
50	16	160	MK 3	0.28	250	●
63	20	190	MK 4	0.33	263	●

Prod. Gr. 1EB

ATORN® ORION® HSSE 60° conical countersink, single-flute cutter

for universal use up to 1300 N/mm²





Application:
For producing 60° counterbores up to 1300 N/mm².

Execution:
- profile-ground single-edge countersink

Advantage:
- radial relief ensures optimum chip breaking
- deep and wide flute provides optimum chip removal
- **Ident. No. 405–430:** special geometry ensures vibration-free and accurate countersinking with high finish quality

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11497405-430	30	20	10	8		40	70	60	50	40	30	30		15	8				
11497705-730	30	20	10	8		40	70	60	50	40	30	30		15	8				

					ATORN®		ORION®	
mm	Min./max. cutting edge Ø	mm	mm	f steel 1000 ● (mm/U)	11497... Ident. No.		11497... Ident. No.	
5	1-5 mm	5	50	0.07	405	●	705	●
10	1-10 mm	10	60	0.12	410	●	710	●
15	2-15 mm	10	65	0.14	415	●	715	●
20	2-20 mm	10	73	0.16	420	●	720	●
25	2-25 mm	10	80	0.16	425	●	-	-
30	3-30 mm	12	82	0.2	430	●	730	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

conical countersink HSS 75°

application:
for 75° screw head countersinking or deburring holes.








ATORN® HSS 75° conical countersink, three-flute cutter
for universal use up to 1000 N/mm²



Application:
For producing 75° counterbores up to 1000 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11499008-025	30	20	10	10		40	70	60	50	40	30	30		15					

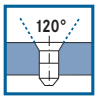
mm	mm	mm	mm	Surface f steel 700 ● (mm/U)	Uncoated 11499... Ident. No.	
8	2	6	50	0.1	008	●
10	2.5	6	54	0.12	010	●
12.5	2.8	8	54	0.13	012	●
15	3.2	8	56	0.14	015	●
20	3.5	10	63	0.16	020	●
25	6.3	10	71	0.18	025	●

Prod. Gr. 1EB

conical countersink HSS 120°

application:
for 120° screw head countersinking or deburring holes.





ATORN® ORION® HSS 120° conical countersinks
for universal use up to 1000 N/mm²



Application:
For producing 120° counterbores up to 1000 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11502106-126	30	20	10	10		40	70	60	50	40	30	30		15					
11502306-325	30	20	10	10		40	70	60	50	40	30	30		15					

mm	mm	mm	mm	Surface f steel 700 ● (mm/U)	ATORN® Uncoated 11502... Ident. No.		ORION® Uncoated 11502... Ident. No.	
6.3	1.5	6	49	0.1	106	●	306	●
8	2	6	49	0.1	108	●	308	●
12.5	2.8	8	54	0.13	112	●	312	●
16	3.2	10	57	0.14	117	●	316	●
20	3.5	10	59	0.16	120	●	320	●
25	3.8	10	63	0.18	126	●	325	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® HSS 120° conical countersink, three-flute cutter

for universal use up to 1000 N/mm²



Application:
For producing 120° counterbores up to 1000 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking

mm	mm	mm		Cutting material f steel 700 ● (mm/U)	HSS 11502... Ident. No.	
31.5	4.2	107	MK 2	0.21	231	●
40	10	134	MK 3	0.25	240	●
50	14	143	MK 3	0.28	250	●

Prod. Gr. 1EB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11502231-250	30	20	10	10		40	50	20	20	40	40	30		20					

ATORN® ORION® Hand deburrers 90° HSS

With 3 flutes



Ident. No. 111–125

Application:
For producing 90° counterbores and for deburring up to 1000 N/mm².

Execution:
- profile-ground triple-edge countersink with radial relief

Advantage:
- radial relief ensures optimum chip breaking
- **Ident. No. 111–125:**
  - innovative cutting geometry provides excellent cutting performance and good finish quality
  - ergonomic plastic handle ensures good power transmission

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11511111-125	●	●	○	○		●	●	●	●	●	●	●	○	○					
11511211-225	●	●	○	○		●	●	●	●	●	●	●	○	○					

Spot-facer Ø (mm)	ATORN® 11511... Ident. No.		ORION® 11511... Ident. No.	
11.5	111	●	211	●
12.4	112	●	212	●
15	115	●	215	●
16.5	116	●	216	●
19	119	●	219	●
20.5	120	●	220	●
23	123	●	223	●
25	125	●	225	●

ATORN® = Prod. Gr. 1EB
ORION = Prod. Gr. 1EH

ATORN® HSSE 90° hand deburrer set, three-flute cutter with hexagon shank

for universal use up to 1000 N/mm²

90° | HSS | Z 3



Application:
For 90° counterboring and deburring for the material groups of steel (stainless steel), non-ferrous metals, and (cast iron) up to a strength of 1000 N/mm².

Execution:
- Profile-ground triple-edge countersink with radial relief on the blade

Advantage:
- Radial relief ensures optimum chip breaking
- Innovative cutting geometry provides excellent cutting performance and good finish quality

Technical data:
- Composition of set: 1 of each conical countersink 8/10/11.5/15/20.5

11511...	Ident. No.	900

Prod. Gr. 1EB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11511900	●	●	○	○		●	●	●	●	●	●	●	○	○					

ATORN® Handle with collet chuck

From hand deburrer set

11511...	Ident. No.	530

Prod. Gr. 1EB



ATORN® HSS 90° hand deburring tool, three-flute cutter with hexagon shank

for universal use up to 1000 N/mm²

90° | HSS | Z 3



Application:
For 90° counterboring and deburring for the material groups of steel, (stainless steel), non-ferrous metals, and (cast iron) up to a strength of 1000 N/mm² in individual part and series production.

Execution:
- profile-ground triple-edge countersink with radial back taper on the flute for the most demanding of requirements for dimensional tolerance and process reliability

Advantage:
- radial relief ensures optimum chip breaking
- precision grinding for the most demanding require-ments in terms of dimensional accuracy
- innovative cutting geometry provides excellent cutting performance and good finish quality

Notes:
shaft diameter 6mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11511508-520	●	●	○	○		●	●	●	●	●	●	●	○	○					

Spot-facer Ø (mm)	11511... Ident. No.	
8	508	●
10	510	●
11.5	511	●
15	515	●
20.5	520	●

Prod. Gr. 1EB

ATORN® ORION® Solid carbide 90° deburrer





Application:
For producing chamfers and for deburring up to 1300 N/mm².

Execution:
- Solid carbide deburring tool with universal precision grinding

Advantage:
- **Ident. No. 040–121:**
  - Cutting edge treatment minimises micro-fractures
  - very good surface quality and dimensional accuracy
- **Ident. No. 140–221:** universal tool with an outstanding price-performance ratio

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titanalloy	Nickelalloy	Superalloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11538040-120	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		
11538041-121	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		
11538140-220	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		
11538141-221	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		

					ATORN®				ORION®			
				Surface	Uncoated		TiAlN		Uncoated		TiAlN	
Spot-facer Ø (mm)	Countersink angle (Degree)	Length (mm)	Shaft Ø (mm)	f steel 1000 ● (mm/U)	11538... Ident. No.		11538... Ident. No.		11538... Ident. No.		11538... Ident. No.	
4	90	54	4	0.02	040	●	041	●	140	●	141	●
6	90	57	6	0.03	060	●	061	●	160	●	161	●
8	90	63	8	0.05	080	●	081	●	180	●	181	●
10	90	72	10	0.06	100	●	101	●	200	●	201	●
12	90	83	12	0.08	120	●	121	●	220	●	221	●

ORION = Prod. Gr. 103
ATORN® = Prod. Gr. 114

ATORN® ORION® Solid carbide 60° deburrer





Application:
Ident. No. 040–140, 160, 180, 200, 220: For producing chamfers and for deburring up to 1300 N/mm².
Ident. No. 141, 161, 181, 201, 221: For producing chamfers and for deburring workpieces up to 1300 N/mm².

Execution:
- Solid carbide deburring tool with universal precision grinding

Advantage:
- **Ident. No. 040–121:**
  - Cutting edge treatment minimises micro-fractures
  - very good surface quality and dimensional accuracy
- **Ident. No. 140–221:** universal tool with an outstanding price-performance ratio

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titanalloy	Nickelalloy	Superalloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11537040-120	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		
11537041-121	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		
11537140-220	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		
11537141-221	60	45	35	40	30	140	180	100	80	70	60	55	40	50	20	15	15		

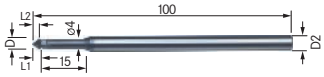
					ATORN®				ORION®			
				Surface	Uncoated		TiAlN		Uncoated		TiAlN	
Spot-facer Ø (mm)	Countersink angle (Degree)	Length (mm)	Shaft Ø (mm)	f steel 1000 ● (mm/U)	11537... Ident. No.		11537... Ident. No.		11537... Ident. No.		11537... Ident. No.	
4	60	54	4	0.02	040	●	041	●	140	●	141	●
6	60	57	6	0.03	060	●	061	●	160	●	161	●
8	60	63	8	0.05	080	●	081	●	180	●	181	●
10	60	72	10	0.06	100	●	101	●	200	●	201	●
12	60	83	12	0.08	120	●	121	●	220	●	221	●

ORION = Prod. Gr. 103
ATORN® = Prod. Gr. 114

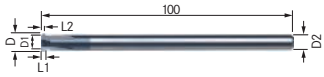
ATORN® Solid carbide 90° forward and reverse deburring tool TiAlN, four-flute cutter

for universal use up to 1300 N/mm²





Ident. No. 040–060



Ident. No. 080–120

VHM | TiAlN | Z 4

Application:
For linear and circular forwards and backwards deburring or 90°chamfering on workpieces in the steel, stainless steel, NF metal, cast and special alloy material groups up to a strength of 1300 N/mm2 in single part and series production.

Execution:
- Solid carbide TiAlN 90° tool with universal precision grinding

Advantage:
- innovative cutting geometry with greater number of flutes provides excellent cutting performance and good surface quality

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11539	60	45	35	40	30	140	180	100	80	70	60	55		50	20	15	15		

Construction size	D (mm)	D1 (mm)	D2 (mm)	L1 (mm)	L2 (mm)	f steel 1000 ● (mm/U)	11539... Ident. No.	
4	3.9	0.6	6	2	1	0.01	040	●
6	5.8	0.8	6	3.8	1.9	0.01	060	●
8	7.8	6	6	1.8	0.9	0.01	080	●
10	9.8	6	6	3.8	1.9	0.012	100	●
12	11.8	6	6	5.8	2.9	0.015	120	●

Prod. Gr. 114

ORION® ATORN® Counterbore 180° (DIN 373)

For thread core holes



HSS | HSSE | 180° | HA

Application:
For producing 180° counterbores for thread core holes in accordance with DIN 74-2, types H, J, K and DIN 974-1.

Execution:
- profile-ground with spiral blade

Advantage:
- spiral chip flutes ensure smooth cutting and the blade does not catch

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11439	30	20	10	10	10	70	80	45	40	40	40	30		15	7				

						ORION®		ATORN®	
					Cutting material	HSS		HSSE	
					Surface	Uncoated		Uncoated	
Suitable for screw thread	Spot-facer Ø (mm)	Tenon Ø (mm)	Shaft Ø (mm)	Length (mm)	Number of cutting edges (PCS)	11438... Ident. No.		11439... Ident. No.	
M3	6	2.5	5	71	3	030	●	030	●
M3	6.5	2.5	5	71	3	-	-	031	●
M4	8	3.3	5	71	3	040	●	040	●
M5	10	4.2	8	80	3	050	●	050	●
M6	11	5	8	80	3	060	●	060	●
M8	15	6.8	12.5	100	3	080	●	080	●
M10	18	8.5	12.5	100	3	100	●	100	●
M12	20	10.2	12.5	100	3	120	●	120	●

ATORN® = Prod. Gr. 1EA
ORION = Prod. Gr. 103

ORION® ATORN® Counterbore 180° (DIN 373)

For fine through hole

HSS | HSSE | TiN | 180° | HA

Application:
No. 11442–11445: For producing counterbores 180° fine quality grade for through hole to DIN 74-2, forms H, J, K and DIN 974-1.
No. 11451: For producing 180° counterbores of fine quality grade for through holes in accordance with DIN 74-2, type H, J, K and DIN 974-1.

Execution:
- profile-ground with spiral blade

Advantage:
- spiral chip flutes ensure smooth cutting and the blade does not catch
- precision grinding for highest requirements in terms of concentricity and dimensional accuracy



No. 11442–11445



No. 11451

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11442	30	20	10	10		70	80	45	40	40	40	30		15					
11445	30	20	10	10	10	70	80	45	40	40	40	30		15	7				
11451	30	20	10	10	10	70	80	45	40	40	40	30		15	7				

						ORION		ATORN			
					Cutting material	HSS		HSSE		HSSE	
					Surface	Uncoated		Uncoated		TiN	
Suitable for screw thread	Spot-facer Ø (mm)	Tenon Ø (mm)	Shaft Ø (mm)	Length (mm)	Number of cutting edges (PCS)	11442... Ident. No.		11445... Ident. No.		11451... Ident. No.	
M2	4.3	2.2	4.3	56	3	020	●	-	-	-	-
M3	6	3.2	5	71	3	030	●	030	●	030	●
M3	6.5	3.2	5	71	3	-	-	031	●	031	●
M4	8	4.3	5	71	3	040	●	040	●	040	●
M5	10	5.3	8	80	3	050	●	050	●	050	●
M6	11	6.4	8	80	3	060	●	060	●	060	●
M8	15	8.4	12.5	100	3	080	●	080	●	080	●
M10	18	10.5	12.5	100	3	100	●	100	●	100	●
M12	20	13	12.5	100	3	120	●	120	●	120	●

ATORN® = Prod. Gr. 1EA
ORION = Prod. Gr. 103

ORION® ATORN® Counterbore 180° (DIN 373)

For through hole, medium quality grade

HSS | HSSE | TiN | 180° | HA

Application:
For producing 180° counterbores of medium quality grade for through holes in accordance with DIN 74-2, type H, J, K and DIN 974-1.

Execution:
- profile-ground with spiral blade

Advantage:
- spiral chip flutes ensure smooth cutting and the blade does not catch



No. 11449–11452



No. 11454

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11449	30	20	10	10		70	80	45	40	40	40	30		15					
11452	30	20	10	10	10	70	80	45	40	40	40	30		15	7				
11454	30	20	10	10	10	70	80	45	40	40	40	30		15	7				

						ORION		ATORN			
					Cutting material	HSS		HSSE		HSSE	
					Surface	Uncoated		Uncoated		TiN	
Suitable for screw thread	Spot-facer Ø (mm)	Tenon Ø (mm)	Shaft Ø (mm)	Length (mm)	Number of cutting edges (PCS)	11449... Ident. No.		11452... Ident. No.		11454... Ident. No.	
M10	18	11	12.5	100	3	100	●	100	●	100	●
M12	20	13.5	12.5	100	3	120	●	120	●	120	●
M2	4.3	2.4	4.3	56	3	020	●	-	-	-	-
M3	6	3.4	5	71	3	030	●	030	●	030	●
M3	6.5	3.4	5	71	3	-	-	031	●	031	●
M4	8	4.5	5	71	3	040	●	040	●	040	●
M5	10	5.5	8	80	3	050	●	050	●	050	●
M6	11	6.6	8	80	3	060	●	060	●	060	●
M8	15	9	12.5	100	3	080	●	080	●	080	●

ATORN® = Prod. Gr. 1EA
ORION = Prod. Gr. 103

ORION® ATORN® HSS/HSSE counterbore sets (DIN 373)

In metal box

Application:

No. 11438: For producing 180° counterbores for thread core holes in accordance with DIN 74-2, types H, J, K and DIN 974-1.

No. 11439: For producing counterbores for thread core holes in accordance with DIN 74-2, types H, J, K and DIN 974-1.

No. 11442–11445: For producing 180° counterbores of fine quality grade for through holes in accordance with DIN 74-2, type H, J, K and DIN 974-1.

No. 11449–11452: For producing 180° counterbores of medium quality grade for through holes in accordance with DIN 74-2, type H, J, K and DIN 974-1.

Execution:

- profile-ground with spiral blade

Advantage:

- spiral chip flutes ensure smooth cutting and the blade does not catch

Technical data:

- Composition of set: 1 of each counterbore for M3/M4/M5/M6/M8/M10



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11438500	30	20	10	10		70	80	45	40	40	40	30		15					
11439500	30	20	10	10	10	70	80	45	40	40	40	30		15	7				
11442500	30	20	10	10		70	80	45	40	40	40	30		15					
11445500	30	20	10	10	10	70	80	45	40	40	40	30		15	7				
11449500	30	20	10	10		70	80	45	40	40	40	30		15					
11452500	30	20	10	10	10	70	80	45	40	40	40	30		15	7				

	ORION		ATORN		ORION		ATORN		ORION		ATORN	
Cutting material	HSS		HSSE		HSS		HSSE		HSS		HSSE	
Version	11438... Ident. No.		11439... Ident. No.		11442... Ident. No.		11445... Ident. No.		11449... Ident. No.		11452... Ident. No.	
For thread core hole M3/M4/M5/M6/M8/M10	500	●	500	●	-	-	-	-	-	-	-	-
For clearance hole M3/M4/M5/M6/M8/M10, fine quality grade	-	-	-	-	500	●	500	●	-	-	-	-
For clearance hole M3/M4/M5/M6/M8/M10, medium quality grade	-	-	-	-	-	-	-	-	500	●	500	●

ATORN® = Prod. Gr. 1EA
ORION = Prod. Gr. 103

ATORN® ORION® HSS step drill with spiral

for universal use up to 1000 N/mm²

HSS | TiN

Application:
For drilling and simultaneous deburring in steel, stainless steel, non-ferrous metals and cast iron.

Execution:

- Profile-ground and twisted

Advantage:

- Twisted design ensures smooth cutting behaviour
- No catching on the cutter and low cutting forces and torques
- High variability: A wide range of bores can be covered with just one tool
- **Ident. No. 100, 200, 300:** 3-facet shank ensures good torque transfer in the chuck
- **Ident. No. 150, 250, 350:** 3-facet shank ensures good torque transfer in the chuck, TiN coating for increased service life requirements



Ident. No. 100–105, 200–205, 300–305



Ident. No. 150–155, 250–255, 350–355
Version HSS-TIN

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11405100-300	●	●	○	○		●	●	●	●	●	●	●	●	●					
11405105-305	●	●	○	○		●	●	●	●	●	●	●	●	●					
11405150-350	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				
11405155-355	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				

					ATORN		ORION		ATORN		ORION	
				Surface	Plasma-nitrated		Uncoated		TiN		TiN	
Type	Step Ø	Step length (mm)	Length (mm)	Shaft Ø (mm)	11405... Ident. No.		11405... Ident. No.		11405... Ident. No.		11405... Ident. No.	
1	4 mm | 5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm	5	79	6	100	●	105	●	150	●	155	●
2	6 mm | 8 mm | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm | 20 mm	4.5	71	9	200	●	205	●	250	●	255	●
3	6 mm | 8 mm | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm | 20 mm | 22 mm | 24 mm | 26 mm | 28 mm | 30 mm	4	100	10	300	●	305	●	350	●	355	●

ORION = Prod. Gr. 103
ATORN® = Prod. Gr. 114

ATORN® ORION® Step drill set with spiral

Sets in box

HSS | TiN

Application:
For drilling and simultaneous deburring in steel, stainless steel, non-ferrous metals and cast iron.

Execution:
- Profile-ground and twisted cutter

Advantage:
- Twisted design ensures smooth cutting behaviour
- No catching on the cutter and low cutting forces and torques
- High variability: A wide range of bores can be covered with just one tool
- **Ident. No. 800, 900:** 3-facet shank ensures good torque transfer in the chuck



Ident. No. 900–905

		ATORN®		ORION®		ATORN®		ORION®	
	Surface	Plasma-nitrated		Uncoated		TiN		TiN	
Composition of set	Number of pieces in assortment/set (PCS)	11405... Ident. No.		11405... Ident. No.		11405... Ident. No.		11405... Ident. No.	
Type 1/2/3	3	800	●	805	●	900	●	905	●

ORION = Prod. Gr. 103
ATORN® = Prod. Gr. 114

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11405800	●	●	○	○		●	●	●	●	●	●	●	●	●					
11405805	●	●	○	○		●	●	●	●	●	●	●	●	●					
11405900	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				
11405905	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				

ATORN® ORION® HSS step drill, straight groove

for universal use up to 1000 N/mm²

HSS | TiN

Application:
For drilling and simultaneous deburring in steel, stainless steel, non-ferrous metals and cast iron.

Execution:
- Profile-ground and straight

Advantage:
- High variability: A wide range of bores can be covered with just one tool
- **Ident. No. 100, 150, 200, 250, 300, 350:** 3-facet shank ensures good torque transfer in the chuck



Ident. No. 100–105, 200–205, 300–305



Ident. No. 150–155, 250–255, 350–355

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11407100-300	●	●	○	○		●	●	●	●	●	●	●	●	●					
11407105-305	●	●	○	○		●	●	●	●	●	●	●	●	●					
11407150-350	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				
11407155-355	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				

					ATORN®		ORION®		ATORN®		ORION®	
				Surface	Uncoated		Uncoated		TiN		TiN	
Type	Step Ø	Step length (mm)	Length (mm)	Shaft Ø (mm)	11407... Ident. No.		11407... Ident. No.		11407... Ident. No.		11407... Ident. No.	
1	4 mm | 5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm	5	79	6	100	●	105	●	150	●	155	●
2	6 mm | 8 mm | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm | 20 mm	4.5	71	9	200	●	205	●	250	●	255	●
3	6 mm | 8 mm | 10 mm | 12 mm | 14 mm | 16 mm | 18 mm | 20 mm | 22 mm | 24 mm | 26 mm | 28 mm | 30 mm	4	85	12	300	●	305	●	350	●	355	●

ORION = Prod. Gr. 103
ATORN® = Prod. Gr. 114

ATORN® ORION® HSS step drill set, straight groove

for universal use up to 1000 N/mm²

HSS | TiN

Application:
For drilling and simultaneous deburring up to a diameter of 30 mm and a material thickness of 5 mm in steel, stainless steel, non-ferrous metals and cast iron.

Advantage:
- High variability: A wide range of bores can be covered with just one tool
- **Ident. No. 800, 900:** 3-facet shank ensures good torque transfer in the chuck

Execution:
- Profile-grounded and straight



Ident. No. 900

		ATORN®		ORION®		ATORN®		ORION®	
	Surface	Uncoated		Uncoated		TiN		TiN	
Composition of set	Number of pieces in assortment/set (PCS)	11407... Ident. No.		11407... Ident. No.		11407... Ident. No.		11407... Ident. No.	
Type 1/2/3	3	800	●	805	●	900	●	905	●

ORION = Prod. Gr. 103
ATORN® = Prod. Gr. 114

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11407800	●	●	○	○		●	●	●	●	●	●	●	●	●					
11407805	●	●	○	○		●	●	●	●	●	●	●	●	●					
11407900	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				
11407905	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				

ATORN® Step drill HSS uncoated, straight groove with exchange bit

For universal use up to 1000 N/mm² in general tool construction

HSS | TiN

Application:
For drilling and simultaneous deburring of holes up to a diameter of 58 mm and a material thickness of up to 4 mm in steel, non-ferrous metals and cast iron. Tool diameters are geared towards meeting the demands of general tool construction.

Advantage:
- High variability: A wide range of bores can be covered with just one tool
- 3-facet shank ensures good torque transfer in the chuck
- User-friendly tool changing: Bit easily replaced in case of wear

Execution:
- Step drill, profile-ground, with straight cutting edge



No. 11409
TiN-coated

Type	Step Ø	Step length (mm)	Surface / Length (mm)	Uncoated 11408... Ident. No.		TiN 11409... Ident. No.	
A1	9 mm | 12 mm | 15 mm | 18 mm | 21 mm | 24 mm | 27 mm | 30 mm | 33 mm | 36 mm	4	85	010	●	010	●
A2	25 mm | 28 mm | 31 mm | 34 mm | 37 mm | 40 mm | 43 mm | 46 mm | 49 mm | 52 mm | 55 mm | 58 mm	4	85	015	●	015	●

Prod. Gr. 114

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11408010-015	●	●	○	○		●	●	●	●	●	●	●	●	●					
11409010-015	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				

ATORN® HSS step drill

For the electrical industry

HSS | TiN

Application:
For drilling through holes for reinforced pipe thread in steel, stainless steel, non-ferrous metals and cast iron.

Execution:
- Step drill, profile-ground, with spiral cutting edge

Advantage:
- High variability: A wide range of bores can be covered with just one tool
- 3-facet shank ensures good torque transfer in the chuck
- User-friendly tool changing: Bit easily replaced in case of wear



No. 11408 020, 11409 020–11409 025

Type	Step Ø	Step length (mm)	Surface Length (mm)	Uncoated 11408... Ident. No.		TiN 11409... Ident. No.	
E1 through hole	12.5 mm (PG7) | 15.2 mm (PG9) | 18.6 mm (PG11) | 20.4 mm (PG13.5) | 22.5 mm (PG16) | 28.3 mm (PG21)	4	85	020	●	020	●
E2 core hole	11.4 mm (PG7) | 15 mm (PG9) | 17.25 mm (PG11) | 19 mm (PG13.5) | 21.25 mm (PG16) | 26.75 mm (PG21)	6	92	030	●	025	●

Prod. Gr. 114

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11408020	●	●	○	○		●	●	●	●	●	●	●	●	●					
11408030	●	●	○	○		●	●	●	●	●	●	●	●	●					
11409020	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				
11409025	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				

ATORN® HSS step drill, spiral groove with interchangeable bit

For universal use up to 1000 N/mm² in electrical industry MF thread

HSS | TiN

Application:
For drilling through holes and core holes for metric fine thread up to a material thickness of 4 mm in steel, stainless steel, non-ferrous metals and cast iron.

Execution:
- **No. 11408:** Step drill HSS, uncoated and profile-ground with twisted tip for highest requirements in terms of dimensional accuracy and process reliability
- **No. 11409:** Step drill HSS TiN, profile-ground and twisted tip for highest requirements in terms of dimensional accuracy and process reliability

Advantage:
- High variability: A wide range of bores can be covered with just one tool
- 3-facet shank ensures good torque transfer in the chuck
- User-friendly tool changing: Bit easily replaced in case of wear



No. 11408



No. 11409

Type	Step Ø	Step length (mm)	Surface Length (mm)	Plasma-nitrated 11408... Ident. No.		TiN 11409... Ident. No.	
E 3 S	10.5/12.5 mm (M12 x 1.5) | 14.5/16.5 mm (M16 x 1.5) | 18.5/20.5 mm (M20 x 1.5) | 23.5/25.5 mm (M25 x 1.5) | 30.5/32.5 mm (M32 x 1.5) | 38.5/40.5 mm (M40 x 1.5)	4	110	040	●	040	●

Prod. Gr. 114

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11408040	●	●	○	○		●	●	●	●	●	●	●	●	●					
11409040	●	●	●	●	○	●	●	●	●	●	●	●	●	●	○				

ATORN® HSS exchange bit for step drill

No. 11408-11409

HSS | TiN

Application:
For use in step drill 11408 010-040 and 11409 010-040

Execution:
- **No. 11408:** Replacement bit HSS, uncoated with 118° tip angle and profile-ground, twisted tip for highest requirements in terms of dimensional accuracy and process reliability
- **No. 11409:** Replacement bit HSS-TiN, with 118° tip angle and profile-ground, twisted tip for highest requirements in terms of dimensional accuracy and process reliability

Advantage:
- Twisted design ensures smooth cutting behaviour
- User-friendly tool changing: Bit easily replaced in case of wear

Technical data:
- Type: Step drills



No. 11408
Spare drills



No. 11409
Spare drills

Surface	Uncoated		TiN	
	11408... Ident. No.		11409... Ident. No.	
	110	●	110	●

Prod. Gr. 114

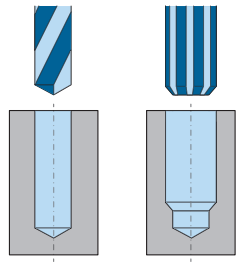


The basics of reaming

reaming is part of the precision machining process or finishing process. holes are mainly reamed in case of special requirements around surface quality, roundness, cylindricity and diameter tolerance.

set the hole with a particular allowance, see allowance table, then create the desired fit with the reamer.

Note: if not necessary, do not countersink hole due to the negative impact on the service life of the reamer.



Surfaces that can be achieved compared with other procedures

Average surface finish Ra	25	12,5	6,3	3,2		1,6	0,8		0,4	0,2	0,1	0,05	0,025
average roughness Rz	100	63	40	25	16	10	6,3	4	2,5	1,6	1	0,63	0,25
Drilling													
Drilling out													
Spindles													
Grinding													
Sanding													
Honing													
Rolling													

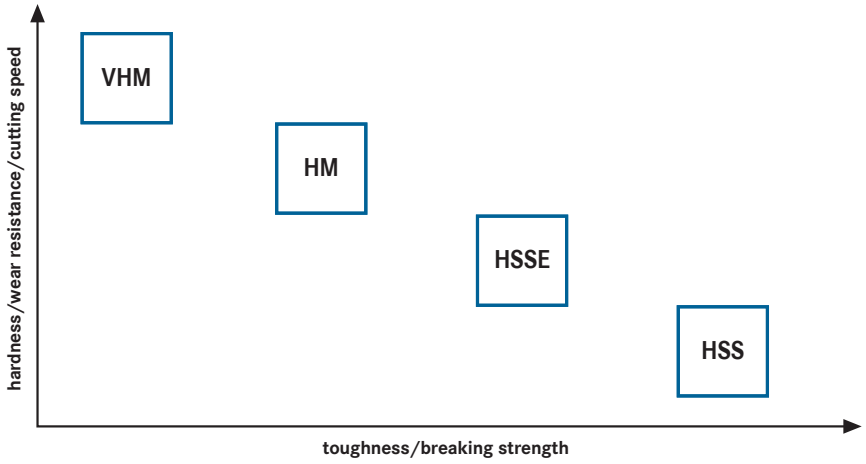


Producible surface qualities during reaming in various materials

	Average surface finish Ra	25	12,5	6,3	3,2		1,6	0,8		0,4	0,2	0,1	0,05	0,025
	average roughness Rz	100	63	40	25	16	10	6,3	4	2,5	1,6	1	0,63	0,25
ISO P	low and high alloyed steels													
ISO M	Stainless steels													
ISO N	Non-ferrous metals													
ISO K	Cast metal													
ISO S	Special alloys / titanium													
ISO H	Hardened steel up to 65 HRC													

Producible — Conditionally producible

Cutting materials of reamers



solid carbide
- cutting material for application up to 63 HRC
- high cutting speed
- high precision

CC carrier equipped with cemented carbide
- high elasticity
- high cutting speed
- high precision

HSSE high-speed steel
- cutting material for application up to 1300 N/mm^2
- small to medium cutting speeds
- approx. 5% cobalt content
- very high elasticity

HSS high-speed steel
- cutting material for application up to 1000 N/mm^2
- low cutting speeds
- low alloy content
- very high elasticity

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Coatings for reamers

Titanium nitride

TiN

- Long proven standard layer
- High hardness
- Very good adhesive strength
- Sufficient toughness
- Affordable universal layer
- Vickers hardness: 2200 HV
- Friction coefficient of steel: 0.5
- temperature resistance: 600°
- Colour: gold
- Coating process: PVD



Titanium carbon nitride

TiCN

- Very high hardness
- High adhesive strength
- Relatively high thermal conductivity
- Low friction coefficient against steel
- Vickers hardness: 3500 HV
- Friction coefficient of steel: 0.2
- Temperature resistance: 400°
- Colour: blue-grey
- Coating process: PVD



titanium aluminium nitride

TiAlN

- universal layer for high-performance machining with high cutting speed
- marked thermal and chemical stability
- very high hardness
- very good heat resistance
- relatively low thermal conductivity
- Vickers hardness: 3200 HV
- friction coefficient of steel: 0.55
- temperature resistance: 900–1000°
- colour: dark blue-grey
- coating process: PVD



Titanium aluminium carbon nitride

TiAlCN

- Universal layer for high-performance machining with high cutting speed
- Low friction
- Very high hardness
- High oxidation resistance
- Relatively low thermal conductivity
- Vickers hardness: 3500 HV
- Friction coefficient of steel: 0.20
- Temperature resistance: 800°
- Colour: antique pink
- Coating process: PVD



titanium aluminium silicone nitrides

TiAlSiN

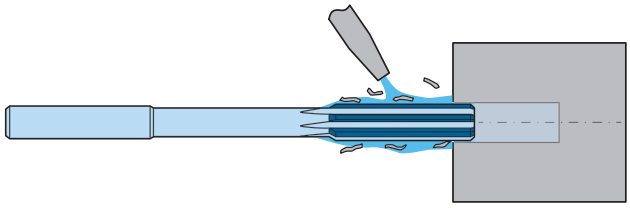
- high-performance cutting for machining very abrasive or hard materials such as steel up to 63 HRC
- very high hardness
- high wear resistance
- Vickers hardness: 3500 HV
- friction coefficient of steel: 0.70
- temperature resistance: 900°
- colour: blue-violet
- coating process: PVD



Flute shapes and applications for reamers

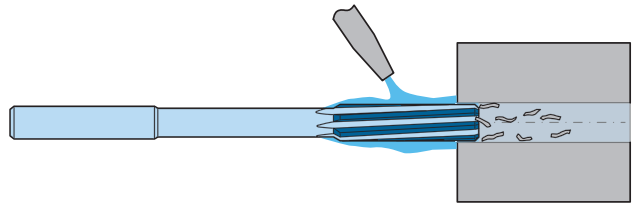
straight flute

- for blind holes
- chips are transported backwards
- larger chip angle



left-twisted flute

- For through-bores
- chips are transported forwards
- better with intermittent cuts
- reduced chip angle



Bore hole allowance when reaming

Allowance range aR	Allowance a (mm) in bore hole diameter:								
	Ø < 5 mm	Ø > 5 mm	Ø > 8 mm	Ø > 10 mm	Ø > 15 mm	Ø > 20 mm	Ø > 30 mm	Ø > 40 mm	Ø 5> 0 mm
A	0,1	0,1	0,1	–	0,1-0,2	0,1-0,2	–	–	–
B	0,1-0,2	0,1-0,2	0,2	0,2	0,20	0,3	0,3	0,4	0,4
C	0,1-0,2	0,2	0,25	0,2	0,3	0,3	0,4	0,4	0,4
D	0,05-0,1	0,05-0,1	0,05-0,1	0,1	0,1	0,1-0,2	–	–	–

	Material		Strength	DIN	Material	Allowance ranges code			
			N/mm²	No.	No.	HSSE	HSSE coated	Solid carbide/ cemented carbide	solid carbide HPC coated
ISO P	**1.**	**Steels**							
	1.1	Free machining steel	< 900	9 S 20	1.0711	B	B	B	A
	1.2	Structural steel	< 500	ST 37-2	1.0037	B	B	B	A
	1.3	Structural steel	> 500	ST 60-2	1.0060	B	B	B	A
	1.4	Heat-treated steel	<1000	42 CrMo 4	1.7225	B	B	B	A
	1.5	Cast steel	<1000	GS-45	1.0446	A	A	A	A
	1.6	Case-hardening steel	<1200	16 MnCr 5	1.7131	A	A	A	A
	1.7	Rust and acid-resistant steel and ferritic, martensitic steel casting	<1100	X 10 Cr 13	1.4006	A	A	A	A
	1.8	Heat-treated steel	>1000	43 CrMo 4	1.3563	A	A	A	A
	1.9	Nitriding steel	<1300	31 CrMoV 9	1.8519	A	A	A	A
	1.10	Tool steel (up to 45 HRC)	<1300	X 38 CrMoV 5 1	1.2343	A	A	A	A
ISO M	**2.**	**Stainless steels**							
	2.1	Rust and acid-resistant steel/austenitic steel casting	<1100	G-X 2 CrNiMo 18 15	1.3953	A	A	A	A
ISO N	**3.**	**Non-ferrous metals**							
	3.1	Aluminium alloy, long-chipping/ wrought alloy/pure metals/magnesium alloy	<500	Al99.9	3.0305	C	C	C	A
	3.2	Aluminium alloys, short-chipping	<500	G - AlSi12	3.2581	C	C	C	A
	3.3	Copper alloy (bronze), long-chipping	<1200	CuSn4	2.1016	C	C	C	A
	3.4	Copper alloy (bronze), short-chipping	<850	CuNi12Zn24	2.0730	C	C	C	A
	3.5	Copper alloy (brass), long-chipping	<600	Cu Zn 20	2.0250	C	C	C	A
	3.6	Copper alloy (brass), short-chipping	<600	Cu Zn 39 Pb 3	2.0381	C	C	C	A
	3.7	Thermoplast	<100	PVC, acrylic glass	–	B	B	B	–
	3.8	Duroplast	<150	Bakelite, melamine	–	B	B	B	–
	3.9	Fibre-reinforced plastics	<1500	CFRP, GFRP	–	B	B	B	–
	3.10	Graphite	<60	C8000	–	–	–	–	–
	3.11	Composite materials	–	–	–	–	–	–	–
ISO K	**4.**	**Cast metal**							
	4.1	Grey cast iron	<260	GG10	0.6010	B	B	B	A
	4.2	Ductile graphite iron	<400	GGG 40	0.7040	B	B	B	A
	4.3	Malleable cast iron	<550	GTW-55	0.8055	B	B	B	A
ISO S	**5.**	**Special alloys**							
	5.1	Titanium alloys	<1200	TiAl5Sn2.5	3.7115	A	A	A	A
	5.2	Nickel-based alloys	<1400	NiCr21Mo	2.4858	B	B	B	A
	5.3	Super alloys	<1300	X45CrSi 9 3	1.4718	B	B	B	A
ISO H	**6.**	**Hard materials**							
	6.1	Hardened materials - 63 HRC	>1300	G-X 260 NiCr 4 2	0.9620	–	–	–	D

Coverable tolerance classes with 1/100 reamers

with 1/100 reamers, available in increments of 0.01 mm, various fit tolerance dimensions can be catered to. the system ranges up to a diameter of 12.10mm. a brief example would be, for instance, a 1/100 reamer 11.03mm capable of producing a fit tolerance of 11.0 F8. further fit tolerance dimensions catered to are shown in the table below.

hole tolerance table for 1/100 machine reamers:

Hole Ø (mm)	C8	C9	C10	C11	CD7	D7	D8	D9	D10	D11	D12	E7	E8	E9	EF8	F7	F8	F9
1,0	1,07	1,07	1,08	1,10	1,04	1,02	1,03	-	1,04	1,06	1,08	1,02	1,02	1,03	1,02	1,01	1,01	1,02
2,0	2,07	2,07	2,08	2,10	2,04	2,02	2,03	-	2,04	2,06	2,08	2,02	2,02	2,03	2,02	2,01	2,01	2,02
3,0	3,07	3,07	3,08	3,10	3,04	3,02	3,03	-	3,04	3,06	3,08	3,02	3,02	3,03	3,02	3,01	3,01	3,02
4,0	4,08	4,09	-	-	4,05	4,04	4,04	4,05	4,06	4,08	4,10	-	4,03	4,04	4,03	-	4,02	4,03
5,0	5,08	5,09	-	-	5,05	5,04	5,04	5,05	5,06	5,08	5,10	-	5,03	5,04	5,03	-	5,02	5,03
6,0	6,08	6,09	-	-	6,05	6,04	6,04	6,05	6,06	6,08	6,10	-	6,03	6,04	6,03	-	6,02	6,03
7,0	7,09	7,10	-	-	7,06	7,05	7,05	7,06	7,08	7,10	-	7,03	7,04	7,05	7,03	7,02	7,03	-
8,0	8,09	8,10	-	-	8,06	8,05	8,05	8,06	8,08	8,10	-	8,03	8,04	8,05	8,03	8,02	8,03	-
9,0	9,09	9,10	-	-	9,06	9,05	9,05	9,06	9,08	9,10	-	9,03	9,04	9,05	9,03	9,02	9,03	-
10,0	10,09	10,10	-	-	10,06	10,05	10,05	10,06	10,08	10,10	-	10,03	10,04	10,05	10,03	10,02	10,03	-
11,0	-	-	-	-	-	11,06	-	11,08	11,10	-	-	11,04	11,05	11,06	-	-	11,03	11,04
12,0	-	-	-	-	-	12,06	-	12,08	12,10	-	-	12,04	12,05	12,06	-	-	12,03	12,04

Hole Ø (mm)	F10	G6	G7	H5	H6	H7	H8	H9	H10	H11	H12	H13	J6	J7	JS7	J8	JS8	JS9
1,0	-	-	1,01	1,00	1,00	-	1,01	-	1,02	1,04	1,06	1,09	1,00	1,00	1,00	1,00	1,00	1,00
2,0	-	-	2,01	2,00	2,00	-	2,01	-	2,02	2,04	2,06	2,09	2,00	2,00	2,00	2,00	2,00	2,00
3,0	-	-	3,01	3,00	3,00	-	3,01	-	3,02	3,04	3,06	3,09	3,00	3,00	3,00	3,00	3,00	3,00
4,0	4,04	4,01	4,01	4,00	4,00	-	4,01	4,02	4,03	4,05	4,08	-	4,00	4,00	4,00	4,00	4,00	4,00
5,0	5,04	5,01	5,01	5,00	5,00	-	5,01	5,02	5,03	5,05	5,08	-	5,00	5,00	5,00	5,00	5,00	5,00
6,0	6,04	6,01	6,01	6,00	6,00	-	6,01	6,02	6,03	6,05	6,08	-	6,00	6,00	6,00	6,00	6,00	6,00
7,0	7,05	7,01	7,01	7,00	7,00	7,01	7,01	7,02	7,04	7,06	7,10	-	7,00	7,00	7,00	7,00	7,00	-
8,0	8,05	8,01	8,01	8,00	8,00	8,01	8,01	8,02	8,04	8,06	8,10	-	8,00	8,00	8,00	8,00	8,00	-
9,0	9,05	9,01	9,01	9,00	9,00	9,01	9,01	9,02	9,04	9,06	9,10	-	9,00	9,00	9,00	9,00	9,00	-
10,0	10,05	10,01	10,01	10,00	10,00	10,01	10,02	10,02	10,04	10,06	10,10	-	10,00	10,00	10,00	10,00	10,00	-
11,0	11,06	11,01	-	11,00	-	11,01	11,02	11,03	11,05	11,07	-	-	11,00	11,00	11,00	11,00	11,00	-
12,0	12,06	12,01	-	12,00	-	12,01	12,02	12,03	12,05	12,07	-	-	12,00	12,00	12,00	12,00	12,00	-

Hole Ø (mm)	K6	K7	K8	M6	M7	M8	N6	N7	N8	P6	P7	P8	R6	R7	S6	S7	U6	U7
1,0	-	-	0,99	-	-	0,99	0,99	0,99	0,99	0,99	0,99	0,99	-	-	0,98	0,98	0,98	0,98
2,0	-	-	1,99	-	-	1,99	1,99	1,99	1,99	1,99	1,99	1,99	-	-	1,98	1,98	1,98	1,98
3,0	-	-	2,99	-	-	2,99	2,99	2,99	2,99	2,99	2,99	2,99	-	-	2,98	2,98	2,98	2,98
4,0	4,00	4,00	4,00	3,99	-	3,99	3,99	3,99	3,99	-	-	3,98	-	-	3,98	3,98	-	-
5,0	5,00	5,00	5,00	4,99	-	4,99	4,99	4,99	4,99	-	-	4,98	-	-	4,98	4,98	-	-
6,0	6,00	6,00	6,00	5,99	-	5,99	5,99	5,99	5,99	-	-	5,98	-	-	5,98	5,98	-	-
7,0	-	7,00	7,00	6,99	6,99	6,99	-	6,99	6,99	-	-	-	6,98	6,98	-	-	6,97	6,97
8,0	-	8,00	8,00	7,99	7,99	7,99	-	7,99	7,99	-	-	-	7,98	7,98	-	-	7,97	7,97
9,0	-	9,00	9,00	8,99	8,99	8,99	-	8,99	8,99	-	-	-	8,98	8,98	-	-	8,97	8,97
10,0	-	10,00	10,00	9,99	9,99	9,99	-	9,99	9,99	-	-	-	9,98	9,98	-	-	9,97	9,97
11,0	-	11,00	11,00	10,99	10,99	10,99	-	10,99	10,99	10,98	10,98	10,97	-	-	10,97	10,97	-	-
12,0	-	12,00	12,00	11,99	11,99	11,99	-	11,99	11,99	11,98	11,98	11,97	-	-	11,97	11,97	-	-

Hole Ø (mm)	X7	X8	X9	Z7	Z8	Z9	Z10	ZA7	ZA8	ZA9	ZB8	ZB9						
1,0	-	0,97	0,97	0,97	0,97	-	0,96	0,96	-	-	0,95	0,95						
2,0	-	1,97	1,97	1,97	1,97	-	1,96	1,96	-	-	1,95	1,95						
3,0	-	2,97	2,97	2,97	2,97	-	2,96	2,96	-	-	2,95	2,95						
4,0	3,97	-	3,96	3,96	3,96	3,95	3,95	3,96	-	-	3,94	3,94						
5,0	4,97	-	4,96	4,96	4,96	4,95	4,95	4,96	-	-	4,94	4,94						
6,0	5,97	-	5,96	5,96	5,96	5,95	5,95	5,96	-	-	5,94	5,94						
7,0	-	6,96	6,95	6,96	6,95	-	6,94	6,94	6,94	-	-	6,92						
8,0	-	7,96	7,95	7,96	7,95	-	7,94	7,94	7,94	-	-	7,92						
9,0	-	8,96	8,95	8,96	8,95	-	8,94	8,94	8,94	-	-	8,92						
10,0	-	9,96	9,95	9,96	9,95	-	9,94	9,94	9,94	-	-	9,92						
11,0	10,96	10,95	-	10,95	10,94	-	10,93	-	10,93	-	10,90	10,90						
12,0	11,96	11,95	-	11,95	11,94	-	11,93	-	11,93	-	11,90	11,90						

clamping device recommendation for reaming



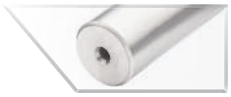
	standard collet chucks	precision collet chucks	shrink-fit chucks	hydro-expansion chucks
				
concentricity	◎	●	●	●
vibration-reducing	◎	◎	○	●
speed/balancing quality	◎	●	●	●
internal cooling	yes	yes	yes	yes
flexibility	●	●	○	●
overall rating	**limited suitability**	**highly suitable**	**well suited**	**highly suitable**

● = very well suited ◎ = suitable ○ = limited suitability

HPC machine reamers
for series applications on modern machining centres

Application:
For serial production of fit tolerances on modern CNC machines with robust clamping of tool and workpiece.

advantage:
- innovative cutting geometry ensures very high dimensional stability and process reliability at very high cutting parameters
- high-quality cemented carbide cutting material and coating make for a very long service life
- innovative coating technology ensures an increased service life
- internal cooling ensures optimal transport of chips
- wide range with specialists for the most common materials
- diameter and tolerance can be ordered individually with short delivery times
- HPC reamers available as H7, 1/100 mm and special reamers
- all geometries available for through hole and blind hole machining


H7 | 0,001 | 0,00X | VHM

		Ø	Cutting material	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11781050-286	High-performance reamer, solid carbide, TiALN With cast steel geometry for use up to 1300 N/mm²	3.97-20.0 mm	VHM	●	●			●			
11781350-586	High-performance reamer, solid carbide TiALN With cast steel geometry for use up to 1300 N/mm²	3.97-20.0 mm	VHM	●	●			●			
11781604-628	High-performance reamer, solid carbide TiALN (fit tolerance and diameter can be selected) With cast steel geometry for use up to 1300 N/mm²	3.80-20.20 mm	VHM	●	●			●			
11781633-657	High-performance reamer, solid carbide TiALN (fit tolerance and diameter can be selected) With cast steel geometry for use up to 1300 N/mm²	3.80-20.20 mm	VHM	●	●			●			
11783604-628	High-performance reamer, solid carbide TiALN (fit tolerance and diameter can be selected) for use in stainless steels	3.80-20.20 mm	VHM			●	◎				
11783633-657	High-performance reamer, solid carbide TiALN (fit tolerance and diameter can be selected) for use in stainless steels	3.80-20.20 mm	VHM			●	◎				
11784604-628	High-performance reamer, solid carbide, TiALN (fit and diameter may be selected) For use in hardened steels up to 63 HRC	3.80-20.20 mm	VHM							●	
11734200-292	Solid carbide TiALCN high-performance reamer for universal use up to 1300N/mm²	3.97-20.0 mm	VHM	●	●			●			
11737200-288	Solid carbide TiALCN high-performance reamer for universal use up to 1300N/mm²	3.97-20.0 mm	VHM	●	●			●			

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

solid carbide machine reamers H7
For demanding serial users

Application:
For cutting H7 fit tolerances on conventional machines and CNC machines.

advantage:
- universal range of diameters from 1.00 mm to 20.00 mm
- various types of reamers
- very long service life
- high cutting values can be realised
- precisely ground in accordance with DIN 1420
- more dimensions available on request



H7

VHM

		Ø	Cutting material	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 65HRC	
11784700-800	SC TiAlSiN reamer For high-strength steels and hard machining up to 63 HRC	2.97-12.03 mm	VHM	○	●	○		○		●	
11726010-200	NC machine reamer, solid carbide with universal shank for universal use up to 1300N/mm²	1.0-20.0 mm	VHM	●	●	○	●	●	●		
11770020-120	NC machine reamer, solid carbide For universal use up to 1300 N/mm²	2.0-12.0 mm	VHM	●	●	○	●	●	●		
11772330-500	Automatic machine reamers, solid carbide For universal use up to 1300 N/mm²	3.0-20.0 mm	VHM	●	●	○	●	●	●		
11772630-800	Automatic machine reamers, solid carbide For universal use up to 1300 N/mm²	3.0-20.0 mm	VHM	●	●	○	●	●	●		
11744050-200	Carbide machine reamer for universal use up to 1300N/mm²	5.0-20.0 mm	Carbide	●	●	○	●	●	●		
11779	machine reamer HM for universal use up to 1300 N/mm²	5.0-32.0 mm	Carbide	●	●	○	●	●	●		

solid carbide machine reamers 1/100 mm
For demanding serial users

application:
for cutting high-precision fit tolerances (0/+0.003 mm) on conventional machines and CNC machines.

advantage:
- covers a wide range of tolerances
- manufacture of special reamers not required
- in stock
- high cutting values can be realised
- universal range of diameters from 0.90 mm to 12.03 mm
- tight tolerance for high precision (0/+0.003 mm)
- very long service life through high-quality cemented carbide cutting material



0,001

VHM

		Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11730	NC machine reamer, solid carbide, with uniform shank for universal use up to 1300 N/mm²	0.9-12.03 mm	VHM	●	●	●	○	●	●	●	

HSSE machine reamers H7

Application:
For cutting H7 fit tolerances on conventional machines and CNC machines.

advantage:
- universal range of diameters from 1.00 mm to 40.00 mm
- various types of reamers
- very long service life
- precisely ground in accordance with DIN 1420
- coated versions for higher cutting values
- more dimensions available on request



H7

HSSE

		Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11628010-027	NC machine reamer HSSE with straight shank For universal use up to 1000 N/mm²	1.0-2.7 mm	HSSE	●	●	○	○	○	●	○	
11628028-200	NC machine reamer HSSE with straight shank For universal use up to 1000 N/mm²	20.0-2.8 mm	HSSE	●	●	○	○	○	●	○	
11630010-025	Machine reamer HSSE for universal use up to 1000N/mm²	1.0-2.5 mm	HSSE	●	●	○	○	○	●	○	
11630030-200	Machine reamer HSSE for universal use up to 1000N/mm²	3.0-20.0 mm	HSSE	●	●	○	○	○	●	○	
11628330-420	NC machine reamer HSSE-TiN with straight shank For universal use up to 1300 N/mm²	3.0-12.0 mm	HSSE	●	●	●	○	○	●	○	
11628630-720	NC machine reamer HSSE-TiALN with straight shank For universal use up to 1300 N/mm²	3.0-12.0 mm	HSSE	●	●	○	○	○	●	○	
11626040-200	HSSE automated machine reamer for universal use up to 1000N/mm²	4.0-20.0 mm	HSSE	●	●	○	○	○	●	○	
11627020-120	Machine reamer, extra-long, HSSE for universal use up to 1000N/mm²	2.0-12.0 mm	HSSE	●	●	○	○	○	●	○	
11646030-120	Machine bottoming reamer, HSSE For universal use up to 1000 N/mm²	3.0-12.0 mm	HSSE	●	●	○	○	○	●	○	
11643125-300	Machine reamer, extra-long, HSSE for universal use up to 1000N/mm²	12.0-30.0 mm	HSSE	●	●	○	○	○	●	○	
11642030-400	Machine reamer HSSE for universal use up to 1000N/mm²	3.0-40.0 mm	HSSE	●	●	○	○	○	●	○	

HSSE machine reamers 1/100 mm

application:
for cutting high-precision fit tolerances (0/+0.003 mm) on conventional machines and CNC machines.

advantage:
- covers a wide range of tolerances
- manufacture of special reamers not required
- in stock
- universal range of diameters from 0.90 mm to 12.03 mm
- tight tolerance for high precision (0/+0.003 mm)
- cheaper alternative to solid carbide tools



0,001

HSSE

		Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11624100-203	NC machine reamer 1/100 mm HSSE with universal shaft For universal use up to 1000 N/mm²	1.0-2.03 mm	HSSE	●	●	○	○	○	●	○	
11624298-019	HSSE NC machine reamer 1/100 mm with uniform shank For universal use up to 1000 N/mm²	2.47-12.03 mm	HSSE	●	●	○	○	○	●	○	

solid carbide machine reamers with selectable diameter and fit
For demanding serial users

application:
for cutting individually selectable fit tolerances on conventional machines and CNC machines.

advantage:
- wide range of diameters from 0.95 mm to 20.00 mm
- individually selectable diameter and tolerance
- short delivery times
- high cutting values can be realised
- very long service life
- precisely ground in accordance with DIN 1420
- universal application



0,00X

VHM

		Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11730950-987	NC machine reamer, solid carbide, with uniform shank **(fit tolerance and diameter can be selected)** for universal use up to 1300 N/mm²	0.95-20.02 mm	VHM	●	●	●	○	●	●	●	
11731500-576	NC machine reamer, solid carbide, with uniform shank **(diameter can be selected)** for universal use up to 1300 N/mm²	0.95-12.20 mm	VHM	●	●	●	○	●	●	●	
11731500-576	NC machine reamer, solid carbide, with uniform shank **(diameter can be selected)** for universal use up to 1300 N/mm²	0.95-12.05 mm	VHM	●	●	●	○	●	●	●	

HSSE machine reamers with selectable diameter and fit

application:
for cutting individually selectable fit tolerances on conventional machines and CNC machines.

advantage:
- wide range of diameters from 0.95 mm to 20.00 mm
- individually selectable diameter and tolerance
- short delivery times
- very long service life
- precisely ground in accordance with DIN 1420
- universal application



0,00X

HSSE

		Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11624911-995	HSSE NC machine reamer with uniform shank **(fit tolerance and diameter can be selected)** For universal use up to 1000 N/mm²	0.95-20.0 mm	HSSE	●	●	○	○	○	●	○	
11625500-564	HSSE NC machine reamer with uniform shank **(diameter can be selected)** for universal use up to 1000 N/mm²	0.95-12.05 mm	HSSE	●	●	○	○	○	●	○	

HSS / HSSE rivet hole reamers and machine taper reamers

application:
for the production of conical tolerances for tapered pins and rivet holes on conventional and CNC machines.

advantage:
- wide range
- very good surfaces can be achieved
- various shaft variants
- very high feed rates can be realised
- further dimensions available on request





HSS

HSSE

		Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11670100-300	Rivet hole reamer, HSS for universal use up to 1000N/mm²	10.0-30.0 mm	HSS	●	●	○	○	○	●	○	
11674	Machine taper shell reamer HSS 1:50 For universal use up to 1000 N/mm²	1.5-12.0 mm	HSSE	●	●	○	○	○	●	○	
11678	Machine taper shell reamer HSS 1:50 For universal use up to 1000 N/mm²	1.5-12.0 mm	HSSE	●	●	○	○	○	●	○	
11675	Machine taper shell reamer HSS 1:50 for universal use up to 1000 N/mm²	8.0-25.0 mm	HSS	●	●	○	○	○	●	○	

HSS hand reamers

application:
for manually producing H7 or 1/100 tolerances and reworking existing tolerances

advantage:
- cost-effective alternative for manual work
- longer threaded start to correctly align the reamer
- Adjustable variants
- straight and spiralised versions
- square shaft serves as carrier
- universal application




HSS | H7 | 0,001

		Ø	Cutting material	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
11602	HSS hand reamer for universal use up to 1000N/mm²	1.5-40.0 mm	HSS	●	●	○	○	○	○	○	
11603	HSS hand reamer for universal use up to 1000N/mm²	2.0-20.0 mm	HSS	●	●	○	○	○	○	○	
11604	HSS hand reamer for universal use up to 1000N/mm²	1.5-40.0 mm	HSS	●	●	○	○	○	○	○	
11606	Adjustable HSS hand reamer for universal use up to 1000N/mm²	6.0-30.0 mm	HSS	●	●	○	○	○	○	○	
11610	Quick-adjust-ment reamer for universal use up to 1000N/mm²	6.4-55.0 mm	HSS	●	●	○	○	○	○	○	
11672015-120	HSS hand taper reamers 1:50 for universal use up to 1000N/mm²	1.5-12.0 mm	HSS	●	●	○	○	○	○	○	
11673030-200	HSS hand taper reamers 1:50 for universal use up to 1000N/mm²	3.0-20.0 mm	HSS	●	●	○	○	○	○	○	
11672301-328	HSS hand taper reamers 1:10 for universal use up to 1000N/mm²	3.0-45.0 mm	HSS	●	●	○	○	○	○	○	
11673301-328	ATORN hand taper reamer HSS 1:10, spiral	3.0-45.0 mm	HSS	●	●	○	○	○	○	○	

HPC machine reamers
for series applications on modern machining centres

Application:
For serial production of fit tolerances on modern CNC machines with robust clamping of tool and workpiece.

advantage:
- innovative cutting geometry ensures very high dimensional stability and process reliability at very high cutting parameters
- high-quality cemented carbide cutting material and coating make for a very long service life
- innovative coating technology ensures an increased service life
- internal cooling ensures optimal transport of chips
- wide range with specialists for the most common materials
- diameter and tolerance can be ordered individually with short delivery times
- HPC reamers available as H7, 1/100 mm and special reamers
- all geometries available for through hole and blind hole machining





H7 | 0,001 | 0,00X | VHM

ATORN® Solid carbide TiALN high-performance reamer

for universal use up to 1300N/mm²

VHM | TiAlN | 0,001 | H7 | HPC | ≈7–8° | 0° | HA | IK



Ident. No. 050–286



Ident. No. 350–586

Application:

Ident. No. 050–286: for cutting fit tolerances **in through holes** on modern CNC machines with steady tool and workpiece clamping up to 1300 N/mm².

Ident. No. 350–586: for cutting fit tolerances **in blind holes** on modern CNC machines with steady tool and workpiece clamping up to 1300 N/mm².

Execution:

- **Ident. No. 050–286:** 7-8° left-hand spiral and extremely variable pitch, **type B**
- **Ident. No. 350–586:** straight-grooved and extremely variable pitch, **type A**

Advantage:

- innovative cutting geometry ensures excellent dimensional accuracy and process reliability for very high cutting parameters
- high-quality solid carbide cutting material and coating ensure a very long service life
- **Ident. No. 050–286:** Internal cooling ensures optimum chip removal
- **Ident. No. 350–586:** inner cooling ensures optimum transport of chippings

Notes:

Make sure that tools are accurately and tightly clamped (ideally use a hydro-mechanical clamping chuck or precision collet chuck).

Note: Please refer to dimension table.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11781050-286	135	125	120											100					
11781350-586	135	125	120											100					

							Groove type	Left-hand twist, 7-8°		Straight	
mm		mm	mm	mm	mm		f steel 1300 ● (mm/U)	11781... Ident. No.		11781... Ident. No.	
3.97	0 / +0,004 mm	75	12	36	6	4	0.3	050	●	350	●
3.98	0 / +0,004 mm	75	12	36	6	4	0.3	054	●	354	●
3.99	0 / +0,004 mm	75	12	36	6	4	0.3	058	●	358	●
4	H7	75	12	36	6	4	0.3	062	●	362	●
4.01	0 / +0,004 mm	75	12	36	6	4	0.3	066	●	366	●
4.02	0 / +0,004 mm	75	12	36	6	4	0.3	070	●	370	●
4.03	0 / +0,004 mm	75	12	36	6	4	0.3	074	●	374	●
4.5	H7	75	12	36	6	4	0.4	078	●	378	●
4.97	0 / +0,004 mm	75	12	37	6	4	0.4	082	●	382	●
4.98	0 / +0,004 mm	75	12	37	6	4	0.4	086	●	386	●
4.99	0 / +0,004 mm	75	12	37	6	4	0.4	090	●	390	●
5	H7	75	12	37	6	4	0.4	094	●	394	●
5.01	0 / +0,004 mm	75	12	37	6	4	0.4	098	●	398	●
5.02	0 / +0,004 mm	75	12	37	6	4	0.4	102	●	402	●
5.03	0 / +0,004 mm	75	12	37	6	4	0.4	106	●	406	●
5.5	H7	75	12	37	6	4	0.4	110	●	410	●
5.97	0 / +0,005 mm	75	12	37	6	4	0.4	114	●	414	●
5.98	0 / +0,005 mm	75	12	37	6	4	0.4	118	●	418	●
5.99	0 / +0,005 mm	75	12	37	6	4	0.4	122	●	422	●
6	H7	75	12	37	6	4	0.4	126	●	426	●
6.01	0 / +0,005 mm	75	12	37	6	4	0.4	130	●	430	●
6.02	0 / +0,005 mm	75	12	37	6	4	0.4	134	●	434	●
6.03	0 / +0,005 mm	75	12	37	6	4	0.4	138	●	438	●
6.5	H7	100	16	62	8	6	0.4	140	●	440	●
7	H7	100	16	62	8	6	0.4	142	●	442	●
7.5	H7	100	16	62	8	6	0.4	146	●	446	●
7.97	0 / +0,005 mm	100	16	62	8	6	0.4	150	●	450	●
7.98	0 / +0,005 mm	100	16	62	8	6	0.4	154	●	454	●
7.99	0 / +0,005 mm	100	16	62	8	6	0.4	158	●	458	●
8	H7	100	16	62	8	6	0.4	162	●	462	●
8.01	0 / +0,005 mm	100	16	62	8	6	0.4	166	●	466	●
8.02	0 / +0,005 mm	100	16	62	8	6	0.4	170	●	470	●
8.03	0 / +0,005 mm	100	16	62	8	6	0.4	174	●	474	●
8.5	H7	100	20	57	10	6	0.6	178	●	478	●
9	H7	100	20	58	10	6	0.6	182	●	482	●
9.5	H7	120	20	78	10	6	0.6	186	●	486	●
9.97	0 / +0,005 mm	120	20	78	10	6	0.6	190	●	490	●
9.98	0 / +0,005 mm	120	20	78	10	6	0.6	194	●	494	●
9.99	0 / +0,005 mm	120	20	78	10	6	0.6	198	●	498	●
10	H7	120	20	78	10	6	0.6	202	●	502	●
10.01	0 / +0,005 mm	120	20	78	10	6	0.6	206	●	506	●
10.02	0 / +0,005 mm	120	20	78	10	6	0.6	210	●	510	●
10.03	0 / +0,005 mm	120	20	78	10	6	0.6	214	●	514	●
10.5	H7	120	20	72	12	6	0.6	218	●	518	●
11	H7	120	20	73	12	6	0.6	222	●	522	●
11.5	H7	120	20	73	12	6	0.6	226	●	526	●
11.97	0 / +0,005 mm	120	20	73	12	6	0.6	230	●	530	●
11.98	0 / +0,005 mm	120	20	73	12	6	0.6	234	●	534	●
11.99	0 / +0,005 mm	120	20	73	12	6	0.6	238	●	538	●
12	H7	120	20	73	12	6	0.6	242	●	542	●
12.01	0 / +0,005 mm	120	20	73	12	6	0.6	246	●	546	●
12.02	0 / +0,005 mm	120	20	73	12	6	0.6	250	●	550	●
12.03	0 / +0,005 mm	120	20	73	12	6	0.6	254	●	554	●
13	H7	130	22	82	14	6	0.7	258	●	558	●
14	H7	130	22	83	14	6	0.8	262	●	562	●
15	H7	150	22	99	16	6	0.8	266	●	566	●
16	H7	150	25	100	16	6	1	270	●	570	●
17	H7	150	25	99	18	8	1	274	●	574	●
18	H7	150	25	100	18	8	1	278	●	578	●
19	H7	150	25	97	20	8	1	282	●	582	●
20	H7	150	25	98	20	8	1	286	●	586	●

Prod. Gr. 1BK

ATORN® High-performance reamer, solid carbide, TiALN (fit tolerance and diameter may be selected)

for universal use up to 1300N/mm²

VHM | TiAlN | 0,00X | HPC | ≈7–8° | 0° | IK | HA



Ident. No. 604–628



Ident. No. 633–657

Application:
Ident. No. 604–628: for cutting fit tolerances **in through holes** on modern CNC machines with steady tool and workpiece clamping up to 1300 N/mm².
Ident. No. 633–657: for cutting fit tolerances **in blind holes** on modern CNC machines with steady tool and workpiece clamping up to 1300 N/mm².

Execution:
- **Ident. No. 604–628:** 7-8° left-hand spiral, with internal cooling, **type B**
- **Ident. No. 633–657:** Straight-grooved, with internal cooling, **type A**

Advantage:
- innovative cutting geometry ensures excellent dimensional accuracy and process reliability for very high cutting parameters
- high-quality solid carbide cutting material and coating
- inner cooling ensures optimum transport of chippings

Notes:
Make sure that tools are accurately and tightly clamped (ideally use a hydro-mechanical clamping chuck or precision collet chuck). When ordering, specify the desired fit and diameter (e.g. 8.05 H7)
Note! Please refer to dimension table.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11781604-628	135	125	120											100					
11781633-657	135	125	120											100					

								Groove type	Left-hand twist, 7-8°		Straight	
mm		mm	mm	mm	M		f steel 1300 ● (mm/U)		11781... Ident. No.		11781... Ident. No.	
3.80-4.20 mm	Optional	75	12	36	6	4	0.3		604	○	633	○
4.21-4.70 mm	Optional	75	12	36	6	4	0.3		605	○	634	○
4.71-5.20 mm	Optional	75	12	37	6	4	0.3		606	○	635	○
5.21-5.70 mm	Optional	75	12	37	6	4	0.4		607	○	636	○
5.71-6.20 mm	Optional	75	12	37	6	4	0.4		608	○	637	○
6.21-6.70 mm	Optional	100	16	62	8	6	0.4		609	○	638	○
6.71-7.20 mm	Optional	100	16	62	8	6	0.4		610	○	639	○
7.21-7.70 mm	Optional	100	16	62	8	6	0.4		611	○	640	○
7.71-8.20 mm	Optional	100	16	62	8	6	0.4		612	○	641	○
8.21-8.70 mm	Optional	100	20	57	10	6	0.6		613	○	642	○
8.71-9.20 mm	Optional	100	20	58	10	6	0.6		614	○	643	○
9.21-9.70 mm	Optional	120	20	78	10	6	0.6		615	○	644	○
9.71-10.20 mm	Optional	120	20	78	10	6	0.6		616	○	645	○

								Groove type	Left-hand twist, 7-8°		Straight	
mm		mm	mm	mm	M		f steel 1300 ● (mm/U)		11781... Ident. No.		11781... Ident. No.	
10.21-10.70 mm	Optional	120	20	72	12	6	0.6		617	○	646	○
10.71-11.20 mm	Optional	120	20	73	12	6	0.6		618	○	647	○
11.21-11.70 mm	Optional	120	20	73	12	6	0.6		619	○	648	○
11.71-12.20 mm	Optional	120	20	73	12	6	0.6		620	○	649	○
12.21-13.20 mm	Optional	130	22	82	14	6	0.7		621	○	650	○
13.21-14.20 mm	Optional	130	22	83	14	6	0.7		622	○	651	○
14.21-15.20 mm	Optional	150	22	99	16	6	0.8		623	○	652	○
15.21-16.20 mm	Optional	150	25	100	16	6	0.8		624	○	653	○
16.21-17.20 mm	Optional	150	25	99	18	8	1		625	○	654	○
17.21-18.20 mm	Optional	150	25	100	18	8	1		626	○	655	○
18.21-19.20 mm	Optional	150	25	97	20	8	1		627	○	656	○
19.21-20.20 mm	Optional	150	25	98	20	8	1		628	○	657	○

Prod. Gr. 1BK

ATORN® Solid carbide TiALN high-performance reamer (fit tolerance and diameter can be selected)

For use on stainless steels

VHM | TiAlN | 0,00X | HPC VA | ≈7–8° | 0° | IK | HA



Ident. No. 604–628



Ident. No. 633–657

Application:
Ident. No. 604–628: for cutting fit tolerances **in through holes** on modern CNC machines with steady tool and workpiece clamping, in stainless steel.
Ident. No. 633–657: for cutting fit tolerances **in blind holes** on modern CNC machines with steady tool and workpiece clamping, in stainless steels.

Execution:
- **Ident. No. 604–628:** 7-8° left-hand spiral, with internal cooling, **type B**
- **Ident. No. 633–657:** Straight-grooved, with internal cooling, **type A**

Advantage:
- innovative cutting geometry ensures excellent dimensional accuracy and process reliability for very high cutting parameters
- high-quality solid carbide cutting material and coating ensure a very long service life
- **Ident. No. 604–628:** Internal cooling ensures optimum chip removal
- **Ident. No. 633–657:** inner cooling ensures optimum transport of chippings

Notes:
Ident. No. 604–628: Make sure that tools are accurately and tightly clamped (ideally use a hydro-mechanical clamping chuck or precision collet chuck). When ordering, specify the desired fit and diameter (e.g. 8.05 H7)
Note: Please refer to dimension table.
Ident. No. 633–657: Make sure that tools are accurately and tightly clamped (ideally use a hydro-mechanical clamping chuck or precision collet chuck). When ordering, specify the desired fit and diameter (e.g. 8.05 H7)
Note! Please refer to dimension table.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11783604-628				35	30	60	70	50	60	50	60				15				
11783633-657				35	30	60	70	50	60	50	60				15				

							Groove type	Left-hand twist, 7-8°		Straight	
mm		mm	mm	mm	h6 mm	z	f steinl. st. ● (mm/U)	11783... Ident. No.		11783... Ident. No.	
3.80-4.20 mm	Optional	75	12	36	6	4	0.1	604	○	633	○
4.21-4.70 mm	Optional	75	12	36	6	4	0.1	605	○	634	○
4.71-5.20 mm	Optional	75	12	37	6	4	0.1	606	○	635	○
5.21-5.70 mm	Optional	75	12	37	6	4	0.1	607	○	636	○
5.71-6.20 mm	Optional	75	12	37	6	4	0.1	608	○	637	○
6.21-6.70 mm	Optional	100	16	62	8	6	0.1	609	○	638	○
6.71-7.20 mm	Optional	100	16	62	8	6	0.1	610	○	639	○
7.21-7.70 mm	Optional	100	16	62	8	6	0.15	611	○	640	○
7.71-8.20 mm	Optional	100	16	62	8	6	0.15	612	○	641	○
8.21-8.70 mm	Optional	100	20	57	10	6	0.15	613	○	642	○
8.71-9.20 mm	Optional	100	20	58	10	6	0.15	614	○	643	○
9.21-9.70 mm	Optional	120	20	78	10	6	0.15	615	○	644	○
9.71-10.20 mm	Optional	120	20	78	10	6	0.2	616	○	645	○
10.21-10.70 mm	Optional	120	20	72	12	6	0.2	617	○	646	○
10.71-11.20 mm	Optional	120	20	73	12	6	0.2	618	○	647	○
11.21-11.70 mm	Optional	120	20	73	12	6	0.2	619	○	648	○
11.71-12.20 mm	Optional	120	20	73	12	6	0.2	620	○	649	○
12.21-13.20 mm	Optional	130	22	82	14	6	0.2	621	○	650	○
13.21-14.20 mm	Optional	130	22	83	14	6	0.2	622	○	651	○
14.21-15.20 mm	Optional	150	22	99	16	6	0.2	623	○	652	○
15.21-16.20 mm	Optional	150	25	100	16	6	0.3	624	○	653	○
16.21-17.20 mm	Optional	150	25	99	18	8	0.3	625	○	654	○
17.21-18.20 mm	Optional	150	25	100	18	8	0.3	626	○	655	○
18.21-19.20 mm	Optional	150	25	97	20	8	0.3	627	○	656	○
19.21-20.20 mm	Optional	150	25	98	20	8	0.4	628	○	657	○

Prod. Gr. 1BK

ATORN® High-performance reamer, solid carbide, TiALN (fit tolerance and diameter may be selected)

For use on hardened steels up to 63 HRC





Application:
for cutting fit tolerances **in through holes and blind holes** on modern CNC machines with steady tool and workpiece clamping up to 63HRC.

Execution:
- Straight-grooved, **type A**

Advantage:
- innovative cutting geometry ensures excellent dimensional accuracy and process reliability for very high cutting parameters
- High-quality solid carbide cutting material and coating ensure a very long service life
- Radial internal cooling ensures optimum chip removal

Notes:
Make sure that tools are accurately and tightly clamped (ideally use a hydro-mechanical clamping chuck or precision collet chuck). When ordering, specify the desired fit and diameter (e.g. 8.05 H7)
Note: Please refer to dimension table.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11784604-628																		14	10

							Groove type	Straight	
mm		mm	mm	mm	h6 mm	z	f hard 65 HRC ● (mm/U)	11784... Ident. No.	
3.80-4.20 mm	Optional	75	12	36	6	4	0.05	604	○
4.21-4.70 mm	Optional	75	12	36	6	4	0.05	605	○
4.71-5.20 mm	Optional	75	12	37	6	4	0.05	606	○
5.21-5.70 mm	Optional	75	12	37	6	4	0.08	607	○
5.71-6.20 mm	Optional	75	12	37	6	4	0.08	608	○
6.21-6.70 mm	Optional	100	16	62	8	6	0.08	609	○
6.71-7.20 mm	Optional	100	16	62	8	6	0.08	610	○
7.21-7.70 mm	Optional	100	16	62	8	6	0.08	611	○
7.71-8.20 mm	Optional	100	16	62	8	6	0.08	612	○
8.21-8.70 mm	Optional	100	20	57	10	6	0.1	613	○
8.71-9.20 mm	Optional	100	20	58	10	6	0.1	614	○
9.21-9.70 mm	Optional	120	20	78	10	6	0.12	615	○
9.71-10.20 mm	Optional	120	20	78	10	6	0.12	616	○
10.21-10.70 mm	Optional	120	20	72	12	6	0.12	617	○
10.71-11.20 mm	Optional	120	20	73	12	6	0.15	618	○
11.21-11.70 mm	Optional	120	20	73	12	6	0.15	619	○
11.71-12.20 mm	Optional	120	20	73	12	6	0.15	620	○
12.21-13.20 mm	Optional	130	22	82	14	6	0.15	621	○
13.21-14.20 mm	Optional	130	22	83	14	6	0.15	622	○

mm		mm	mm	mm	mm	z	Groove type f hard 65 HRC ● (mm/U)	Straight 11784... Ident. No.	
14.21-15.20 mm	Optional	150	22	99	16	6	0.15	623	○
15.21-16.20 mm	Optional	150	25	100	16	6	0.15	624	○
16.21-17.20 mm	Optional	150	25	99	18	8	0.15	625	○
17.21-18.20 mm	Optional	150	25	100	18	8	0.16	626	○
18.21-19.20 mm	Optional	150	25	97	20	8	0.16	627	○
19.21-20.20 mm	Optional	150	25	98	20	8	0.16	628	○

Prod. Gr. 1BK

ATORN® NC machine reamer, solid carbide with uniform shank (DIN Similar to 8093)

For universal use up to 1300 N/mm2





Application:
For producing H7 fit tolerances in through holes on NC machines up to 1300 N/mm².

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Execution:
- 7-8° left-hand spiral, type B

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11726010-200	18	15	12	10	8	20	20	20	20	18	16	18		12	8	8	6		

mm		mm	mm	mm	mm	z	f steel 1300 ● (mm/U)	11726... Ident. No.	
1	H7	34	6	20	1	3	0.12	010	●
1.5	H7	40	8	24	2	3	0.12	015	●
1.6	H7	43	9	25	2	3	0.12	016	●
1.7	H7	43	9	25	2	4	0.12	017	●
1.8	H7	46	10	28	2	4	0.12	018	●
1.9	H7	46	10	28	2	4	0.12	019	●
2	H7	49	11	29	2	4	0.12	020	●
2.1	H7	49	11	29	2	4	0.12	021	●
2.2	H7	53	12	32	3	4	0.12	022	●
2.3	H7	53	12	32	3	4	0.12	023	●
2.4	H7	57	14	34	3	4	0.12	024	●
2.5	H7	57	14	34	3	4	0.12	025	●
2.6	H7	57	15	41	3	4	0.12	026	●
2.7	H7	57	15	41	3	4	0.12	027	●
2.8	H7	61	15	41	3	6	0.12	028	●
2.9	H7	61	15	41	3	6	0.12	029	●
3	H7	61	15	41	3	6	0.12	030	●
3.1	H7	65	16	41	4	6	0.12	031	●
3.2	H7	65	16	41	4	6	0.12	032	●
3.3	H7	65	16	41	4	6	0.12	033	●
3.4	H7	70	18	43	4	6	0.12	034	●
3.5	H7	70	18	43	4	6	0.12	035	●
3.6	H7	70	18	43	4	6	0.12	036	●
3.7	H7	70	18	43	4	6	0.12	037	●
3.8	H7	75	19	43	4	6	0.12	038	●
3.9	H7	75	19	43	4	6	0.12	039	●
4	H7	75	19	43	4	6	0.12	040	●
4.1	H7	75	19	43	4	6	0.12	041	●
4.2	H7	80	21	47	4	6	0.12	042	●
4.3	H7	80	21	47	5	6	0.12	043	●
4.4	H7	80	21	47	5	6	0.12	044	●
4.5	H7	80	21	47	5	6	0.12	045	●
4.6	H7	80	21	47	5	6	0.12	046	●
4.7	H7	80	21	47	5	6	0.12	047	●
4.8	H7	80	23	52	5	6	0.12	048	●
4.9	H7	86	23	52	5	6	0.12	049	●
5	H7	86	23	52	5	6	0.12	050	●
5.1	H7	86	23	52	5	6	0.12	051	●
5.2	H7	86	23	52	5	6	0.12	052	●
5.3	H7	93	26	57	6	6	0.12	053	●
5.4	H7	93	26	57	6	6	0.12	054	●
5.5	H7	93	26	57	6	6	0.12	055	●
5.6	H7	93	26	57	6	6	0.12	056	●
5.7	H7	93	26	57	6	6	0.12	057	●
5.8	H7	93	26	57	6	6	0.12	058	●
5.9	H7	93	26	57	6	6	0.12	059	●
6	H7	93	26	57	6	6	0.12	060	●
6.1	H7	101	28	63	6	6	0.12	061	●
6.2	H7	101	28	63	6	6	0.12	062	●
6.3	H7	101	28	63	6	6	0.12	063	●
6.4	H7	101	28	63	6	6	0.12	064	●
6.5	H7	101	28	63	6	6	0.12	065	●
6.6	H7	101	28	69	6	6	0.12	066	●
6.7	H7	109	31	69	6	6	0.12	067	●
6.8	H7	109	31	69	8	6	0.12	068	●
6.9	H7	109	31	69	8	6	0.12	069	●
7	H7	109	31	69	8	6	0.12	070	●
7.1	H7	109	31	69	8	6	0.12	071	●
7.2	H7	109	31	69	8	6	0.12	072	●
7.3	H7	109	31	69	8	6	0.12	073	●
7.4	H7	109	31	69	8	6	0.12	074	●
7.5	H7	109	31	69	8	6	0.12	075	●
7.6	H7	117	33	75	8	6	0.12	076	●
7.7	H7	117	33	75	8	6	0.12	077	●
7.8	H7	117	33	75	8	6	0.12	078	●
7.9	H7	117	33	75	8	6	0.12	079	●
8	H7	117	33	75	8	6	0.15	080	●
8.1	H7	117	33	75	8	6	0.15	081	●
8.2	H7	117	33	75	8	6	0.15	082	●
8.3	H7	117	33	75	8	6	0.15	083	●
8.4	H7	117	33	75	8	6	0.15	084	●
8.5	H7	117	33	75	8	6	0.15	085	●
8.6	H7	125	36	81	10	6	0.15	086	●
8.7	H7	125	36	81	10	6	0.15	087	●
8.8	H7	125	36	81	10	6	0.15	088	●
8.9	H7	125	36	81	10	6	0.15	089	●
9	H7	125	36	81	10	6	0.15	090	●
9.1	H7	125	36	81	10	6	0.15	091	●
9.2	H7	125	36	81	10	6	0.15	092	●
9.3	H7	125	36	81	10	6	0.15	093	●
9.4	H7	125	36	81	10	6	0.15	094	●
9.5	H7	125	36	81	10	6	0.15	095	○
9.6	H7	133	38	87	10	6	0.15	096	●
9.7	H7	133	38	87	10	6	0.15	097	●
9.8	H7	133	38	87	10	6	0.15	098	●
9.9	H7	133	38	87	10	6	0.15	099	●
10	H7	133	38	87	10	6	0.15	100	●
11	H7	142	41	96	10	6	0.15	110	●
12	H7	151	44	105	10	6	0.15	120	●
13	H7	151	44	105	10	8	0.15	130	●
14	H7	160	47	110	12.5	8	0.18	140	●
15	H7	162	50	112	12.5	8	0.18	150	●
16	H7	170	52	120	12.5	8	0.18	160	●
18	H7	182	56	130	14	8	0.18	180	●
20	H7	195	60	137	16	8	0.2	200	●

Prod. Gr. 117

ATORN® Solid carbide NC machine reamer (DIN Similar to 8093)

for universal use up to 1300 N/mm²





Application:
For producing H7 fit tolerances in through holes on an NC machine in material groups up to 1300 N/mm².

Execution:
- 7-8° left-hand spiral and variable pitch, cemented carbide quality K10

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11770020-120	18	15	12	10	8	20	20	20	20	18	16	18		12	8	8	6		

mm		mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11770... Ident. No.	
2	H7	49	11	2	4	0.12	020	●
3	H7	61	20	3	6	0.12	030	●
4	H7	75	22	4	6	0.12	040	●
5	H7	86	28	5	6	0.12	050	●
6	H7	93	30	5.6	6	0.12	060	●
7	H7	109	30	7.1	6	0.12	070	●
8	H7	117	32	8	6	0.12	080	●
9	H7	125	36	9	6	0.12	090	○
10	H7	133	38	10	6	0.15	100	●
11	H7	142	41	10	6	0.15	110	●
12	H7	151	44	10	6	0.15	120	●

Prod. Gr. 117

ATORN® Automatic precision machine reamers (DIN Similar to 8089)

for universal use up to 1300 N/mm²





Ident. No. 330–500



Ident. No. 630–800

Application:
Ident. No. 330–500: For cutting H7 fit tolerances **in through holes** on automated machines and NC machines up to 1300 N/mm².
Ident. No. 630–800: For cutting H7 fit tolerances **in through holes** on automated machines and NC machines up to 1300 N/mm².

Execution:
- **Ident. No. 330–500:** straight-grooved and extremely variable pitch, **type A**
- **Ident. No. 630–800:** 7-8° left-hand spiral and extremely variable pitch, **type B**

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)
- short design ensures good accessibility in cramped spaces and stable cutting conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11772330-500	18	15	12	10	8	20	20	20	20	18	16	18		12	8	8	6		
11772630-800	18	15	12	10	8	20	20	20	20	18	16	18		12	8	8	6		

						Groove type	Straight		Left-hand twist, 7-8°	
mm		mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11772... Ident. No.		11772... Ident. No.	
3	H7	56	20	2.5	6	0.15	330	●	630	●
4	H7	56	20	3.6	6	0.15	340	●	640	●
5	H7	63	22	4	6	0.15	350	●	650	●
6	H7	63	22	5	6	0.15	360	●	660	●
7	H7	71	25	6.3	6	0.15	370	●	670	●
8	H7	71	25	6.3	6	0.15	380	●	680	●
9	H7	71	25	8	6	0.15	390	●	690	●
10	H7	71	25	8	6	0.2	400	●	700	●
12	H7	80	28	10	6	0.2	420	●	720	●
14	H7	90	32	12.5	8	0.2	440	●	740	●
16	H7	90	32	12.5	8	0.2	460	●	760	●
18	H7	100	36	16	8	0.25	480	●	780	●
20	H7	100	36	16	8	0.25	500	●	800	○

Prod. Gr. 117

solid carbide machine reamers 1/100 mm
For demanding serial users

application:
for cutting high-precision fit tolerances (0/+0.003 mm) on conventional machines and CNC machines.

advantage:
- covers a wide range of tolerances
- manufacture of special reamers not required
- in stock
- high cutting values can be realised
- universal range of diameters from 0.90 mm to 12.03 mm
- tight tolerance for high precision (0/+0.003 mm)
- very long service life through high-quality cemented carbide cutting material



0,001

VHM

ATORN® NC machine reamer, solid carbide with uniform shank
(DIN Similar to 8093)

For universal use up to 1300 N/mm2

VHM | 0,001 | ≈7–8° | HA



Application:
for producing fit tolerances (tolerance = 0/+0.003 mm) in through holes on NC machines up to 1300 N/mm².

Execution:
- 7–8° left-hand spiral, type B

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11730	18	15	12	10	8	20	20	20	20	18	16	18		12	8	8	6		

mm		mm	mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11730... Ident. No.	
0.9	0 / +0,003 mm	34	6	20	1	3	0.12	090	●
1	0 / +0,003 mm	34	6	20	1	3	0.12	100	●
1.01	0 / +0,003 mm	34	6	20	1	3	0.12	101	○
1.02	0 / +0,003 mm	34	6	20	1	3	0.12	102	●
1.03	0 / +0,003 mm	34	6	20	1	3	0.12	103	●
1.48	0 / +0,003 mm	40	8	24	2	3	0.12	148	●
1.49	0 / +0,003 mm	40	8	24	2	3	0.12	149	●
1.5	0 / +0,003 mm	40	8	24	2	2	0.12	150	●
1.51	0 / +0,003 mm	43	9	25	2	3	0.12	151	●
1.52	0 / +0,003 mm	43	9	25	2	3	0.12	152	●
1.53	0 / +0,003 mm	43	9	25	2	3	0.12	153	●
1.98	0 / +0,003 mm	49	11	29	2	4	0.12	198	●
1.99	0 / +0,003 mm	49	11	29	2	4	0.12	199	●
2	0 / +0,003 mm	49	11	29	2	4	0.12	200	●
2.01	0 / +0,003 mm	49	11	29	2	4	0.12	201	●
2.02	0 / +0,003 mm	49	11	29	2	4	0.12	202	●
2.03	0 / +0,003 mm	49	11	29	2	4	0.12	203	●
2.97	0 / +0,003 mm	61	15	41	3	4	0.12	297	●
2.98	0 / +0,003 mm	61	15	41	3	6	0.12	298	●
2.99	0 / +0,003 mm	61	15	41	3	6	0.12	299	●
3	0 / +0,003 mm	61	15	41	3	6	0.12	300	●
3.01	0 / +0,003 mm	61	15	41	3	6	0.12	301	●
3.02	0 / +0,003 mm	61	15	41	3	6	0.12	302	●
3.03	0 / +0,003 mm	61	15	41	3	6	0.12	303	●
3.97	0 / +0,003 mm	75	19	43	4	4	0.12	397	●
3.98	0 / +0,003 mm	75	19	43	4	6	0.12	398	●
3.99	0 / +0,003 mm	75	19	43	4	6	0.12	399	●
4	0 / +0,003 mm	75	19	43	4	6	0.15	400	●
4.01	0 / +0,003 mm	75	19	43	4	6	0.15	401	●
4.02	0 / +0,003 mm	75	19	43	4	6	0.15	402	●
4.03	0 / +0,003 mm	75	19	43	4	6	0.15	403	●
4.97	0 / +0,003 mm	86	23	52	5	6	0.15	497	●
4.98	0 / +0,003 mm	86	23	52	5	6	0.15	498	●
4.99	0 / +0,003 mm	86	23	52	5	6	0.15	499	●
5	0 / +0,003 mm	86	23	52	5	6	0.15	500	●
5.01	0 / +0,003 mm	86	23	52	5	6	0.15	501	●
5.02	0 / +0,003 mm	86	23	52	5	6	0.15	502	●
5.03	0 / +0,003 mm	86	23	52	5	6	0.15	503	●

mm		mm	mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11730... Ident. No.	
5.98	0 / +0,003 mm	93	26	57	6	6	0.15	598	●
5.99	0 / +0,003 mm	93	26	57	6	6	0.15	599	●
6	0 / +0,003 mm	93	26	57	6	6	0.15	600	●
6.01	0 / +0,003 mm	101	28	63	6	6	0.15	601	●
6.02	0 / +0,003 mm	101	28	63	6	6	0.15	602	●
6.03	0 / +0,003 mm	101	28	63	6	6	0.15	603	●
6.98	0 / +0,003 mm	109	31	69	8	6	0.15	698	●
6.99	0 / +0,003 mm	109	31	69	8	6	0.15	699	●
7	0 / +0,003 mm	109	31	69	8	6	0.15	700	●
7.01	0 / +0,003 mm	109	31	69	8	6	0.15	701	●
7.02	0 / +0,003 mm	109	31	69	8	6	0.15	702	●
7.03	0 / +0,003 mm	109	31	69	8	6	0.15	703	●
7.97	0 / +0,003 mm	117	33	75	8	6	0.15	797	●
7.98	0 / +0,003 mm	117	33	75	8	6	0.15	798	●
7.99	0 / +0,003 mm	117	33	75	8	6	0.15	799	●
8	0 / +0,003 mm	117	33	75	8	6	0.15	800	●
8.01	0 / +0,003 mm	117	33	75	8	6	0.15	801	●
8.02	0 / +0,003 mm	117	33	75	8	6	0.15	802	●
8.03	0 / +0,003 mm	117	33	75	8	6	0.15	803	●
8.98	0 / +0,003 mm	125	36	81	10	6	0.15	898	○
8.99	0 / +0,003 mm	125	36	81	10	6	0.15	899	●
9	0 / +0,003 mm	125	36	81	10	6	0.15	900	○
9.01	0 / +0,003 mm	125	36	81	10	6	0.15	901	●
9.02	0 / +0,003 mm	125	36	81	10	6	0.15	902	●
9.03	0 / +0,003 mm	125	36	81	10	6	0.15	903	●
9.97	0 / +0,003 mm	133	38	87	10	6	0.15	997	●
9.98	0 / +0,003 mm	133	38	87	10	6	0.15	998	●
9.99	0 / +0,003 mm	133	38	87	10	6	0.15	009	●
10	0 / +0,003 mm	133	38	87	10	6	0.15	010	●
10.01	0 / +0,003 mm	133	38	87	10	6	0.15	011	●
10.02	0 / +0,003 mm	133	38	87	10	6	0.15	012	●
10.03	0 / +0,003 mm	133	38	87	10	6	0.15	013	●
11.98	0 / +0,003 mm	151	44	105	10	6	0.15	014	●
11.99	0 / +0,003 mm	151	44	105	10	6	0.15	015	●
12	0 / +0,003 mm	151	44	105	10	6	0.15	016	●
12.01	0 / +0,003 mm	151	44	105	10	6	0.15	017	●
12.02	0 / +0,003 mm	151	44	105	10	6	0.15	018	●
12.03	0 / +0,003 mm	151	44	105	10	6	0.15	019	●

Prod. Gr. 117

HSSE machine reamers H7

Application:
For cutting H7 fit tolerances on conventional machines and CNC machines.

advantage:
- universal range of diameters from 1.00 mm to 40.00 mm
- various types of reamers
- very long service life
- precisely ground in accordance with DIN 1420
- coated versions for higher cutting values
- more dimensions available on request



H7 | HSSE

ATORN® ORION® HSSE NC machine reamers (DIN 212)

for universal use up to 1000 N/mm²

HSSE | H7 | ≈7–8° | HA



No. 11628 028–11638 200

Application:
for cutting H7 fit tolerances in through holes and blind holes on NC machines or conventional machines up to 1000 N/mm².

Execution:
- **No. 11628 010–11628 027:** 7-8° left-hand spiral, **type B, with centring points on both sides** and continuous shank
- **No. 11628 028–11628 200:** 7-8° left-hand spiral, **type D, with centring hole** and offset shank
- **No. 11638:** 7-8° left-hand spiral, **type D, with centring hole** and offset shank

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11628010-027	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11628028-200	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

								ATORN®		ORION®	
								Surface	Uncoated	Uncoated	
mm		mm	mm	mm	mm			f steel 1000 ● (mm/U)	11628... Ident. No.		11638... Ident. No.	
1	H7	34	5.5	15	1	3	0.1	010	●	-	-
1.1	H7	36	6.5	15.5	1	3	0.1	011	●	-	-
1.2	H7	38	8	16.5	1	3	0.1	012	●	-	-
1.3	H7	38	8	16.5	1	3	0.1	013	●	-	-
1.4	H7	40	8	18	2	3	0.1	014	●	-	-
1.5	H7	40	8	18	2	3	0.1	015	●	-	-
1.6	H7	43	9	20	2	3	0.1	016	●	-	-
1.7	H7	43	9	20	2	3	0.1	017	●	-	-
1.8	H7	46	10	22	2	4	0.1	018	●	-	-
1.9	H7	46	10	22	2	4	0.1	019	●	-	-
2	H7	49	11	24	2	4	0.1	020	●	-	-
2.1	H7	49	11	24	2	4	0.1	021	●	-	-
2.2	H7	53	12	25	3	4	0.1	022	●	-	-
2.3	H7	53	12	25	3	4	0.1	023	●	-	-
2.4	H7	57	14	29	3	4	0.1	024	●	-	-
2.5	H7	57	14	29	3	4	0.1	025	●	-	-
2.6	H7	57	14	29	3	4	0.1	026	●	-	-
2.7	H7	61	15	33	3	4	0.1	027	●	-	-
2.8	H7	61	15	33	3	6	0.1	028	●	-	-
2.9	H7	61	15	33	3	6	0.1	029	●	-	-
3	H7	61	15	33	3	6	0.1	030	●	030	●
3.1	H7	65	16	37	4	6	0.1	031	●	-	-
3.2	H7	65	16	37	4	6	0.1	032	●	-	-
3.3	H7	65	16	37	4	6	0.1	033	●	-	-
3.4	H7	70	18	42	4	6	0.1	034	●	-	-
3.5	H7	70	18	42	4	6	0.1	035	●	035	●
3.6	H7	70	18	42	4	6	0.1	036	●	-	-
3.7	H7	70	18	42	4	6	0.1	037	●	-	-
3.8	H7	75	19	47	4	6	0.1	038	●	-	-
3.9	H7	75	19	47	4	6	0.1	039	●	-	-
4	H7	75	19	47	4	6	0.1	040	●	040	●
4.1	H7	75	19	47	4	6	0.1	041	●	-	-
4.2	H7	75	19	47	4	6	0.1	042	●	-	-
4.3	H7	80	21	52	5	6	0.1	043	●	-	-
4.4	H7	80	21	52	5	6	0.1	044	●	-	-
4.5	H7	80	21	52	5	6	0.1	045	●	045	●
4.6	H7	80	21	52	5	6	0.1	046	●	-	-
4.7	H7	80	21	52	5	6	0.1	047	●	-	-
4.8	H7	86	23	58	5	6	0.1	048	●	-	-
4.9	H7	86	23	58	5	6	0.1	049	●	-	-

								ATORN®		ORION®	
								Surface	Uncoated	Uncoated	
mm		mm	mm	mm	mm			f steel 1000 ● (mm/U)	11628... Ident. No.		11638... Ident. No.	
5	H7	86	23	58	5	6	0.1	050	●	050	●
5.1	H7	86	23	58	5	6	0.1	051	●	-	-
5.2	H7	86	23	58	5	6	0.1	052	●	-	-
5.3	H7	86	23	58	5	6	0.1	053	●	-	-
5.4	H7	93	26	57	6	6	0.1	054	●	-	-
5.5	H7	93	26	57	6	6	0.1	055	●	055	●
5.6	H7	93	26	57	6	6	0.1	056	●	-	-
5.7	H7	93	26	57	6	6	0.1	057	●	-	-
5.8	H7	93	26	57	6	6	0.1	058	●	-	-
5.9	H7	93	26	57	6	6	0.1	059	●	-	-
6	H7	93	26	57	6	6	0.1	060	●	060	●
6.1	H7	101	28	65	6	6	0.1	061	●	-	-
6.2	H7	101	28	65	6	6	0.1	062	●	-	-
6.3	H7	101	28	65	6	6	0.1	063	●	-	-
6.4	H7	101	28	65	6	6	0.1	064	●	-	-
6.5	H7	101	28	65	6	6	0.1	065	●	065	●
6.6	H7	101	28	65	6	6	0.1	066	●	-	-
6.7	H7	101	28	65	6	6	0.1	067	●	-	-
6.8	H7	109	31	73	8	6	0.1	068	●	-	-
6.9	H7	109	31	73	8	6	0.1	069	●	-	-
7	H7	109	31	73	8	6	0.1	070	●	070	●
7.1	H7	109	31	73	8	6	0.1	071	●	-	-
7.2	H7	109	31	73	8	6	0.1	072	●	-	-
7.3	H7	109	31	73	8	6	0.1	073	●	-	-
7.4	H7	109	31	73	8	6	0.1	074	●	-	-
7.5	H7	109	31	73	8	6	0.1	075	●	075	●
7.6	H7	117	33	81	8	6	0.1	076	●	-	-
7.7	H7	117	33	81	8	6	0.1	077	●	-	-
7.8	H7	117	33	81	8	6	0.1	078	●	-	-
7.9	H7	117	33	81	8	6	0.1	079	●	-	-
8	H7	117	33	81	8	6	0.1	080	●	080	●
8.1	H7	117	33	81	8	6	0.13	081	●	-	-
8.2	H7	117	33	81	8	6	0.13	082	●	-	-
8.3	H7	117	33	81	8	6	0.13	083	●	-	-
8.4	H7	117	33	81	8	6	0.13	084	●	-	-
8.5	H7	117	33	81	8	6	0.13	085	●	085	●
8.6	H7	125	36	85	10	6	0.13	086	○	-	-
8.7	H7	125	36	85	10	6	0.13	087	●	-	-
8.8	H7	125	36	85	10	6	0.13	088	●	-	-
8.9	H7	125	36	85	10	6	0.13	089	●	-	-

							Surface	ATORN® Uncoated		ORION® Uncoated	
mm		mm	mm	mm	mm	z	f steel 1000 ● (mm/U)	11628... Ident. No.		11638... Ident. No.	
9	H7	125	36	85	10	6	0.13	090	●	090	●
9.1	H7	125	36	85	10	6	0.13	091	●	-	-
9.2	H7	125	36	85	10	6	0.13	092	●	-	-
9.3	H7	125	36	85	10	6	0.13	093	●	-	-
9.4	H7	125	36	85	10	6	0.13	094	●	-	-
9.5	H7	125	36	85	10	6	0.13	095	●	095	●
9.6	H7	133	38	93	10	6	0.13	096	●	-	-
9.7	H7	133	38	93	10	6	0.13	097	●	-	-
9.8	H7	133	38	93	10	6	0.13	098	●	-	-
9.9	H7	133	38	93	10	6	0.13	099	●	-	-
10	H7	133	38	93	10	6	0.15	100	●	100	●
11	H7	142	41	102	10	6	0.15	110	●	110	●
12	H7	151	44	111	10	6	0.15	120	●	120	●
13	H7	151	44	111	10	8	0.15	130	●	130	●
14	H7	160	47	115	14	8	0.15	140	●	140	●
15	H7	162	50	117	14	8	0.2	150	●	150	●
16	H7	170	52	125	14	8	0.2	160	●	160	●
17	H7	175	54	130	14	8	0.2	170	●	170	●
18	H7	182	56	137	14	8	0.2	180	●	180	●
20	H7	195	60	147	16	8	0.25	200	●	200	●

ORION = Prod. Gr. 104
ATORN® = Prod. Gr. 117

ATORN® ORION® HSSE machine reamers (DIN 212)

for universal use up to 1000 N/mm²

HSSE | H7 | 0° | ≈7–8° | HA

Application:

No. 11630–11633: for cutting H7 fit tolerances in blind holes on conventional machines and NC machines up to 1000 N/mm².

No. 11634: for producing H7 fit tolerances in through holes on conventional machines and NC machines up to 1000 N/mm².

Execution:

- **No. 11630 010–11630 025, 11633 015–11633 025:** straight design, type A, with continuous shank and lathe centre on both sides
- **No. 11630 030–11630 200, 11633 030–11633 160:** straight design, type C, with reduced shank and centring hole on both sides
- **No. 11634 015–11634 025:** 7-8° left-hand spiral, type B, with continuous shank and centring point on both sides
- **No. 11634 030–11634 200:** 7-8° left-hand spiral, type D, with reduced shank and centring hole on both sides

Advantage:

- good bore hole quality (dimensional tolerance, roundness, surface quality)



No. 11630



No. 11633



No. 11634

Application No.	Steel (N/mm²) <700	<1000	<1300	Stainless steel marten.	austen.	Alu short	long	Brass short	long	Bronze short	long	Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat. <55 HRC	<65 HRC
11630010-025	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11630030-200	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11633015-025	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11633030-160	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11634015-025	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11634030-200	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

							Groove type	ATORN® Straight		ORION® Straight		Left-hand twist, 7-8°	
mm		mm	mm	mm	mm	z	f steel 1000 ● (mm/U)	11630... Ident. No.		11633... Ident. No.		11634... Ident. No.	
1	H7	34	6	15	1	3	0.1	010	●	-	-	-	-
1.5	H7	40	8	18	1.5	3	0.1	015	●	015	●	015	●
2	H7	49	11	24	2	4	0.1	020	●	020	●	020	●
2.5	H7	57	14	29	2.5	4	0.1	025	●	025	●	025	●
3	H7	61	15	33	3	6	0.1	030	●	030	●	030	●
3.5	H7	70	18	42	3.5	6	0.1	-	-	035	●	035	●
4	H7	75	19	47	4	6	0.1	040	●	040	●	040	●
4.5	H7	80	21	52	4.5	6	0.1	-	-	045	●	045	●
5	H7	86	23	58	5	6	0.1	050	●	050	●	050	●
6	H7	93	26	57	5.6	6	0.1	060	●	060	●	060	●
7	H7	109	31	73	7.1	6	0.1	070	●	070	●	070	●
8	H7	117	33	81	8	6	0.15	080	●	080	●	080	●
9	H7	125	36	85	9	6	0.15	090	●	090	●	090	●
10	H7	133	38	93	10	6	0.15	100	●	100	●	100	●
11	H7	142	41	102	10	6	0.15	-	-	110	●	110	●
12	H7	151	44	111	10	6	0.15	120	●	120	●	120	●
13	H7	151	44	111	10	6	0.15	130	○	130	●	130	●
14	H7	160	47	115	12.5	8	0.15	140	●	140	●	140	●
15	H7	162	50	117	12.5	8	0.15	150	○	150	●	150	●
16	H7	170	52	125	12.5	8	0.2	160	●	160	●	160	●
17	H7	175	54	130	14	8	0.2	170	○	-	-	-	-
18	H7	182	56	137	14	8	0.2	180	○	-	-	180	●
20	H7	195	60	147	16	8	0.25	200	○	-	-	200	●

ORION = Prod. Gr. 104
ATORN® = Prod. Gr. 117

ATORN® HSSE automated machine reamer (DIN 8089)

for universal use up to 1000N/mm²

HSSE | H7 | ≈7-8° | HA



Application:
For producing H7 fit tolerances in through holes on automated machines and NC machines up to 1000 N/mm².

Execution:
- 7-8° left-hand spiral, short design for automated machining

Advantage:
- short design ensures good accessibility in cramped spaces and stable cutting conditions
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11626040-200	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

mm		mm	mm	mm	z	f steel 1000 ● (mm/U)	11626... Ident. No.	
4	H7	56	20	3.55	6	0.1	040	●
5	H7	63	22	4	6	0.1	050	●
6	H7	63	22	5	6	0.15	060	●
8	H7	71	25	6.3	6	0.15	080	●
10	H7	71	25	8	6	0.15	100	●
11	H7	80	28	10	6	0.15	110	●
12	H7	80	28	10	6	0.15	120	●
14	H7	90	32	12.5	8	0.15	140	●
15	H7	90	32	12.5	8	0.2	150	●
16	H7	90	32	12.5	8	0.2	160	●
18	H7	100	36	16	8	0.2	180	●
20	H7	100	36	16	8	0.25	200	●

Prod. Gr. 117

ATORN® HSSE machine reamer, extra-long (DIN Similar to 212)

for universal use up to 1000N/mm²

HSSE | H7 | HA | 10°



Application:
For producing H7 fit tolerances in deep-set through holes up to 1000 N/mm².

Execution:
- 10° left-hand spiral, long design

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)
- long design ensures good accessibility for deep-set or difficult-to-reach drill holes

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11627020-120	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

mm		mm	mm	mm	mm	z	f steel 1000 ● (mm/U)	11627... Ident. No.	
2	H7	65	14	45	2	6	0.1	020	●
2	H7	80	20	60	2	6	0.1	025	●
3	H7	90	14	70	3	6	0.1	030	●
3	H7	120	30	100	3	6	0.1	035	●
4	H7	105	16	80	4	6	0.1	040	●
4	H7	160	30	135	4	6	0.1	045	●
5	H7	115	16	90	5	6	0.1	050	●
5	H7	200	30	175	5	6	0.1	055	●
6	H7	130	16	100	6	6	0.1	060	●
6	H7	250	35	220	6	6	0.1	065	●
8	H7	160	18	130	8	6	0.1	080	●
8	H7	250	35	220	8	6	0.13	085	●
10	H7	190	20	150	10	6	0.13	100	●
10	H7	250	35	220	10	6	0.15	105	●
12	H7	210	20	160	12	6	0.15	120	●

Prod. Gr. 117

ATORN® ORION® HSSE machine reamers (DIN 208)

for universal use up to 1000 N/mm²



Application:

No. 11636 030–11636 320, 11642 030–11642 400: for producing H7 fit tolerances in through holes on conventional machines and NC machines up to 1000 N/mm².

No. 11641: for cutting H7 fit tolerances in blind holes on conventional machines and NC machines up to 1000 N/mm².

Execution:

- **No. 11636 030–11636 320, 11642 030–11642 400:** 7-8° left-hand spiral, type B
- **No. 11641:** straight version

Advantage:

- good bore hole quality (dimensional tolerance, roundness, surface quality)



No. 11636



No. 11641



No. 11642

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11636030-320	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11641050-300	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11642030-400	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

								ATORN®		ORION®			
							Groove type	Left-hand twist, 7-8°		Left-hand twist, 7-8°		Straight	
mm		mm	mm	mm		z	f steel 1000 ● (mm/U)	11636... Ident. No.		11642... Ident. No.		11641... Ident. No.	
3	H7	112	15	49.5	MK 1	6	0.1	030	●	030	●	-	-
4	H7	125	19	59.5	MK 1	6	0.1	040	●	040	●	-	-
5	H7	133	23	67.5	MK 1	6	0.1	050	●	050	●	050	●
6	H7	138	26	72.5	MK 1	6	0.1	060	●	060	●	060	●
7	H7	150	31	84.5	MK 1	6	0.1	070	●	070	●	-	-
8	H7	156	33	90.5	MK 1	6	0.1	080	●	080	●	080	●
9	H7	162	36	96.5	MK 1	6	0.1	-	-	090	●	090	●
10	H7	168	38	102.5	MK 1	6	0.13	100	●	100	●	100	●
11	H7	175	41	109.5	MK 1	6	0.15	110	●	110	●	110	●
12	H7	182	44	116.5	MK 1	6	0.15	120	●	120	●	120	●
13	H7	182	44	116.5	MK 1	8	0.15	130	●	130	●	130	●
14	H7	189	47	123.5	MK 1	8	0.15	140	●	140	●	140	●
15	H7	204	50	124	MK 2	8	0.15	150	●	150	●	150	●
16	H7	210	52	130	MK 2	8	0.2	160	●	160	●	160	●
17	H7	214	54	134	MK 2	8	0.2	170	●	170	●	170	●
18	H7	219	56	139	MK 2	8	0.2	180	●	180	●	180	●
19	H7	223	58	143	MK 2	8	0.2	190	●	190	●	190	●
20	H7	228	60	148	MK 2	8	0.2	200	●	200	●	200	●

								ATORN®		ORION®			
							Groove type	Left-hand twist, 7-8°		Left-hand twist, 7-8°		Straight	
mm		mm	mm	mm		z	f steel 1000 ● (mm/U)	11636... Ident. No.		11642... Ident. No.		11641... Ident. No.	
21	H7	232	62	152	MK 2	8	0.2	-	-	210	●	210	●
22	H7	237	64	157	MK 2	8	0.2	220	●	220	●	220	●
23	H7	241	66	161	MK 2	8	0.25	-	-	230	●	230	●
24	H7	268	68	169	MK 3	8	0.25	240	●	240	●	240	●
25	H7	268	68	169	MK 3	10	0.25	250	●	250	●	250	●
26	H7	273	70	174	MK 3	10	0.25	260	●	260	●	260	●
27	H7	277	71	178	MK 3	10	0.25	-	-	270	●	-	-
28	H7	277	71	178	MK 3	10	0.25	280	●	280	●	280	●
29	H7	281	73	182	MK 3	10	0.25	-	-	290	●	-	-
30	H7	281	73	182	MK 3	10	0.25	300	●	300	●	300	●
32	H7	317	77	193	MK 4	12	0.3	320	●	320	●	-	-
34	H7	321	78	197	MK 4	12	0.3	-	-	340	●	-	-
35	H7	321	78	197	MK 4	12	0.3	-	-	350	●	-	-
36	H7	325	79	201	MK 4	12	0.3	-	-	360	●	-	-
38	H7	329	81	205	MK 4	12	0.3	-	-	380	●	-	-
40	H7	329	81	205	MK 4	12	0.3	-	-	400	●	-	-

ORION = Prod. Gr. 104
ATORN® = Prod. Gr. 117

ATORN® HSSE machine reamer, extra-long (DIN Similar to 208)

for universal use up to 1000N/mm²



HSSE | H7 | MK | 10°

Application:
for producing H7 fit tolerances in deep-set or difficult-to-reach through holes on conventional machines and NC machines up to 1000 N/mm².

Execution:
- 10° left-hand spiral, type B, long design

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)
- long design ensures good accessibility for deep-set or difficult-to-reach drill holes

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11643125-300	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

mm		mm	mm	mm		z	f steel 1000 ● (mm/U)	11643... Ident. No.	
12	H7	315	40	250	MK 1	6	0.15	125	●
14	H7	245	22	180	MK 1	8	0.15	140	●
14	H7	315	40	250	MK 1	8	0.15	145	●
15	H7	260	22	180	MK 2	8	0.15	150	●
16	H7	260	25	180	MK 2	8	0.15	160	●
16	H7	350	45	270	MK 2	8	0.15	165	●
18	H7	260	25	180	MK 2	8	0.2	180	●
18	H7	350	45	270	MK 2	8	0.2	185	○
20	H7	270	28	190	MK 2	8	0.2	200	●
20	H7	350	45	270	MK 2	8	0.25	205	●
22	H7	280	28	200	MK 2	8	0.25	220	○
24	H7	300	32	200	MK 3	8	0.25	240	●
25	H7	320	32	220	MK 3	8	0.25	250	●
26	H7	330	32	236	MK 3	10	0.25	260	●
30	H7	350	36	250	MK 3	10	0.25	300	●

Prod. Gr. 117

HSSE machine reamers 1/100 mm

application:
for cutting high-precision fit tolerances (0/+0.003 mm) on conventional machines and CNC machines.

advantage:
- covers a wide range of tolerances
- manufacture of special reamers not required
- in stock
- universal range of diameters from 0.90 mm to 12.03 mm
- tight tolerance for high precision (0/+0.003 mm)
- cheaper alternative to solid carbide tools



0,001 | HSSE

ATORN® NC machine reamer 1/100 mm HSSE with universal shaft

(DIN Similar to 212)

for universal use up to 1000N/mm²

HSSE | 0,001 | ≈7-8° | HA



Ident. No. 009–019, 247–998



Ident. No. 100–203

Application:
for producing fit tolerances in through holes (tolerance=0/+0.003 mm) on NC machines or conventional machines up to 1000 N/mm².

Execution:

- **Ident. No. 009–019, 247–998:** 7-8° left-hand spiral, **type D, with centring hole** and offset shank
- **Ident. No. 100–203:** 7-8° left-hand spiral, **type B, with centring points on both sides** and continuous shank

Advantage:

- good bore hole quality (dimensional tolerance, roundness, surface quality)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11624298-019	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11624100-203	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

mm		mm	mm	mm	mm h6	z	Surface f steel 1000 ● (mm/U)	Uncoated 11624... Ident. No.	
1	0 / +0,003 mm	34	5.5	15	1	3	0.08	100	●
1.01	0 / +0,003 mm	34	5.5	15	1	3	0.08	101	●
1.02	0 / +0,003 mm	34	5.5	15	1	3	0.08	102	●
1.03	0 / +0,003 mm	34	5.5	15	1	3	0.08	103	●
1.5	0 / +0,003 mm	40	8	18	2	3	0.08	150	●
1.51	0 / +0,003 mm	43	9	20	2	4	0.09	151	●
1.52	0 / +0,003 mm	43	9	20	2	4	0.09	152	●
1.53	0 / +0,003 mm	43	9	20	2	4	0.09	153	●
1.97	0 / +0,003 mm	49	11	24	2	4	0.09	197	●
1.98	0 / +0,003 mm	49	11	24	2	4	0.09	198	●
1.99	0 / +0,003 mm	49	11	24	2	4	0.09	199	●
2	0 / +0,003 mm	49	11	24	2	4	0.09	200	●
2.01	0 / +0,003 mm	49	11	24	2	4	0.09	201	●
2.02	0 / +0,003 mm	49	11	24	2	4	0.09	202	●
2.03	0 / +0,003 mm	49	11	24	2	4	0.09	203	●
2.47	0 / +0,003 mm	57	14	29	3	6	0.1	247	●
2.48	0 / +0,003 mm	57	14	29	3	6	0.1	248	●
2.49	0 / +0,003 mm	57	14	29	3	6	0.1	249	●
2.51	0 / +0,003 mm	57	14	29	3	6	0.1	251	●
2.52	0 / +0,003 mm	57	14	29	3	6	0.1	252	●
2.53	0 / +0,003 mm	57	14	29	3	6	0.1	253	●
2.97	0 / +0,003 mm	61	15	33	3	6	0.1	297	●
2.98	0 / +0,003 mm	61	15	33	3	6	0.1	298	●
2.99	0 / +0,003 mm	61	15	33	3	6	0.1	299	●
3	0 / +0,003 mm	61	15	33	3	6	0.1	300	●
3.01	0 / +0,003 mm	61	15	37	3	6	0.1	301	●
3.02	0 / +0,003 mm	61	15	37	3	6	0.1	302	●
3.03	0 / +0,003 mm	61	15	37	3	6	0.1	303	●
3.97	0 / +0,003 mm	75	19	47	4	6	0.1	397	●
3.98	0 / +0,003 mm	75	19	47	4	6	0.1	398	●
3.99	0 / +0,003 mm	75	19	47	4	6	0.1	399	●
4	0 / +0,003 mm	75	19	47	4	6	0.1	400	●
4.01	0 / +0,003 mm	75	19	47	4	6	0.1	401	●
4.02	0 / +0,003 mm	75	19	47	4	6	0.1	402	●
4.03	0 / +0,003 mm	75	19	47	4	6	0.1	403	●
4.97	0 / +0,003 mm	86	23	58	5	6	0.1	497	●
4.98	0 / +0,003 mm	86	23	58	5	6	0.1	498	●
4.99	0 / +0,003 mm	86	23	58	5	6	0.1	499	●
5	0 / +0,003 mm	86	23	58	5	6	0.1	500	●
5.01	0 / +0,003 mm	86	23	58	5	6	0.1	501	●
5.02	0 / +0,003 mm	86	23	58	5	6	0.1	502	●
5.03	0 / +0,003 mm	86	23	58	5	6	0.1	503	●
5.97	0 / +0,003 mm	93	26	57	6	6	0.1	597	●
5.98	0 / +0,003 mm	93	26	57	6	6	0.1	598	●
5.99	0 / +0,003 mm	93	26	57	6	6	0.1	599	●
6	0 / +0,003 mm	93	26	57	6	6	0.1	600	●
6.01	0 / +0,003 mm	101	28	65	6	6	0.1	601	●
6.02	0 / +0,003 mm	101	28	65	6	6	0.12	602	●
6.03	0 / +0,003 mm	101	28	65	6	6	0.12	603	●
6.97	0 / +0,003 mm	109	31	73	8	6	0.12	697	●
6.98	0 / +0,003 mm	109	31	73	8	6	0.12	698	●
6.99	0 / +0,003 mm	109	31	73	8	6	0.12	699	●
7	0 / +0,003 mm	109	31	73	8	6	0.12	700	●
7.01	0 / +0,003 mm	109	31	73	8	6	0.12	701	●
7.02	0 / +0,003 mm	109	31	73	8	6	0.12	702	●
7.03	0 / +0,003 mm	109	31	73	8	6	0.12	703	●
7.97	0 / +0,003 mm	117	33	81	8	6	0.12	797	●
7.98	0 / +0,003 mm	117	33	81	8	6	0.12	798	●
7.99	0 / +0,003 mm	117	33	81	8	6	0.12	799	●
8	0 / +0,003 mm	117	33	81	8	6	0.12	800	●
8.01	0 / +0,003 mm	117	33	81	8	6	0.13	801	●
8.02	0 / +0,003 mm	117	33	81	8	6	0.13	802	●
8.03	0 / +0,003 mm	117	33	81	8	6	0.13	803	●
9	0 / +0,003 mm	125	36	85	10	6	0.13	900	●
9.01	0 / +0,003 mm	125	36	85	10	6	0.13	901	●
9.02	0 / +0,003 mm	125	36	85	10	6	0.13	902	●
9.03	0 / +0,003 mm	125	36	85	10	6	0.13	903	●
9.97	0 / +0,003 mm	133	38	93	10	6	0.13	997	●
9.98	0 / +0,003 mm	133	38	93	10	6	0.13	998	●
9.99	0 / +0,003 mm	133	38	93	10	6	0.13	009	●
10	0 / +0,003 mm	133	38	93	10	6	0.13	010	●
10.01	0 / +0,003 mm	133	38	93	10	6	0.13	011	●
10.02	0 / +0,003 mm	133	38	93	10	6	0.13	012	●
10.03	0 / +0,003 mm	133	38	93	10	6	0.13	013	●
11.98	0 / +0,003 mm	151	44	111	10	6	0.15	014	●
11.99	0 / +0,003 mm	151	44	111	10	6	0.15	015	●
12	0 / +0,003 mm	151	44	111	10	6	0.15	016	●
12.01	0 / +0,003 mm	151	44	111	10	6	0.15	017	●
12.02	0 / +0,003 mm	151	44	111	10	6	0.15	018	●
12.03	0 / +0,003 mm	151	44	111	10	6	0.15	019	●

Prod. Gr. 117

ATORN® NC machine reamer set, 1/100 mm HSSE with universal shaft

(DIN Similar to 212)

for universal use up to 1000N/mm²

HSSE | 0,001 | ≈7-8° | HA



Application:
For producing fit tolerances in through holes (nominal size=0/+0.003 mm) on a NC machine or conventional machines up to 1000 N/mm².

Execution:

- 7-8° left-hand spiral, type B up to diameter 2.03 mm with dual-sided centring point and continuous shank, type D from diameter 2.98 mm with centring hole and offset shank

Advantage:

- good bore hole quality (dimensional tolerance, roundness, surface quality)

Composition of set	Tolerance of fit	Number of pieces in assortment/set (PCS)	Surface: Uncoated 11622... Ident. No.	
3/4/5/6/8/10/12	0 / +0,003 mm	7	010	●
2.98/3.0/3,01/3.02/3.98/4.00/4.01/4.02/4.98/5.00/5.01/5.02/5.98/6.00/6.01/6.02/7.98/8.00/8.01/8.02/9.98/10.00/10.01/10.02	0 / +0,003 mm	24	015	●
0.98/0.99/1,00/1.01/1.02/1.98/1.99/2.00/2.01/2.02/2.98/2.99/3.00/3.01/3.02/3.98/3.98/3.99/4.00/4.01/4.02/4.98/4.99/5.00/5.01/5.02	0 / +0,003 mm	25	030	●
5.98/5.99/6,00/6.01/6.02/6.98/6.99/7.00/7.01/7.02/7.98/7.99/8.00/8.01/8.02/8.98/8.99/9.00/9.01/9.02/9.98/9.99/10.00/10.01/10.02	0 / +0,003 mm	25	040	●

Prod. Gr. 117

Application No.	Steel (N/mm²) <700	<1000	<1300	Stainless steel marten.	austen.	Alu short	long	Brass short	long	Bronze short	long	Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat. <55 HRC	<65 HRC
11622010-040	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

solid carbide machine reamers with selectable diameter and fit
For demanding serial users

application:
for cutting individually selectable fit tolerances on conventional machines and CNC machines.

advantage:
- wide range of diameters from 0.95 mm to 20.00 mm
- individually selectable diameter and tolerance
- short delivery times
- high cutting values can be realised
- very long service life
- precisely ground in accordance with DIN 1420
- universal application



0,00X | VHM

ATORN® NC machine reamer, solid carbide, with uniform shank (fit tolerance and diameter can be selected) (DIN Similar to 8093)
For universal use up to 1300 N/mm2

VHM | 0,00X | ≈7–8° | HA



Fit and diameter can be selected!

Application:
For producing fit tolerances in through holes on a NC machine in material groups up to 1300 N/mm².

Execution:
- Left-hand spiral, type B

Advantage:
- Diameter and fit can be ordered to suit, shortest possible delivery time
- high-quality solid carbide cutting material ensures a very long service life
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Notes:
Caution when ordering, specify the diameter and fit tolerance (for example 8.53 H7)

Application No.	Steel (N/mm²) <700	<1000	<1300	Stainless steel marten.	austen.	Alu short	long	Brass short	long	Bronze short	long	Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat. <55 HRC	<65 HRC
11730950-987	18	15	12	10	8	20	20	20	20	18	16	18		12	8	8	6		

mm		mm	mm	mm	mm	z	f steel 1300 ● (mm/U)	11730... Ident. No.	
0.95-1.06 mm	Optional	50	6	19	4	3	0.12	950	○
1.07-1.18 mm	Optional	50	9	19	4	3	0.12	990	○
1.19-1.32 mm	Optional	50	9	19	4	3	0.12	951	○
1.33-1.42 mm	Optional	50	9	19	4	3	0.12	952	○
1.43-1.5 mm	Optional	50	9	19	4	3	0.12	953	○
1.51-1.7 mm	Optional	50	10	19	4	3	0.12	954	○
1.71-1.9 mm	Optional	50	11	19	4	4	0.12	955	○
1.91-2.12 mm	Optional	50	12	19	4	4	0.12	956	○
2.13-2.36 mm	Optional	50	12	19	4	4	0.12	957	○
2.37-2.65 mm	Optional	60	16	29	4	4	0.12	958	○
2.66-2.8 mm	Optional	65	17	33	4	6	0.12	959	○
2.81-3.0 mm	Optional	65	17	33	4	6	0.12	960	○
3.01-3.35 mm	Optional	65	18	37	4	6	0.12	961	○
3.36-3.75 mm	Optional	75	18	43	4	6	0.12	962	○
3.76-4.09 mm	Optional	75	19	45	4	6	0.12	963	○
4.1-4.79 mm	Optional	80	21	42	6	6	0.12	964	○

mm		mm	mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11730... Ident. No.	
4.8-5.3 mm	Optional	93	23	55	6	6	0.12	965	○
5.31-5.6 mm	Optional	93	26	55	6	6	0.12	966	○
5.61-6.03 mm	Optional	93	26	55	6	6	0.12	967	○
6.04-6.7 mm	Optional	101	28	63	8	6	0.12	968	○
6.71-7.1 mm	Optional	109	31	71	8	6	0.12	969	○
7.11-7.6 mm	Optional	109	31	71	8	6	0.12	970	○
7.61-8.09 mm	Optional	117	33	79	8	6	0.12	971	○
8.1-8.6 mm	Optional	117	33	79	8	6	0.15	972	○
8.61-9.1 mm	Optional	125	36	83	10	6	0.15	973	○
9.11-9.69 mm	Optional	125	36	83	10	6	0.15	974	○
9.7-10.05 mm	Optional	133	38	91	10	6	0.15	975	○
10.06-10.6 mm	Optional	133	38	91	10	6	0.15	976	○
10.61-11.05 mm	Optional	142	41	100	10	6	0.15	977	○
11.06-11.8 mm	Optional	142	41	100	10	6	0.15	978	○
11.81-12.2 mm	Optional	151	44	104	12	6	0.15	979	○
12.21-13.2 mm	Optional	151	44	104	12	8	0.15	980	○
13.21-14.2 mm	Optional	160	47	110	16	8	0.15	981	○
14.21-15.2 mm	Optional	162	50	112	16	8	0.15	982	○
15.21-16.2 mm	Optional	170	52	120	16	8	0.18	983	○
16.21-17.2 mm	Optional	175	52	125	18	8	0.18	984	○
17.21-18.2 mm	Optional	182	52	132	18	8	0.18	985	○
18.21-19.2 mm	Optional	189	52	137	20	8	0.2	986	○
19.21-20.2 mm	Optional	195	52	143	20	8	0.2	987	○

Prod. Gr. 1BK

ATORN® NC machine reamer VHM with straight shank (diameter can be selected) (DIN Similar to 8093)

For universal use up to 1300 N/mm2





Fit and diameter can be selected!

Application:
For producing fit tolerances in through holes on a NC machine in material groups up to 1300 N/mm².

Execution:
- Left-hand spiral, type B

Advantage:
- Diameter can be ordered to suit, shortest possible delivery time
- high-quality solid carbide cutting material ensures a very long service life
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Notes:
Caution: when ordering, only enter the diameter. The tolerance cannot be selected (e.g. 8.53 mm +0.005 mm)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11731500-576	18	15	12	10	8	20	20	20	20	18	16	18		12	8	8	6		

mm		mm	mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11731... Ident. No.	
0.95-1.06 mm	0 / +0,004 mm	50	6	19	4	3	0.12	500	○
1.07-1.18 mm	0 / +0,004 mm	50	9	19	4	3	0.12	502	○
1.19-1.32 mm	0 / +0,004 mm	50	9	19	4	3	0.12	504	○
1.33-1.42 mm	0 / +0,004 mm	50	9	19	4	3	0.12	506	○
1.43-1.5 mm	0 / +0,004 mm	50	9	19	4	3	0.12	508	○
1.51-1.7 mm	0 / +0,004 mm	50	10	19	4	3	0.12	510	○
1.71-1.9 mm	0 / +0,004 mm	50	11	19	4	4	0.12	512	○
1.91-2.12 mm	0 / +0,004 mm	50	12	19	4	4	0.12	514	○
2.13-2.36 mm	0 / +0,004 mm	50	12	19	4	4	0.12	516	○
2.37-2.65 mm	0 / +0,004 mm	60	16	29	4	4	0.12	518	○
2.66-2.8 mm	0 / +0,004 mm	65	17	33	4	6	0.12	520	○
2.81-3.0 mm	0 / +0,004 mm	65	17	33	4	6	0.12	522	○
3.01-3.35 mm	0 / +0,004 mm	65	18	37	4	6	0.12	524	○
3.36-3.75 mm	0 / +0,004 mm	75	18	43	4	6	0.12	526	○
3.76-4.09 mm	0 / +0,004 mm	75	19	45	4	6	0.12	528	○
4.1-4.79 mm	0 / +0,004 mm	80	21	42	6	6	0.12	530	○
4.8-5.3 mm	0 / +0,004 mm	93	23	55	6	6	0.12	532	○
5.31-5.6 mm	0 / +0,004 mm	93	26	55	6	6	0.12	534	○
5.61-6.03 mm	0 / +0,005 mm	93	26	55	6	6	0.12	536	○
6.04-6.7 mm	0 / +0,005 mm	101	28	63	8	6	0.12	538	○
6.71-7.1 mm	0 / +0,005 mm	109	31	71	8	6	0.12	540	○
7.11-7.6 mm	0 / +0,005 mm	109	31	71	8	6	0.12	542	○
7.61-8.09 mm	0 / +0,005 mm	117	33	79	8	6	0.12	544	○
8.1-8.6 mm	0 / +0,005 mm	117	33	79	8	6	0.15	546	○
8.61-9.1 mm	0 / +0,005 mm	125	36	83	10	6	0.15	548	○
9.11-9.69 mm	0 / +0,005 mm	125	36	83	10	6	0.15	550	○
9.7-10.05 mm	0 / +0,005 mm	133	38	91	10	6	0.15	552	○
10.06-10.6 mm	0 / +0,005 mm	133	38	91	10	6	0.15	554	○
10.61-11.05 mm	0 / +0,005 mm	142	41	100	10	6	0.15	556	○
11.06-11.8 mm	0 / +0,005 mm	142	41	100	10	6	0.15	558	○
11.81-12.05 mm	0 / +0,005 mm	151	44	104	12	6	0.15	560	○

Prod. Gr. 1BK

HSSE machine reamers with selectable diameter and fit

application:
for cutting individually selectable fit tolerances on conventional machines and CNC machines.

advantage:
- wide range of diameters from 0.95 mm to 20.00 mm
- individually selectable diameter and tolerance
- short delivery times
- very long service life
- precisely ground in accordance with DIN 1420
- universal application



0,00X | HSSE

ATORN® HSSE NC machine reamer with uniform shank (fit tolerance and diameter can be selected) (DIN Similar to 212)

for universal use up to 1000 N/mm²

HSSE | 0,00X | ≈7–8° | HA



Application:
for producing fit tolerances in through holes on NC machines or conventional machines up to 1000 N/mm².

Execution:
- 7–8° left-hand spiral, type B

Advantage:
- Diameter and fit can be ordered to suit, shortest possible delivery time
- high-quality HSSE cutting material for a very long service life
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Notes:
Caution: when ordering, specify the diameter and fit tolerance (for example 8.53 H7)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11624911-995	12	9	7	8	7	17	17	17	17	13	13			11	5	5			

mm		mm	mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11624... Ident. No.	
0.95-1.06 mm	Optional	34	5.5	13	1	3	0.12	911	○
1.07-1.18 mm	Optional	36	6.5	14	1	3	0.12	912	○
1.19-1.32 mm	Optional	38	7.5	13	2	3	0.12	913	○
1.33-1.41 mm	Optional	40	8	15	2	3	0.12	914	○
1.42-1.50 mm	Optional	40	8	22	2	3	0.12	992	○
1.51-1.70 mm	Optional	43	9	23	2	3	0.12	993	○
1.71-1.90 mm	Optional	46	10	20	2	4	0.12	915	○
1.91-2.12 mm	Optional	49	11	22	2	4	0.12	916	○
2.13-2.36 mm	Optional	53	12	21	3	4	0.12	917	○
2.37-2.65 mm	Optional	57	14	26	3	4	0.12	918	○
2.66-2.80 mm	Optional	61	15	30	3	6	0.12	994	○
2.81-3.00 mm	Optional	61	15	30	3	6	0.12	919	○
3.01-3.35 mm	Optional	65	16	33	4	6	0.12	921	○
3.36-3.75 mm	Optional	70	18	39	4	6	0.12	922	○
3.76-4.05 mm	Optional	75	19	46	4	6	0.12	923	○
4.06-4.25 mm	Optional	75	19	46	4	6	0.12	924	○
4.26-4.75 mm	Optional	80	21	51	5	6	0.12	925	○
4.76-5.05 mm	Optional	86	23	57	5	6	0.12	927	○
5.06-5.30 mm	Optional	86	23	57	5	6	0.12	929	○
5.31-5.60 mm	Optional	93	26	56	5	6	0.12	995	○
5.61-6.00 mm	Optional	93	26	56	6	6	0.12	931	○
6.01-6.70 mm	Optional	101	28	64	6	6	0.12	933	○
6.71-7.05 mm	Optional	109	31	72	8	6	0.12	935	○
7.06-7.50 mm	Optional	109	31	72	8	6	0.12	937	○
7.51-8.05 mm	Optional	117	33	80	8	6	0.15	939	○
8.06-8.50 mm	Optional	117	33	80	8	6	0.15	941	○
8.51-9.05 mm	Optional	125	36	84	10	6	0.15	943	○
9.06-9.50 mm	Optional	125	36	84	10	6	0.15	945	○
9.51-10.05 mm	Optional	133	38	92	10	6	0.15	954	○
10.06-10.60 mm	Optional	133	38	92	10	6	0.15	955	○
10.61-11.05 mm	Optional	142	41	101	10	6	0.15	957	○
11.06-11.80 mm	Optional	142	41	101	10	6	0.15	958	○
11.81-12.05 mm	Optional	151	44	110	10	6	0.15	959	○
12.06-12.60 mm	Optional	151	44	110	10	6	0.15	961	○
12.61-13.20 mm	Optional	151	44	110	10	6	0.15	963	○
13.21-13.55 mm	Optional	160	47	113	14	8	0.15	965	○
13.56-14.00 mm	Optional	160	47	113	14	8	0.15	967	○
14.01-14.50 mm	Optional	162	50	115	14	8	0.15	969	○
14.51-15.00 mm	Optional	162	50	115	14	8	0.18	971	○
15.01-15.50 mm	Optional	170	52	123	14	8	0.18	973	○
15.51-16.00 mm	Optional	170	52	123	14	8	0.18	975	○
16.01-16.50 mm	Optional	175	54	129	14	8	0.18	977	○

mm		mm	mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11624... Ident. No.	
16.51-17.00 mm	Optional	175	54	129	14	8	0.18	979	○
17.01-17.50 mm	Optional	182	56	136	14	8	0.18	981	○
17.51-18.00 mm	Optional	182	56	136	14	8	0.18	983	○
18.01-18.50 mm	Optional	189	58	140	16	8	0.2	985	○
18.51-19.00 mm	Optional	189	58	140	16	8	0.2	987	○
19.01-19.50 mm	Optional	195	60	146	16	8	0.2	989	○
19.51-20.00 mm	Optional	195	60	146	16	8	0.2	991	○

Prod. Gr. 1BK

ATORN® NC machine reamer HSSE with straight shank (diameter can be selected) (DIN Similar to 212)

For universal use up to 1000 N/mm²





Application:
for producing fit tolerances in through holes on NC machines or conventional machines up to 1000 N/mm².

Execution:
- 7–8° left-hand spiral, type B

Advantage:
- Diameter can be ordered to suit, shortest possible delivery time
- high-quality HSSE cutting material for a very long service life
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Notes:
Caution: when ordering, only enter the diameter. The tolerance cannot be selected (e.g. 8.53 mm +0.005 mm)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11625500-564	12	9	7	8	7	17	17	17	17	13	13			11	5	5			

mm		mm	mm	mm	h6 mm	z	f steel 1300 ● (mm/U)	11625... Ident. No.	
0.95-1.06 mm	0 / +0,004 mm	34	5.5	13	1	3	0.12	500	○
1.07-1.18 mm	0 / +0,004 mm	36	6.5	14	1	3	0.12	502	○
1.19-1.32 mm	0 / +0,004 mm	38	7.5	13	2	3	0.12	504	○
1.33-1.41 mm	0 / +0,004 mm	40	8	15	2	3	0.12	506	○
1.42-1.50 mm	0 / +0,004 mm	40	8	22	2	3	0.12	508	○
1.51-1.70 mm	0 / +0,004 mm	43	9	23	2	3	0.12	510	○
1.71-1.90 mm	0 / +0,004 mm	46	10	20	2	4	0.12	512	○
1.91-2.12 mm	0 / +0,004 mm	49	11	22	2	4	0.12	514	○
2.13-2.36 mm	0 / +0,004 mm	53	12	21	3	4	0.12	516	○
2.37-2.65 mm	0 / +0,004 mm	57	14	26	3	4	0.12	518	○
2.66-2.80 mm	0 / +0,004 mm	61	15	30	3	6	0.12	520	○
2.81-3.00 mm	0 / +0,004 mm	61	15	30	3	6	0.12	522	○
3.01-3.35 mm	0 / +0,004 mm	65	16	33	4	6	0.12	524	○
3.36-3.75 mm	0 / +0,004 mm	70	18	39	4	6	0.12	526	○
3.76-4.05 mm	0 / +0,004 mm	75	19	46	4	6	0.12	528	○
4.06-4.25 mm	0 / +0,004 mm	75	19	46	4	6	0.12	530	○
4.26-4.75 mm	0 / +0,004 mm	80	21	51	5	6	0.12	532	○
4.76-5.05 mm	0 / +0,004 mm	86	23	57	5	6	0.12	534	○
5.06-5.30 mm	0 / +0,004 mm	86	23	57	5	6	0.12	536	○
5.31-5.60 mm	0 / +0,004 mm	93	26	56	5	6	0.12	538	○
5.61-6.00 mm	0 / +0,005 mm	93	26	56	6	6	0.12	540	○
6.01-6.70 mm	0 / +0,005 mm	101	28	64	6	6	0.12	542	○
6.71-7.05 mm	0 / +0,005 mm	109	31	72	8	6	0.12	544	○
7.06-7.50 mm	0 / +0,005 mm	109	31	72	8	6	0.12	546	○
7.51-8.05 mm	0 / +0,005 mm	117	33	80	8	6	0.15	548	○
8.06-8.50 mm	0 / +0,005 mm	117	33	80	8	6	0.15	550	○
8.51-9.05 mm	0 / +0,005 mm	125	36	84	10	6	0.15	552	○
9.06-9.50 mm	0 / +0,005 mm	125	36	84	10	6	0.15	554	○
9.51-10.05 mm	0 / +0,005 mm	133	38	92	10	6	0.15	556	○
10.06-10.60 mm	0 / +0,005 mm	133	38	92	10	6	0.15	558	○
10.61-11.05 mm	0 / +0,005 mm	142	41	101	10	6	0.15	560	○
11.06-11.80 mm	0 / +0,005 mm	142	41	101	10	6	0.15	562	○
11.81-12.05 mm	0 / +0,005 mm	151	44	110	10	6	0.15	564	○

Prod. Gr. 1BK

HSS / HSSE rivet hole reamers and machine taper reamers

application:
for the production of conical tolerances for tapered pins and rivet holes on conventional and CNC machines.

advantage:
- wide range
- very good surfaces can be achieved
- various shaft variants
- very high feed rates can be realised
- further dimensions available on request




HSS | HSSE

ATORN® ORION® High-helix taper pin machine reamers 1:50 (DIN 2179)

for universal use up to 1000 N/mm²



Application:
for cutting tapered fit tolerances 1:50 for taper pins in accordance with DIN 258, DIN EN 22339, 28737, 28736 on conventional machines and NC machines up to 1000 N/mm².

Execution:
- 45° left-hand spiral, 1:50 taper and straight shank with retaining lugs

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)


No. 11674


No. 11678

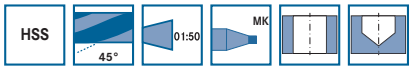
Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11674	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		
11678	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

mm	Min. Ø (mm)	Max. Ø (mm)	mm	mm	mm	z	f steel 1000 ● (mm/U)	ATORN® 11674... Ident. No.		ORION® 11678... Ident. No.	
1.5	1.4	2.14	70	37	2.1	2	0.1	015	●	-	-
2	1.9	2.86	86	48	3.15	3	0.1	020	●	020	●
2.5	2.4	3.36	86	48	3.15	3	0.1	025	●	-	-
3	2.9	4.06	100	58	4	3	0.1	030	●	030	●
4	3.9	5.26	112	68	5	3	0.1	040	●	040	●
5	4.9	6.36	122	73	6.3	3	0.1	050	●	050	●
6	5.9	8	160	105	8	3	0.1	060	●	060	●
6.5	6.4	8.78	188	119	8.5	3	0.15	065	○	-	-
8	7.9	10.8	207	145	10	3	0.15	080	●	080	●
10	9.9	13.4	245	175	12.5	3	0.2	100	●	100	●
12	11.8	16	290	210	16	3	0.2	120	●	120	●

ORION = Prod. Gr. 104
ATORN® = Prod. Gr. 117

ATORN® HSS machine taper shell reamer 1:50 (DIN 2180)

for universal use up to 1000N/mm²





Application:
for cutting tapered fit tolerances 1:50 for taper pins in accordance with DIN 258, DIN EN 22339, 28737, 28736 on conventional machines and NC machines up to 1000 N/mm².

Execution:
- 45° left-hand spiral, 1:50 taper and straight shank with retaining lugs

Advantage:
- good bore hole quality (dimensional tolerance, roundness, surface quality)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11675	12	9	7	8	7	17	17	17	17	13	13	13		11	5	5	5		

mm	Min. Ø (mm)	Max. Ø (mm)	mm	mm	z		f steel 1000 ● (mm/U)	11675... Ident. No.	
8	7.9	10.8	227	145	3	MK 1	0.15	080	●
10	9.9	13.4	257	175	3	MK 1	0.15	100	●
12	11.8	16	315	210	3	MK 2	0.15	120	●
16	15.8	20.4	335	230	3	MK 2	0.15	160	●
20	19.8	24.8	377	250	3	MK 3	0.2	200	●
25	24.7	30.7	427	300	3	MK 3	0.2	250	●

Prod. Gr. 117

HSS hand reamers

application:
for manually producing H7 or 1/100 tolerances and reworking existing tolerances

advantage:
- cost-effective alternative for manual work
- longer threaded start to correctly align the reamer
- Adjustable variants
- straight and spiralised versions
- square shaft serves as carrier
- universal application





HSS | H7 | 0,001

ATORN® ORION® Hand reamers HSS

for universal use up to 1000 N/mm²



Application:
No. 11602 015–11602 400, 11604 015–11604 400: For cutting H7 fit tolerances manually in through holes or with interrupted cutting conditions up to 1000 N/mm².
No. 11603: For cutting H7 fit tolerances manually in the blind hole up to 1000 N/mm².

Execution:
- 7-8° left-hand spiral, uneven pitch and long notch shape

Advantage:
- Good bore hole quality (dimensional tolerance, roundness, surface quality)



No. 11602 015–11602 400, 11604 015–11604 400



No. 11603

Application No.	Steel (N/mm²) <700	<1000	<1300	Stainless steel marten.	austen.	Alu short	long	Brass short	long	Bronze short	long	Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat. <55 HRC	<65 HRC
11602	●	●	○	○	○	●	○	●	○	●	○	○		○	○	○			
11603	●	●	○	○	○	●	○	●	○	●	○	○		○	○	○			
11604	●	●	○	○	○	●	○	●	○	●	○	○		○	○	○			

						ATORN®		ORION®		ATORN®	
					Form	B		B		A	
					Groove type	Left-hand twist, 7-8°		Left-hand twist, 7-8°		Straight	
mm		mm	mm	z	mm	11602... Ident. No.		11604... Ident. No.		11603... Ident. No.	
1.5	H7	41	20	4	1.12	015	●	015	●	-	-
2	H7	50	25	4	1.6	020	●	020	●	020	●
2.5	H7	58	29	4	2	025	●	025	●	-	-
3	H7	62	31	6	2.24	030	●	030	●	030	●
3.5	H7	71	35	6	2.8	035	●	035	●	-	-
4	H7	76	38	6	3.15	040	●	040	●	040	●
4.5	H7	81	41	6	3.55	045	●	045	●	-	-
5	H7	87	44	6	4	050	●	050	●	050	●
6	H7	93	47	6	4.5	060	●	060	●	060	●
7	H7	107	54	6	5.6	070	●	070	●	-	-
8	H7	115	58	6	6.3	080	●	080	●	080	●
9	H7	124	62	6	7.1	090	●	090	●	090	●
10	H7	133	66	6	8	100	●	100	●	100	●
11	H7	142	71	8	9	110	●	110	●	-	-
12	H7	152	76	8	10	120	●	120	●	120	●
13	H7	152	76	8	10	130	●	130	●	-	-
14	H7	163	81	8	11.2	140	●	140	●	140	●
15	H7	163	81	8	11.2	150	●	150	●	-	-
16	H7	175	87	8	12.5	160	●	160	●	160	●
17	H7	175	87	8	12.5	-	-	170	●	170	●
18	H7	188	93	8	14	180	●	180	●	180	●
19	H7	188	93	8	14	-	-	190	●	-	-
20	H7	201	100	10	16	200	●	200	●	200	●
22	H7	215	107	10	18	220	●	220	●	-	-
24	H7	231	115	10	20	240	●	240	●	-	-
25	H7	231	115	10	20	250	●	250	●	-	-
26	H7	231	115	10	20	-	-	260	●	-	-
28	H7	247	124	10	22.4	-	-	280	●	-	-
30	H7	247	124	10	22.4	300	●	300	●	-	-
32	H7	265	133	12	25	320	●	320	●	-	-
35	H7	284	142	12	28	350	●	350	●	-	-
40	H7	305	152	12	31.5	400	●	400	●	-	-

ORION = Prod. Gr. 104
ATORN® = Prod. Gr. 117

ATORN® HSS hand reamer set (DIN 206)

for universal use up to 1000N/mm²

HSS | H7 | ≈7-8°

Application:
For cutting H7 fit tolerances manually in through holes or with interrupted cutting conditions up to 1000 N/mm².

Execution:
- 7-8° left-hand spiral, uneven pitch and long notch shape

Advantage:
- Good bore hole quality (dimensional tolerance, roundness, surface quality)



Composition of set		Diameters 1.5/2/2.5/3/3.5/4/4.5/5/5.5/6/6.6/7/7.5/8/8.5/9/9.5/10
Tolerance of fit		H7
Number of pieces in assortment/set (PCS)		19
11602...	Ident. No.	900
		●

Prod. Gr. 117

Application No.	Steel (N/mm²) <700	<1000	<1300	Stainless steel marten.	austen.	Alu short	long	Brass short	long	Bronze short	long	Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat. <55 HRC	<65 HRC
11602900	●	●	○	○	○	●	○	●	○	●	○	○		○	○	○			

ATORN® Quick-adjustment reamer
for universal use up to 1000N/mm²

HSS



Application:
For cutting custom fit tolerances with respective adjustment range up to 1000 N/mm².

Execution:
- Straight design, the blades are relief ground eccentrically and circular ground before cutting; the circular grinding step guarantees excellent guidance and ensures centric cutting, reamer adjustment range is marked both in millimetres and inches (with setting scale from 12 mm diameter [1 increment = 0.01 mm])

Advantage:
- Individual cutting of fit tolerances by hand
- User-friendly adjustment

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11610	●	●	○	○	○	●	○	●	○	●	○	○		○	○	○			

Size	Min./max. adjustment range	Min./max. adjustment range (inch)	Cutting edge length (mm)	Shank square (mm)	Number of blades (PCS)	Quick-adjustment reamer 11610... Ident. No.		Spare blade set for quick-adjustment reamer 11612... Ident. No.		Spare nuts for quick-adjustment reamer 11614... Ident. No.	
000	6.4-7.2 mm	1/4-9/32 in	32	3	4	010	●	010	○	480	○
00	7.2-8.0 mm	9/32-5/16 in	32	3.5	4	020	●	020	○	490	○
0	8.0-9.0 mm	5/16-23/64 in	32	4.3	5	030	●	030	○	500	●
01	9.0-10.0 mm	23/64-25/64 in	32	4.3	5	040	●	040	●	510	●
02	10.0-11.0 mm	25/64-7/16 in	32	4.9	5	050	●	050	●	520	●
03	11.0-12.0 mm	7/16-15/32 in	35	6.2	5	060	●	060	○	530	●
04	12.0-13.5 mm	15/32-17/32 in	42	6.2	5	070	●	070	●	540	●
05	13.5-15.5 mm	17/32-39/64 in	50	7	5	080	●	080	○	550	●
06	15.5-18.0 mm	39/64-45/64 in	60	8	5	090	●	090	○	560	●
07	18.0-21.0 mm	45/64-53/64 in	65	9	5	100	●	100	●	570	●
08	21.0-24.0 mm	53/64-61/64 in	70	10	5	110	●	110	○	580	○
09	24.0-27.5 mm	61/64-1-5/64 in	75	11	5	120	●	120	○	590	○
10	27.5-31.5 mm	1-5/64-1-15/64 in	80	12	6	130	●	130	●	600	○
11	31.5-37.5 mm	1-15/64-1-29/64 in	90	14.5	6	140	●	140	○	610	○
12	37.0-45.0 mm	1-29/64-1-49/64 in	100	16	6	150	●	150	○	620	○
13	45.0-55.0 mm	1-49/64-2-5/32 in	109	20	6	160	●	160	●	630	○

Prod. Gr. 111

ATORN® Quick-adjustment reamer set (DIN 212)
for universal use up to 1000N/mm²

HSS



Application:
For cutting custom fit tolerances with respective adjustment range up to 1000 N/mm².

Execution:
- Straight design, the blades are relief ground eccentrically and circular ground before cutting; the circular grinding step guarantees excellent guidance and ensures centric cutting, reamer adjustment range is marked both in millimetres and inches (with setting scale from 12 mm diameter [1 increment = 0.01 mm])

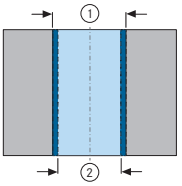
Advantage:
- Individual cutting of fit tolerances by hand
- User-friendly adjustment

Min./max. adjustment range		8.0-31.5 mm	8.0-45.0 mm
Min./max. adjustment range (inch)		21/64-115/64 in	21/64-149/64 in
Number of pieces in assortment/set (PCS)		11	13
11616...	Ident. No.	315	450
		●	●

Prod. Gr. 111

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
11616	●	●	○	○	○	●	○	●	○	●	○	○		○	○	○			

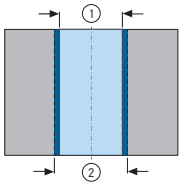
Troubleshooting when reaming



① Reaming dimension
② Nominal dimension

bore too large

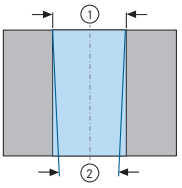
- cutting speed too high
- tool diameter too big
- built-up edges
- reamer cut too short or uneven
- excessive amount of oil in the coolant
- radial run-out of the spindle or tool
- misalignment between drill and reamer



hole too small

- cutting speed too low
- very thin-walled workpiece
- tool wear limit reached
- insufficient reaming

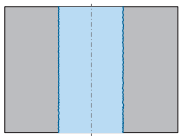
① reaming dimension ② nominal dimension



Bore hole is conical

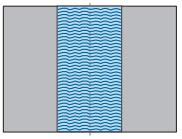
- Radial run-out of the spindle or tool
- Pre-bored hole too imprecise
- Misalignment between drill and reamer
- Incorrect angle

① Reaming dimension ② Incorrect dimension



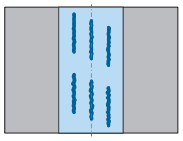
Poor surface quality

- Poor chip removal
- Cutting speed/feed too high
- Built-up edges due to insufficient or no cooling
- Breakages at the tool cutting edge
- Existing poor surface created during pre-drilling



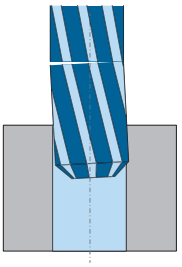
feed scoring marks in the bore hole

- breakages at the tool cutting edge
- cutting speed/feed too low
- tool wear limit reached
- built-up edges
- misalignment between drill and reamer



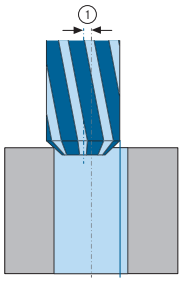
Chatter marks in the bore hole

- Built-up edges
- Insufficient amount of oil in the coolant
- Insufficient reaming
- Reamer clamped incorrectly or too loosely
- Radial run-out of the spindle or tool
- Circular grinding chamfer too narrow



Reamer grips and breaks

- Misalignment between drill and reamer
- Feed too high
- Excessive reaming
- Poor chip removal
- Circular grinding chamfer too wide
- Insufficient taper
- First cut incorrectly sanded



Incorrect bore hole position

- Misalignment between drill and reamer
- Radial run-out of the spindle or tool
- If necessary, work with bottoming reamer

① Alignment offset



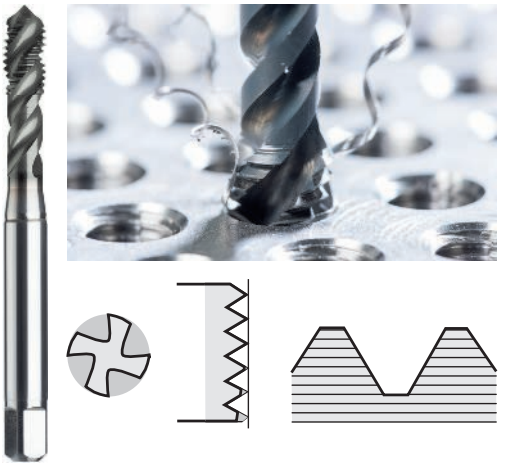
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Female thread creation: Screw tapping

When creating a thread by tapping, a core hole and counterbore must be made in the material. The screw tap carries out the cutting motion. Thus, the thread pitch determines the feed rate. Material is cut out and the chips are removed via flutes.

Advantages:
- high machining speed
- cost-effective tools
- simple tool handling and well-known procedure
- broad field of application
- use on simple machines possible
- regrindable tools

Disadvantages:
- clamping problems with very deep threads
- screw tap breakage with difficult materials
- average surface quality
- risk of axial cutting (taper)
- of the thread
- tapping chuck required

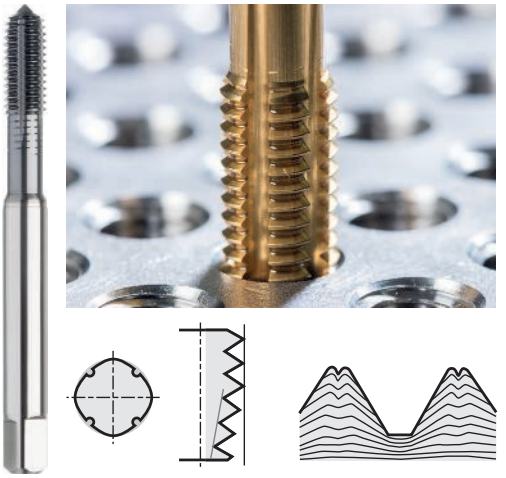


Female thread creation: Thread forming (thread tapping)

In contrast to tapping, where sections are cut out of the material, the process of thread forming does not involve cutting. The material is made to flow through the polygon shape of the thread former. The fibre pattern is not interrupted.

Advantages:
- Very high working speed and process reliability
- Very high surface quality
- One tool for through hole and blind hole
- No clamping problems
- Higher thread strength
- Tools are easier to use
- Long service life, less breakage
- Deep threads

Disadvantages:
- Higher torque
- Special pre-drilling diameter with tight tolerance
- Incomplete moulding of cores (claw)
- Minimum expansion of tool must be ensured
- Regrinding not possible
- Lubrication essential
- Where used in the food or medicine industries, there is a risk of germ build-up in the area of the moulding recess.



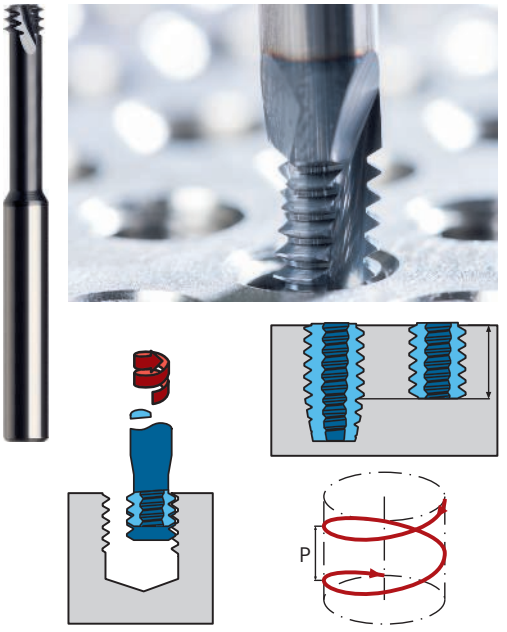
Female thread creation: Milling cutter

The development of computer-controlled machines has made the thread milling procedure another option for creating female threads. The thread is produced by the helical diagonal immersion of a rotating tool. In the process, the axial movement of the tool in one revolution produces the pitch. For this procedure, a CNC machine with at least three axes is required (XYZ).

Advantages, tool cost minimisation:
- right-hand and left-hand thread can be manufactured with a tool
- thread milling cutters cover different threads with the same pitch
- for partial thread profiles, a wide range of threads can be produced with a cutting insert

Disadvantages:
- machine requirements (XYZ axes)
- machining times generally longer in series production
- limited experience of the user in thread milling

Advantages, process reliability:
- Extremely high process reliability with very expensive components
- Reliable process solution for problem materials with poor chip breaking and difficult chip formation
- First choice with thin-walled workpieces or unstable clamping operations
- High thread quality
- Thread can be made right to the base of a blind hole
- Radius compensation programming enables thread tolerance to be adjusted easily



Thread production process at a glance

	Screw tapping	Thread forming	Milling cutter
Process reliability	○	+	++
Surface quality	○	++	+
Machining speed	+	++	○
Service life	○	++	+
Flexibility/universal use	○	+	++
Thread depth	○	++	++

○ = limited suitability | + = well suited | ++ = very well suited

Tolerances for threads



standards ensure that male and female threads of the desired form fit together. depending on the application, the appropriate tolerance must be taken into account for the screw tap or thread former. in thread milling, the tolerance can be produced as desired using radius correction. the graphic shows the different tolerance classes and their use.

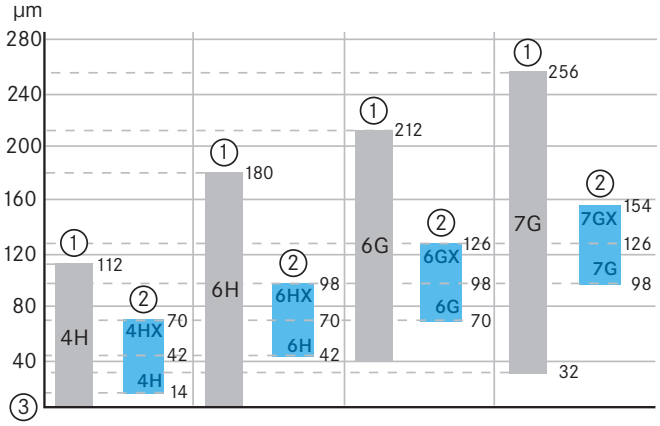
DIN EN 22857		Tolerance range of nut thread to be cut					DIN 802 part 1	Technical application
Application class of the screw tap							Tolerance class of the screw tap	
Name	Identification							
Class 1	ISO 1	4H	5H				4H	Screw connection with little play
Class 2	ISO 2			6H			6H	Standard screw connection
Class 3	ISO 3				6G		6G	Screw connection with a lot of play
–	–					7		As a preventive measure against warping in heat treatment

The graphic shows the position of the tolerance field of the nut thread in the different tolerance classes, such as 6H (highlighted in grey). The blue tolerance fields show the position of the tolerance field for the corresponding screw taps or thread formers.

It can be advantageous to produce screw taps and thread formers in a different tolerance class. This tolerance is indicated by an X after the tolerance class (e.g. 6HX instead of 6H). The X represents a manufacturer-specific tolerance and can differ between manufacturers.

Tough materials have recoiling properties. To counteract this effect, the X range is used in the ATORN thread cutting programme for these tough materials. Screw taps for titanium and nickel alloys, for example, are produced in the X range.

Where abrasive materials (those with friction or a grinding effect) are concerned, it also makes sense to produce tools in the X range. This results in a longer service life, because the screw taps are still within tolerance even having been subject to wear. The red ring screw tap for cast and short-chipping non-ferrous metals is produced in this tolerance range.



① Nut thread tolerance field ② Screw tap tolerance class ③ Tolerances

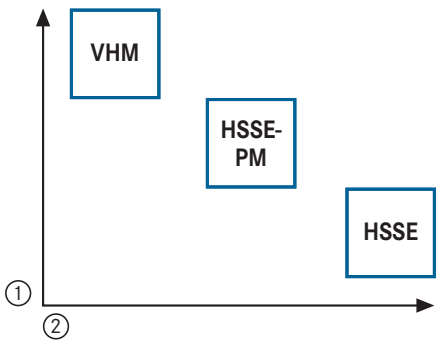
Cutting materials and cutting process during thread cutting

The following list of cutting materials is used for female thread machining in the screw tapping, thread moulding and thread milling processes. The graphic shows the toughness/breaking strength parameters in comparison to wear resistance/hardness.

SC – solid carbide
- Very high level of hardness
- Cutting material for applications up to 65 HRC
- Very high cutting speed, high precision

HSSE-PM – high speed steel, powder metal
- Cutting material for applications up to 1300 N/mm²
- Medium to high cutting speed
- High elasticity, high cutting speed

HSSE – high-speed steel
- Cutting material for applications up to 1300 N/mm²
- Low to medium cutting speeds
- 5% cobalt content
- Very high elasticity



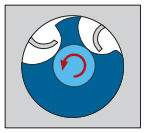
① Hardness/wear resistance/cutting speed
② Toughness/breakage resistance

Screw tapping

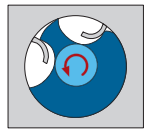
Screw tapping produces extremely high torsional forces. Particularly when producing blind holes in long-chipping materials, the chips must be broken at the changeover point. The following procedure for blind hole tapping illustrates the relationship.



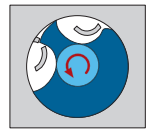
The thread is in the cutting process and guides the chips to the top.



after reaching the thread depth the switching process follows, in which the forces return to almost zero.



The chip must now be broken off through the back of the screw tap. The forces reach maximum level.

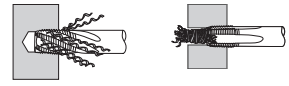
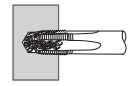


The chip is now broken off and the torque is drastically reduced.



For this reason, primarily HSSE and HSSE-PM cutting materials are used for screw taps. These cutting materials can work with all material groups except hardened materials. Solid carbide is only used as a cutting material in a few tapping applications.

If the material hardness is too high, such as in hardened material above 55 HRC, solid carbide must be used. However, solid carbide is also used as a cutting material with short-chipping materials, since torsion forces are low in these applications. The following graphic shows the various machining tasks and the appropriate cutting material for the application.

	Steel	Stainless steel	Cast metal	Non-ferrous metals	Special alloy	Hardened steels	
HSSE	ISO P	ISO M	ISO K	ISO N			
HSSE-PM	ISO P	ISO M	ISO K	ISO N	ISO S		
VHM			ISO K	ISO N		ISO H	

Coatings and surface treatments for tapping

Coatings form a protective layer between the workpiece and the cutting tool. Through the use of coatings and surface treatments, the following properties are achieved.

- Higher wear resistance
- Increased hardness
- Higher cutting speed and feed rate
- Corrosion protection
- Reduced friction
- Higher temperature resistance

We differentiate between the following coatings and surface treatments:

titanium nitride
universal layer for universal machining.
- Vickers hardness: 2200–2300 HV
- Friction coefficient: 0.5
- Temperature resistance: 500–600°C
- Colour: Gold

TiN



Titanium aluminium nitride
Universal layer for high-performance machining with high cutting speed.
- Vickers hardness: 3200 HV
- Friction coefficient of steel: 0.55
- Temperature resistance: 700-800°C
- Colour: Dark blue grey

TiAlN



Titanium carbon nitride
Its high level of hardness and excellent wear resistance make the TiCN layer suitable for machining difficult materials.
- Vickers hardness: 3500 HV
- Friction coefficient of steel: 0.2
- Temperature resistance: 400°C
- Colour: Blue grey (anthracite)

TiCN



ULTRA HL
This modern layer has been specially developed for thread machining and is currently the highest-performing layer due to being extremely smooth and very heat resistant while at the same time exhibiting low thermal conductivity. Particularly in processing stainless steel.
- Vickers hardness: 3000 HV
- Friction coefficient of steel: 0.15–0.20
- Temperature resistance: 800°C
- Colour: Dark grey

ULTRA HL



CARBO

A new type of special coating for high-performance machining of non-ferrous metals (aluminium alloys, wrought alloys), which are characterised by good emergency running properties and low edge build-up formation.

- Vickers hardness: 6000 HV
- Friction coefficient: 0.1
- Temperature resistance: 700°C
- Colour: Black



Vaporisation

This is a chemical surface treatment rather than a classic coating.

This steam treatment ensures that the lubricating film on the screw tap surface does not tear off during tapping.

Thread types and thread depths when tapping

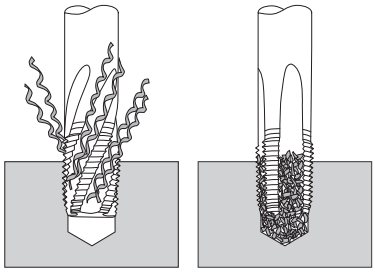
In thread machining, we distinguish between through holes and blind holes. The blind hole places the most demands on a screw tap, as the chips in long-chipping materials have to be transported upwards out of the hole and must be broken at the changeover point. As a result, spiralised screw taps must be used with long-chipping materials.

A spiralised design is not necessary with short-chipping materials, as the short chips fall into the blind hole and are rinsed out by the coolant.

As a rule, a thread depth of 3xD can be achieved in blind hole machining, depending on the material. maximum process reliability is achieved but with thread depths up to 2.5xD.

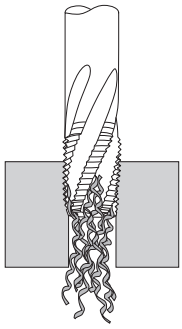
Through holes can be made with thread depths of up to 4xD. Here too, for process reliability can be expected for 3xD.

The through hole is a relatively non-critical process, as the chips are removed in the direction of feed. The chips are removed either through a spiral point or a left-hand spiral. Screw taps designed for both blind and through holes are another consideration. However, these only work with short-chipping materials or very low thread depths.

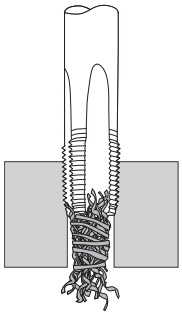


Blind hole machining with spiralised screw tap in long-chipping materials

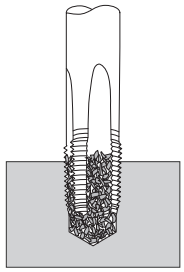
Blind hole machining with straight-grooved screw tap in short-chipping materials



Through-hole machining with left-hand spiralised screw tap in long-chipping materials



Through-hole machining with spiral point in long-chipping materials



Blind hole and through-hole machining with straight-grooved screw tap



Max. thread depth 2.5xD of blind hole
(e.g. M6 = max. thread depth 15 mm)

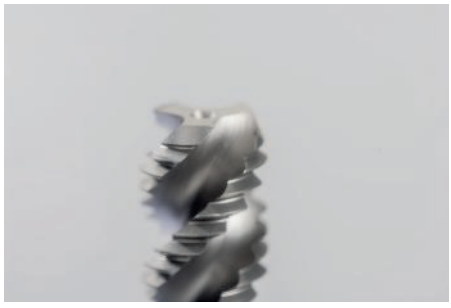


Max. thread depth 3xD of blind hole
(e.g. M6 = max. thread depth 18 mm)



Blind and through-hole machining with straight-grooved screw tap
(e.g. M6 = max. thread depth 15 mm)

Cutting point shapes and their function

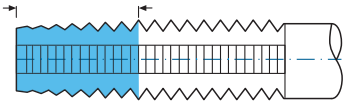


on a screw tap, the point plays an important role in the thread cutting process and is decisive when it comes to service life and thread quality.

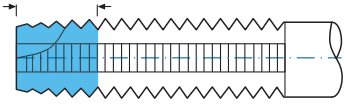
We distinguish between the following five point shapes. Apart from point shape B with a spiral point, which is only a straight-grooved shape, all other point shapes can be combined with the different chip flutes.

In principle: Longer points mean a longer service life. This a particular advantage at high quantities. However, the required torque also increases, producing higher forces. Short point shapes enable the thread to be cut nearly to the base of the hole.

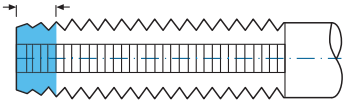
Common point shapes are B, C and E.



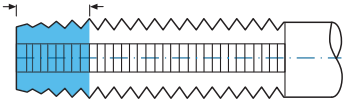

Long, 6–8 turns
for short through holes



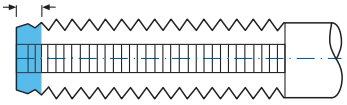

Medium, 3.5–5.5 turns
with spiral point, for all through holes and large thread depths in medium- and long-chipping materials




Short, 2–3 turns
for blind holes and generally for aluminium, grey cast iron and brass




Medium, 3.5–5 turns
for short through holes




Extremely short, 1.5–2 turns
for blind holes with a very short thread run-out; avoid if possible

Screw tapping designs

We distinguish between two fundamental designs for screw tapping. DIN 371 with reinforced shank well as DIN 376 and DIN 374 with continuous shank.



DIN 371 reinforced shank



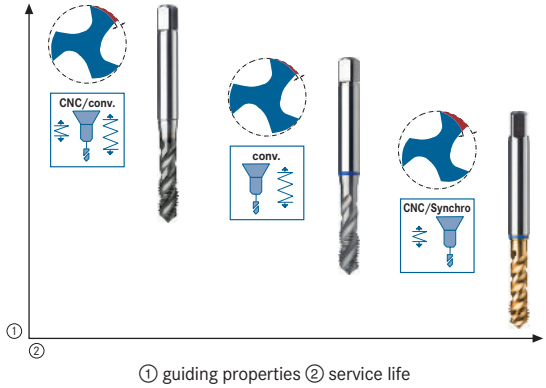
DIN 376 and DIN 374 protruding shank

Usage conditions and clearance angle

The size of the clearance angle has an effect on the service life and guiding properties of the screw tap.

A large clearance angle minimises friction and increases the service life; a smaller clearance angle improves the guidance of the screw tap.

In principle, spiralised screw taps for blind holes have a smaller clearance angle than straight-grooved screw taps. If the clearance angle were too large, the chips would jam during the reverse motion, leading to breakage of the screw tap.



① guiding properties ② service life



CNC/conventional

These screw tap types are designed for both conventional and CNC machines, and they represent a compromise between the ideal guidance and an increase in the service life through increasing the clearance angle.

This mixed type is the most common and the best solution for the majority of machining tasks.

By moderate machining conditions, we mean e.g. cutting of threads on a CNC machine in a length compensation chuck or a synchronous chuck. With this machine tap type, for example, a thread can also be cut on a conventional drill with a length compensation chuck.



Conventional use

These threaded drill types are suitable for conventional machining in the small and medium quantity range in unstable clamping conditions. Its very long guide part and the low clearance angle make these screw taps ideal in unstable machining conditions on old machines with a standard length compensation chuck or cutting by hand.

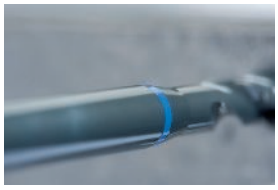


CNC/synchro

In comparison with the conventional CNC types, these screw taps are characterised by a minimal guide part and a very large clearance angle. Their very free geometry ensures a long service life in the medium to high quantity range. However, correct tool clamping must be ensured

in the synchronous chuck or as a rigidly clamped tool. In addition, the thread must be created on a synchronous CNC machine with low play. These screw taps are all equipped with an H6 shank in order that they can be clamped rigidly in a surface chuck or shrink-fit chuck.

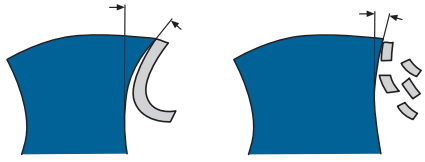
Screw tap colour ring system



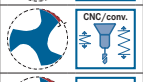
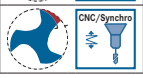
the screw tap colour ring system allows the user to quickly and reliably identify the correct screw tap for the task. each colour ring represents an ideal chip geometry for the material being processed. the colour system is based on the ISO code for indexable inserts and can therefore be understood worldwide. very universal tools do not have a ring. the graphic below shows the various geometries and their purpose.



each material has its specific characteristics and needs individual chip geometries. this means that the chip angle, clearance angle and guide length must be set to achieve an optimal result. stainless steels and steels need positive cutting to reliably penetrate the material and safely remove the chips. for processing very hard materials, the cutter must be as stable as possible.



Clamping device recommendation for screw taps

	Length compensation chuck	Synchronous tapping chuck	Collet chucks	Shrink-fit chucks	Hydro-expansion chucks	Surface chuck
						
Length compensation range	9-15 mm	0.5-1 mm	0	0	0	0
Suitable for usage conditions	Unstable	Unstable-stable (synchronous)	Stable (synchronous)	Stable (synchronous)	Stable (synchronous)	Stable (synchronous)
Suitable for conventional machines	◉	○	○	○	○	○
Suitable for CNC machines	○	●	◉	◉	◉	◉
Suitable for conventional screw taps (low relief grinding) 	◉	○	○	○	○	○
Suitable for standard screw taps (medium relief grinding) 	○	◉	◉	◉	◉	◉
Suitable for synchronous screw taps (high relief grinding) 		●	◉	◉	◉	◉

● = very well suited ◉ = suitable ○ = limited suitability

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Screw tap UNI MAX 50HL Speed
for universal use up to 1200 N/mm²

application:
machine tap for universal high-performance application up to 1200 N/mm² on modern CNC machines.
advantages:

- Universal application in steel, stainless steel, cast iron and non-ferrous metals ensures maximum flexibility and extremely long service life in series production
- Reduction in machining times of up to 50%
- Problem-solver for all tough stainless steels
- Innovative cutting geometry ensures reliable thread cutting even in stainless steel
- Ideal chip breaking in difficult machining conditions
- Ultra HL coating ensures extremely good sliding properties and tool life quantities







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13201020-100	M2-M30	HSSE-PM	ULTRA HL	ISO 2X (6HX)	●	●	●	○	●	●	
13201730-800	M3-M20	HSSE-PM	ULTRA HL	ISO 3X (6GX)	●	●	●	○	●	●	
13202020-100	M2-M30	HSSE-PM	ULTRA HL	ISO 2X (6HX)	●	●	●	○	●	●	
13202730-800	M3-M20	HSSE-PM	ULTRA HL	ISO 3X (6GX)	●	●	●	○	●	●	
13202820-900	M3-M20	HSSE-PM	ULTRA HL	ISO 3X (6GX)	●	●	●	○	●	●	
13201460-500	M6-M20	HSSE-PM	ULTRA HL	ISO 2X (6HX)	●	●	●	○	●	●	
13202460-500	M6-M20	HSSE-PM	ULTRA HL	ISO 2X (6HX)	●	●	●	○	●	●	
13202520-600	M6-M20	HSSE-PM	ULTRA HL	ISO 2X (6HX)	●	●	●	○	●	●	
13211086-203	MF8-MF20	HSSE-PM	ULTRA HL	ISO 2X (6HX)	●	●	●	○	●	●	
13204086-203	MF8-MF20	HSSE-PM	ULTRA HL	ISO 2X (6HX)	●	●	●	○	●	●	
13213010-080	G 1/8-G 1 inch	HSSE-PM	ULTRA HL		●	●	●	○	●	●	
13216010-080	G 1/8-G 1 inch	HSSE-PM	ULTRA HL		●	●	●	○	●	●	

Screw tap UNI MAX 40 + 45
for universal use up to 1000 N/mm²

Application:
Machine tap for universal high-performance use up to 1000 N/mm² both on modern CNC machines and on conventional machines.
Advantages:

- Universal application in steel, stainless steel, cast iron and non-ferrous metals ensures maximum flexibility and extremely long service life in series production
- Problem-solver for all tough stainless steels
- Innovative cutting geometry ensures reliable thread cutting even in stainless steel
- Ideal chip breaking in difficult machining conditions







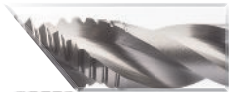
	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13217020-100	M2-M10	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13218020-100	M2-M10	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13218530-960	M2-M36	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13218620-700	M12-M20	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13217230-560	M3-M36	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13218230-760	M3-M36	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13219030-243	MF3-MF24	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13220030-303	MF3-MF30	HSSE V3	Vaporised	ISO 2 (6H)	●	●	●	○	●	○	
13221010-080	G 1/8-G 1 inch	HSSE V3	Vaporised		●	●	●	○	●	○	
13222010-080	G 1/8-G 1 inch	HSSE V3	Vaporised		●	●	●	○	●	○	

Screw tap UNI 40 black ring
for universal use up to 1000 N/mm²

application:
machine tap for universal application up to 1000 N/mm² both on modern CNC machines and on conventional machines.
advantages:

- Universal application in steel, stainless steel, cast iron and non-ferrous metals ensures maximum flexibility
- Innovative cutting geometry provides reliable thread cutting
- Wide range of cutting materials and coatings
- Good value for money





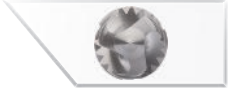


	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13121010-100	M1-M30	HSSE	Vaporised	ISO 2 (6H)	●	○	●	○	●		
13125010-100	M1-M30	HSSE	Vaporised	ISO 2 (6H)	●	○	●	○	●		
13121430-500	M3-M20	HSSE	TiN	ISO 2 (6H)	●	○	●	○	●		
13125430-500	M3-M20	HSSE	TiN	ISO 2 (6H)	●	○	●	○	●		
13049430-500	M3-M20	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	○	●		
13049030-100	M3-M20	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	○	●		
13050730-800	M3-M20	HSSE-PM	ULTRA HL	ISO 2 (6H)	●	○	●	○	●		
13050330-400	M3-M20	HSSE-PM	ULTRA HL	ISO 2 (6H)	●	○	●	○	●		
13207310-400	G 1/8-G 1 1/4 inch	HSSE	Vaporised	ISO 2 (6H)	●	○	●	○	●		
13378310-400	G 1/8-G 1 1/4 inch	HSSE	Vaporised	ISO 2 (6H)	●	○	●	○	●		

Screw tap UNI MAX 45HL Control
for universal use up to 1200 N/mm²

application:
machine tap for universal application up to 1000 N/mm² both on modern CNC machines and on conventional machines.
advantages:

- Universal application in steel, stainless steel, cast iron and non-ferrous metals ensures maximum flexibility
- Problem-solver in stainless steel machining!
- Innovative cutting geometry ensures reliable thread cutting even in stainless steel
- Ultra HL coating for very long service life in stainless steel and steel
- Broad product range in MF and G threads







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13250230-300	M3-M30	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	●	●	●	
13252230-300	M3-M30	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	●	●	●	
13103	MF6-MF24	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	●	●	●	
13315	MF6-MF24	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	●	●	●	
13208	G 1/16-G 7/8 inch	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	●	●	●	
13377	G 1/16-G 1 inch	HSSE	ULTRA HL	ISO 2 (6H)	●	○	●	●	●	●	

Screw tap UNI 40 + 50
for universal use up to 1000 N/mm²

Application:
Machine tap for universal application up to 1300 N/mm² both on modern CNC machines and on conventional machines.
Advantages:

- Universal application in steel, cast iron and non-ferrous metals, limited application in stainless steel
- Very good service life in steels and cast iron
- Wide range of cutting materials
- TiN coating for longer service life
- Wide product range, including with MF threads







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13246020-100	M2-M36	HSSE	TiN	ISO 2 (6H)	●	○	○	●	●		
13052020-100	M2-M24	HSSE	TiN	ISO 2 (6H)	●	○	○	●	●		
13247020-100	M2-M20	HSSE-PM	TiN	ISO 2 (6H)	●	○	●	●	●		
13056030-100	M3-M20	HSSE-PM	TiN	ISO 2 (6H)	●	○	●	●	●		

Screw tap Synchro MAX 50
for universal use up to 1000 N/mm²

Application:
Machine tap for universal application up to 1000 N/mm2 on modern CNC machines.
Advantages:

- Universal application in steel, cast iron, stainless steel ensures maximum flexibility
- Very good service life owing to extremely free geometry
- HSSE-PM cutting material for greater requirements on service life
- Custom clamping options owing to h6 shank design







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13058430-500	M3-M20	HSSE-PM	TiN	ISO 2 (6H)	●		●	●	●	●	
13058030-100	M3-M20	HSSE-PM	TiN	ISO 2 (6H)	●		●	●	●	●	
13248520-600	M3-M20	HSSE-PM	TiCN	ISO 2 (6H)	●		●	●	●	●	
13060520-600	M3-M20	HSSE-PM	TiCN	ISO 2 (6H)	●		●	●	●	●	

Screw tap P Max 1000 Control
for universal use up to 1000 N/mm²

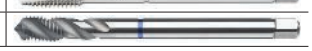
Application:
Machine tap for universal application up to 1000 N/mm² optimised for use on conventional machines.
Advantages:

- Universal application in steel, cast iron and non-ferrous metals ensures maximum flexibility
- Optimised geometry for conventional application – cutting of thread minimised
- Wide product range in M, MF







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13063	M2-M24	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13260	M3-M20	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13270020-100	M2-M36	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13100030-100	M3-M20	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13106014-100	M1,4-M24	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13267020-100	M2-M36	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13101	M1,6-M36	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13326020-100	M2-M20	HSSE	Uncoated	ISO 2 (6H)	●			●	○		

	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13320	MF3-MF36	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13144	MF3-MF40	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13335	MF8-MF20	HSSE	Uncoated	ISO 2 (6H)	●			●	○		

Screw tap P Max 1000
for universal use up to 1000 N/mm²

Application:
Machine tap for universal application up to 1000 N/mm² both on CNC machines and on conventional machines.

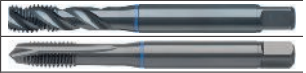
Advantages:

- Universal application in steel, cast iron and non-ferrous metals ensures maximum flexibility
- Very long service life, in particular in steel materials
- Large selection of coatings
- Wide product range in M, MF, G, NPT







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13113010-100	M1-M10	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13264020-100	M2-M20	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13115430-500	M3-M24	HSSE	TiN	ISO 2 (6H)	●			●	○		
13307030-100	M3-M20	HSSE	TiN	ISO 2 (6H)	●			●	○		
13115030-100	M3-M20	HSSE	TiCN	ISO 2 (6H)	●			●	○		
13269030-100	M3-M24	HSSE	TiCN	ISO 2 (6H)	●			●	○		
13117	M2-M36	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13283	M3-M36	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13281020-100	M2-M24	HSSE	Uncoated	ISO 2 (6H)	●			●	○		
13311	M3-M10	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13116	M3-M10	HSSE	Vaporised	ISO 3 (6G)	●			●	○		
13099030-100	M3-M10	HSSE	Vaporised	ISO 3 (6G)	●			●	○		
13108	M3 L-M10 L	HSSE	TiN	ISO 2 (6H)	●			●	○		
13113330-400	M3 L-M20 L	HSSE	TiN	ISO 2 (6H)	●			●	○		
13261	M3-M20	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13263	M4-M20	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13059	M3-M16	HSSE	Uncoated	ISO 2X (6HX)	●			●	○		
13161	MF5-MF50	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13332	MF4-MF30	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13207	G 1/8-G 1 1/4 inch	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13378	G 1/16-G 1 inch	HSSE	Vaporised	ISO 2 (6H)	●			●	○		
13228	PG 7-PG 29	HSS	Uncoated	ISO 2 (6H)	●			●	○		
13229	Tr 12-Tr 24	HSSE	Uncoated		●			○	○		
13359	NPT 1/8-NPT 1 inch	HSSE	Uncoated	ISO 2 (6H)	●			○			
13347	UNC Nr.4-UNC 3/8 inch	HSSE	Vaporised	2B	●			●	○		
13348025-110	UNC Nr.2-UNC 1 inch	HSSE	Vaporised	2B	●			●	○		
13357040-110	UNF Nr.4-UNF 5/8 inch	HSSE	Vaporised	2B	●			●	○		
13358070-110	UNF 7/16-UNF 1 inch	HSSE	Vaporised	2B	●			●	○		

Screw tap P Max 1300
for universal use up to 1300 N/mm²

Application:
Machine tap for universal application up to 1300 N/mm² both on CNC machines and on conventional machines.
Advantages:
- Very long service life in high-strength steel
- Large selection of coatings
- Wide product range in M, MF







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13130020-100	M2-M24	HSSE	Vaporised	ISO 2 (6H)	○	●					
13306020-100	M2-M12	HSSE	Vaporised	ISO 2 (6H)	○	●					
13128030-100	M3-M20	HSSE	TiCN	ISO 2 (6H)	○	●					
13305030-100	M3-M20	HSSE	TiCN	ISO 2 (6H)	○	●					
13308	M3-M30	HSSE	Vaporised	ISO 2 (6H)	○	●					
13077030-100	M3-M10	HSSE	Vaporised	ISO 3 (6G)	○	●					
13309	M2-M10	HSSE	Vaporised	ISO 3 (6G)	○	●					

Machine tap, yellow ring, CNC/conventional
For use on stainless steel

Application:
Machine tap for application in stainless steel both on CNC machines and on conventional machines.
Advantages:
- Very long service life in stainless steel
- Large selection of coatings
- Wide product range in M, MF







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13136030-100	M3-M30	HSSE	Vaporised	ISO 2 (6H)	○		●				
13288020-100	M2-M30	HSSE	Vaporised	ISO 2 (6H)	○		●				
13107030-100	M3-M30	HSSE	TiN	ISO 2 (6H)	○		●				
13277030-100	M3-M20	HSSE	TiN	ISO 2 (6H)	○		●				
13088	M3-M10	HSSE	Uncoated	ISO 2 (6H)	○		●				
13215030-300	M3-M30	HSSE	Vaporised	ISO 2 (6H)	○		●				
13325120-300	M12-M30	HSSE	Vaporised	ISO 2 (6H)	○		●				
13274	M2-M10	HSSE	Vaporised	ISO 2 (6H)	○		●				
13143	MF4-MF50	HSSE	Vaporised	ISO 2 (6H)	○		●				
13324	MF4-MF30	HSSE	Vaporised	ISO 2 (6H)	○		●				
13360	NPT 1/8-NPT 3/4 inch	HSSE	Vaporised	ISO 2 (6H)	○		●				
13361	NPT 1/8-NPT 3/4 inch	HSSE	TiN	ISO 2 (6H)	○		●				

Machine tap, green ring, CNC/conventional
For use in non-ferrous metals

Application:
Machine tap for application in non-ferrous metals both on CNC machines and on conventional machines.
Advantages:

- Very long service life in non-ferrous metals
- Large selection of coatings and cutting materials
- CARBO coating ensures favourable sliding properties in non-ferrous metals







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13118020-100	M2-M24	HSSE	Vaporised	ISO 2X (6HX)				●			
13266020-100	M2-M24	HSSE	Uncoated	ISO 2 (6H)				●			
13345030-100	M3-M16	HSSE-PM	Carbo coating	ISO 2 (6H)				●			
13349030-100	M3-M24	HSSE-PM	Carbo coating	ISO 2 (6H)				●			
13083030-100	M3-M16	HSSE	Uncoated	ISO 2 (6H)				●			
13254030-100	M3-M20	HSSE	Uncoated	ISO 2 (6H)				●			

Machine tap, red ring, CNC/conventional
For use in cast iron and short-chipping non-ferrous metals

Application:
Machine tap for application in stainless steel both on CNC machines and on conventional machines.
Advantages:

- Very long service life in cast iron and short-chipping non-ferrous metals
- Large selection of coatings and cutting materials
- Optimised geometry for short-chipping materials







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13271030-100	M2-M24	HSSE	Nitrated	ISO 2 (6H)				○	●		
13290030-100	M3-M24	HSSE	TiAlN	ISO 2X (6HX)				○	●		
13291	M5-M10	HSSE	TiAlN	ISO 2X (6HX)				○	●		
13250	M3-M16	VHM	Uncoated	ISO 2 (6H)				○	●		

Machine tap, brown ring, CNC/conventional
For use in titanium and nickel alloys

Application:
Machine tap in titanium and nickel alloys both on CNC machines and on conventional machines.
Advantages:

- Very long service life in titanium and nickel alloys
- High-quality cutting materials and coatings ensure long service life






	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	
13134020-100	M2-M16	HSSE-PM	TiCN	ISO 2X (6HX)						○	
13286030-100	M3-M16	HSSE-PM	Vaporised	ISO 2X (6HX)						○	
13287030-100	M3-M16	HSSE-PM	TiCN	ISO 2 (6H)						○	
13203030-100	M3-M12	HSSE-PM	TiAlN	ISO 2 (6H)						○	
13313030-100	M3-M16	HSSE-PM	TiAlN	ISO 2 (6H)						○	

Machine tap, grey ring, CNC/conventional
For use in hard machining from 55-65 HRC

Application:
machine tap in hard machining both on CNC machines and on conventional machines.

Advantages:
- Very long service life in hard machining
- High-quality cutting materials and coatings ensure long service life







	Ø	Cutting material	Surface	Tol.	P 1000 N/mm²	P 1300 N/mm²	M	N	K	S	H 55HRC	H 65HRC	
13251030-100	M3-M12	VHM	TiCN	ISO 2X (6HX)							●	●	
13253060-100	M6-M12	HSSE-PM	TiCN	ISO 2 (6H)							●		
13152086-126	MF8-MF12	HSSE-PM	TiCN	ISO 2 (6H)							●		
13153060-126	MF6-MF12	VHM	TiCN	ISO 2 (6H)							●	●	

Screw tap UNI MAX 50HL Speed
for universal use up to 1200 N/mm²

application:
machine tap for universal high-performance application up to 1200 N/mm² on modern CNC machines.

advantages:
- Universal application in steel, stainless steel, cast iron and non-ferrous metals ensures maximum flexibility and extremely long service life in series production
- Reduction in machining times of up to 50%
- Problem-solver for all tough stainless steels
- Innovative cutting geometry ensures reliable thread cutting even in stainless steel
- Ideal chip breaking in difficult machining conditions
- Ultra HL coating ensures extremely good sliding properties and tool life quantities







ATORN® Machine tap HSSE-PM Ultra HL
For universal use in series production, up to 1200 N/mm²




No. 13201


No. 13202

Application:
No. 13201: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast and special alloys material groups up to a strength of 1200 N/mm².
No. 13202: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals and cast material groups up to a strength of 1200 N/mm²

Advantage:
- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13201020-100	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13201120-300	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13202020-100	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13202120-300	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		

Cutting material													HSSE-PM				HSSE-PM		
Surface													ULTRA HL				ULTRA HL		
Tol.													ISO 2X (6HX)				ISO 2X (6HX)		
Lead angle shape													B				C		
Application type/machine type													CNC | Conventional				CNC | Conventional		
Twist angle													0°				50° (right)		
Coolant supply													External				External		
	mm		mm		mm		mm		mm		mm		DIN	13201... Ident. No.			13202... Ident. No.		
M2	0.4		1.6		45		2.8		2.1				371	020	●		020	●	
M2.5	0.45		2.05		50		2.8		2.1				371	025	●		025	●	
M3	0.5		2.5		56		3.5		2.7				371	030	●		030	●	
M4	0.7		3.3		63		4.5		3.4				371	040	●		040	●	
M5	0.8		4.2		70		6		4.9				371	050	●		050	●	
M6	1		5		80		6		4.9				371	060	●		060	●	
M8	1.25		6.8		90		8		6.2				371	080	●		080	●	
M10	1.5		8.5		100		10		8				371	100	●		100	●	
M12	1.75		10.2		110		9		7				376	120	●		120	●	
M14	2		12		110		11		9				376	140	●		140	●	
M16	2		14		110		12		9				376	160	●		160	●	
M20	2.5		17.5		140		16		12				376	200	●		200	●	
M24	3		21		160		18		14.5				376	240	●		240	●	
M27	3		24		160		20		16				376	270	●		270	●	
M30	3.5		26.5		180		22		18				376	300	●		300	●	

Prod. Gr. 1KA

ATORN® Machine tap HSSE-PM Ultra HL ISO3X

For universal use in series production, up to 1200 N/mm²

M | ≤3xd | ≤2,5xd | HSSE-PM | ULTRA HL | ISO 3 x | B (3,5-5) | C (2-3) | CNC/conv.



No. 13201



No. 13202

Application:

No. 13201: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast and special alloys material groups up to a strength of 1200 N/mm².

No. 13202: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals and cast material groups up to a strength of 1200 N/mm²

Advantage:

- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13201730-800	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13201820-900	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13202730-800	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13202820-900	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		

Cutting material																		HSSE-PM		HSSE-PM	
Surface																		ULTRA HL		ULTRA HL	
Tol.																		ISO 3X (6GX)		ISO 3X (6GX)	
Lead angle shape																		B		C	
Application type/machine type																		CNC | Conventional		CNC | Conventional	
Twist angle																		0°		50° (right)	
Coolant supply																		External		External	
	mm		mm		mm		mm		mm			DIN	13201... Ident. No.		13202... Ident. No.	
M3	0.5		2.5		56		3.5		2.7			371	730	●	730	●
M4	0.7		3.3		63		4.5		3.4			371	740	●	740	●
M5	0.8		4.2		70		6		4.9			371	750	●	750	●
M6	1		5		80		6		4.9			371	760	●	760	●
M8	1.25		6.8		90		8		6.2			371	780	●	780	●
M10	1.5		8.5		100		10		8			371	800	●	800	●
M12	1.75		10.2		110		9		7			376	820	●	820	●
M16	2		14		110		12		9			376	860	●	860	●
M20	2.5		17.5		140		16		12			376	900	●	900	●

Prod. Gr. 1KA

ATORN® Machine tap HSSE-PM Ultra HL IC axial

for universal series use up to 1200 N/mm2 with internal cooling

M | ≤3xd | ≤2,5xd | HSSE-PM | ULTRA HL | ISO 2 x | B (3,5-5) | C (2-3) | IK | CNC/conv.



No. 13201



No. 13202

Application:

No. 13201: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast and special alloys material groups up to a strength of 1200 N/mm².

No. 13202: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals and cast material groups up to a strength of 1200 N/mm²

Advantage:

- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13201460-500	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13201520-600	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13202460-500	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13202520-600	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		

Cutting material																		HSSE-PM		HSSE-PM	
Surface																		ULTRA HL		ULTRA HL	
Tol.																		ISO 2X (6HX)		ISO 2X (6HX)	
Lead angle shape																		B		C	
Application type/machine type																		CNC | Conventional		CNC | Conventional	
Twist angle																		0°		50° (right)	
Coolant supply																		Internal		Internal	
	mm		mm		mm		mm		mm			DIN	13201... Ident. No.		13202... Ident. No.	
M6	1		5		80		6		4.9			371	460	●	460	●
M8	1.25		6.8		90		8		6.2			371	480	●	480	●

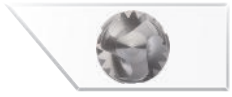
						Cutting material	HSSE-PM		HSSE-PM	
						Surface	ULTRA HL		ULTRA HL	
						Tol.	ISO 2X (6HX)		ISO 2X (6HX)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		50° (right)	
						Coolant supply	Internal		Internal	
	mm	mm	mm	mm	mm	DIN	13201... Ident. No.		13202... Ident. No.	
M10	1.5	8.5	100	10	8	371	500	●	500	●
M12	1.75	10.2	110	9	7	376	520	●	520	●
M16	2	14	110	12	9	376	560	●	560	●
M20	2.5	17.5	140	16	12	376	600	●	600	●

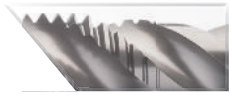
Prod. Gr. 1KA

Screw tap UNI MAX 45HL Control
for universal use up to 1200 N/mm²

application:
machine tap for universal application up to 1000 N/mm² both on modern CNC machines and on conventional machines.

advantages:
- Universal application in steel, stainless steel, cast iron and non-ferrous metals ensures maximum flexibility
- Problem-solver in stainless steel machining!
- Innovative cutting geometry ensures reliable thread cutting even in stainless steel
- Ultra HL coating for very long service life in stainless steel and steel
- Broad product range in MF and G threads







ATORN® Machine tap, HSSE Ultra HL
for universal use up to 1000 N/mm²




No. 13250


No. 13252

Application:
No. 13250: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1000 N/mm².

No. 13252: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1000 N/mm² in individual part and series production.

Execution:
- structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:
- ideal for long service life requirements and materials that are difficult to machine, such as stainless steel
- Innovative cutting geometry and ULTRA HL coating guarantee high process reliability even under difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13250230-300	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		
13250320-500	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		
13252230-300	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		
13252320-500	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		

						Cutting material	HSSE		HSSE	
						Surface	ULTRA HL		ULTRA HL	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		35° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13250... Ident. No.		13252... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	230	●	230	●
M4	0.7	3.3	63	4.5	3.4	371	240	●	240	●
M5	0.8	4.2	70	6	4.9	371	250	●	250	●
M6	1	5	80	6	4.9	371	260	●	260	●
M8	1.25	6.8	90	8	6.2	371	280	●	280	●
M10	1.5	8.5	100	10	8	371	300	●	300	●
M12	1.75	10.2	110	9	7	376	320	●	320	●
M14	2	12	110	11	9	376	340	●	340	●
M16	2	14	110	12	9	376	360	●	360	●
M18	2.5	15.5	125	14	11	376	380	●	380	●
M20	2.5	17.5	140	16	12	376	400	●	400	●
M24	3	21	160	18	14.5	376	440	●	440	●
M30	3.5	26.5	180	22	18	376	500	●	500	●

Prod. Gr. 1KA

Screw tap UNI MAX 40 + 45
for universal use up to 1000 N/mm²

Application:
Machine tap for universal high-performance use up to 1000 N/mm² both on modern CNC machines and on conventional machines.

Advantages:
- Universal application in steel, stainless steel, cast iron and non-ferrous metals ensures maximum flexibility and extremely long service life in series production
- Problem-solver for all tough stainless steels
- Innovative cutting geometry ensures reliable thread cutting even in stainless steel
- Ideal chip breaking in difficult machining conditions







ATORN® HSSE V3 machine tap
for universal use up to 1200 N/mm²

M | ≤3xd | ≤2,5xd | HSSE V3 | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.

Application:
No. 13217: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast and special alloys material groups up to a strength of 1200 N/mm².
No. 13218: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals and cast material groups up to a strength of 1200 N/mm²

Advantage:
- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions


No. 13217


No. 13218 020–13218 100


No. 13218 530–13218 700

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13217020-100	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		
13218020-100	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		
13218620-700	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		

Cutting material							HSSE V3		HSSE V3		HSSE V3	
Surface							Vaporised		Vaporised		Vaporised	
Tol.							ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		C		C	
Application type/machine type							CNC | Conventional		CNC | Conventional		CNC | Conventional	
Twist angle							0°		40° (right)		45° (right)	
Coolant supply							External		External		External	
	mm	mm	mm	mm	mm	DIN	13217... Ident. No.		13218... Ident. No.		13218... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●	020	●	-	-
M2.5	0.45	2.05	50	2.8	2.1	371	025	●	025	●	-	-
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●	530	●
M3.5	0.6	2.9	56	4	3	371	035	●	035	●	-	-
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●	540	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●	550	●
M6	1	5	80	6	4.9	371	060	●	060	●	560	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●	580	●
M10	1.5	8.5	100	10	8	371	100	●	100	●	600	●
M12	1.75	10.2	110	9	7	376	-	-	-	-	620	●
M16	2	14	110	12	9	376	-	-	-	-	660	●
M20	2.5	12.5	140	16	12	376	-	-	-	-	700	●

Prod. Gr. 1KA

ATORN® machine tap HSSE V3 (DIN 376)
for universal use up to 1200 N/mm²

M | ≤3xd | ≤2,5xd | HSSE V3 | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.

Application:
No. 13217: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast and special alloys material groups up to a strength of 1200 N/mm².
No. 13218: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of 1200 N/mm²

Advantage:
- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions


No. 13217


No. 13218

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13217230-560	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		
13218230-760	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		

| | | | | | | |

Cutting material							HSSE		HSSE		HSSE		HSSE	
Surface							Vaporised		Vaporised		TiN		TiN	
Tol.							ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		C		B		C	
Application type/machine type							CNC | Conventional		CNC | Conventional		CNC | Conventional		CNC | Conventional	
Twist angle							0°		40° (right)		0°		40° (right)	
Coolant supply							External		External		External		External	
	mm	mm	mm	mm	mm	DIN	13121... Ident. No.		13125... Ident. No.		13121... Ident. No.		13125... Ident. No.	
M1	0.25	0.75	40	2.5	2.1	371	010	●	010	●	-	-	-	-
M1.2	0.25	0.95	40	2.5	2.1	371	012	●	012	●	-	-	-	-
M1.4	0.3	1.1	40	2.5	2.1	371	014	●	014	●	-	-	-	-
M1.6	0.35	1.25	40	2.5	2.1	371	016	●	016	●	-	-	-	-
M1.7	0.35	1.35	40	2.5	2.1	371	017	●	017	●	-	-	-	-
M1.8	0.35	1.45	40	2.5	2.1	371	018	●	018	●	-	-	-	-
M2	0.4	1.6	45	2.8	2.1	371	020	●	020	●	-	-	-	-
M2.2	0.45	1.75	45	2.8	2.1	371	022	●	022	●	-	-	-	-
M2.3	0.4	1.9	45	2.8	2.1	371	023	●	023	●	-	-	-	-
M2.5	0.45	2.05	50	2.8	2.1	371	025	●	025	●	-	-	-	-
M2.6	0.45	2.15	50	2.8	2.1	371	026	●	026	●	-	-	-	-
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●	430	●	430	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●	440	●	440	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●	450	●	450	●
M6	1	5	80	6	4.9	371	060	●	060	●	460	●	460	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●	480	●	480	●
M10	1.5	8.5	100	10	8	371	100	●	100	●	500	●	500	●
M12	1.75	10.2	110	9	7	376	120	●	120	●	520	●	520	●
M16	2	14	110	12	9	376	160	●	160	●	560	●	560	●
M20	2.5	17.5	140	16	12	376	200	●	200	●	600	●	600	●
M24	3	21	160	18	14.5	376	240	●	240	●	-	-	-	-
M27	3	24	160	20	16	376	270	●	270	●	-	-	-	-
M30	3.5	26.5	180	22	18	376	300	●	300	●	-	-	-	-

Prod. Gr. 1KA

ATORN® HSSE/HSSE-PM ULTRA HL machine tap

for universal use up to 1000 N/mm²





No. 13049 430–13049 600, 13050 500–13050 900



No. 13049 030–13049 200, 13050 330–13050 460

Application:

No. 13049 030–13049 200, 13050 330–13050 500: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of 1000 N/mm²

No. 13049 430–13049 600, 13050 730–13050 800: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of 1000 N/mm².

No. 13050 820–13050 900: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of 1200 N/mm².

Execution:

- **No. 13049 030–13050 800:** Structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)
- **No. 13050 820–13050 900:** Structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:

- **No. 13049 030–13049 200, 13049 520–13050 900:** Innovative cutter geometry and newly developed ULTRA HL coating ensures high process reliability even in difficult machining conditions
- **No. 13049 430–13049 500:** innovative cutting geometry and ULTRA HL coating guarantee high process reliability even under difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13049030-100	18	12	8	8	8		18		19		18	15		15					
13049120-200	18	12	8	8	8		18		19		18	15		15					
13049430-500	18	12	8	8	8		18		19		18	15		15					
13049520-600	18	12	8	8	8		18		19		18	15		15					
13050330-400	22	15	8	11	11		25		28		20	20		22					
13050420-500	22	15	8	11	11		25		28		20	20		22					
13050730-800	22	15	8	11	11		25		28		20	20		22					
13050820-900	22	15	8	11	11		25		28		20	20		22					

Cutting material							HSSE		HSSE		HSSE-PM		HSSE-PM	
Surface							ULTRA HL		ULTRA HL		ULTRA HL		ULTRA HL	
Tol.							ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		C		B		C	
Application type/machine type							CNC | Conventional		CNC | Conventional		CNC | Conventional		CNC | Conventional	
Twist angle							0°		40°		0°		40°	
Coolant supply							External		External		External		External	
	mm	mm	mm	mm	mm	DIN	13049... Ident. No.		13049... Ident. No.		13050... Ident. No.		13050... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	430	●	030	●	730	●	330	●
M4	0.7	3.3	63	4.5	3.4	371	440	●	040	●	740	●	340	●
M5	0.8	4.2	70	6	4.9	371	450	●	050	●	750	●	350	●
M6	1	5	80	6	4.9	371	460	●	060	●	760	●	360	●

							Cutting material	HSSE		HSSE		HSSE-PM		HSSE-PM	
							Surface	ULTRA HL		ULTRA HL		ULTRA HL		ULTRA HL	
							Tol.	ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C		B		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional		CNC | Conventional	
							Twist angle	0°		40°		0°		40°	
							Coolant supply	External		External		External		External	
	mm	mm	mm	mm	mm	DIN	13049... Ident. No.			13049... Ident. No.		13050... Ident. No.		13050... Ident. No.	
M8	1.25	6.8	90	8	6.2	371	480	●		080	●	780	●	380	●
M10	1.5	8.5	100	10	8	371	500	●		100	●	800	●	400	●
M12	1.75	10.2	110	9	7	376	520	●		120	●	820	●	420	●
M16	2	14	110	12	9	376	560	●		160	●	860	●	460	●
M20	2.5	17.5	140	16	12	376	600	●		200	●	900	●	500	●

Prod. Gr. 1KA

Screw tap UNI 40 + 50
for universal use up to 1000 N/mm²

Application:
Machine tap for universal application up to 1300 N/mm² both on modern CNC machines and on conventional machines.

Advantages:
- Universal application in steel, cast iron and non-ferrous metals, limited application in stainless steel
- Very good service life in steels and cast iron
- Wide range of cutting materials
- TiN coating for longer service life
- Wide product range, including with MF threads







ATORN® HSSE TiN machine tap
for universal use up to 1300 N/mm²




No. 13246


No. 13052

Application:
No. 13052: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1300 N/mm².

No. 13246: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1300 N/mm².

Execution:
- **No. 13052:** Dimensions to: DIN 371 = reinforced shank (to M10), DIN 376 = protruding shank (from M12)
- **No. 13246:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:
- **No. 13052:** Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility
- **No. 13246 020–13246 100:** good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- **No. 13246 120–13246 360:** Long service life and high level of process reliability thanks to innovative cutter geometry and universal application for maximum flexibility in use

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13052020-100	16	12	9	9	7	18	18	15	18	15	15	13	14	16					
13052120-240	16	12	9	9	7	18	18	15	18	15	15	13	14	16					
13246020-100	16	12	9	9	7	18	18	15	18	15	15	13	14	16					
13246120-360	16	12	9	9	7	18	18	15	18	15	15	13	14	16					

							Cutting material	HSSE		HSSE	
							Surface	TiN		TiN	
							Tol.	ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional	
							Twist angle	0°		40° (right)	
							Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13246... Ident. No.			13052... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●		020	●
M3	0.5	2.5	56	3.5	2.7	371	030	●		030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●		040	●
M5	0.8	4.2	70	6	4.9	371	050	●		050	●
M6	1	5	80	6	4.9	371	060	●		060	●
M8	1.25	6.8	90	8	6.2	371	080	●		080	●
M10	1.5	8.5	100	10	8	371	100	●		100	●
M12	1.75	10.2	110	9	7	376	120	●		120	●
M14	2	12	110	11	9	376	140	●		140	●
M16	2	14	110	12	9	376	160	●		160	●
M18	2.5	15.5	125	14	11	376	180	●		180	●

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

						Cutting material	HSSE		HSSE	
						Surface	TiN		TiN	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		40° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13246... Ident. No.		13052... Ident. No.	
M20	2.5	17.5	140	16	12	376	200	●	200	●
M22	2.5	19.5	140	18	14.5	376	220	●	-	-
M24	3	21	160	18	14.5	376	240	●	240	●
M27	3	24	160	20	16	376	270	●	-	-
M30	3.5	26.5	180	22	18	376	300	●	-	-
M36	4	32	200	28	22	376	360	●	-	-

Prod. Gr. 1KA

ATORN® HSSE-PM TiN machine tap

for universal use up to 1300 N/mm²

M | ≤3xd | ≤2,5xd | HSSE-PM | TiN | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13247



No. 13056

Application:

No. 13056: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of 1300 N/mm².

No. 13247: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of 1300 N/mm².

Execution:

- **No. 13056:** Dimensions to: DIN 371 = reinforced shank (to M10), DIN 376 = protruding shank (from M12)
- **No. 13247:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:

- **No. 13056:** Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility
- **No. 13247 020–13247 100:** good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- **No. 13247 120–13247 200:** Long service life and high level of process reliability thanks to innovative cutter geometry and universal application for maximum flexibility in use

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13056030-100	18	13	10	10	9	19	19	17	19	17	17	15	16	18					
13056120-200	18	13	10	10	9	19	19	17	19	17	17	15	16	18					
13247020-100	18	13	10	10	9	19	19	17	19	17	17	15	16	18					
13247120-200	18	13	10	10	9	19	19	17	19	17	17	15	16	18					

						Cutting material	HSSE-PM		HSSE-PM	
						Surface	TiN		TiN	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		50° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13247... Ident. No.		13056... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●	-	-
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M14	2	12	110	11	9	376	140	●	140	●
M16	2	14	110	12	9	376	160	●	160	●
M18	2.5	15.5	125	14	11	376	180	●	-	-
M20	2.5	17.5	140	16	12	376	200	●	200	●

Prod. Gr. 1KA

Screw tap Synchro MAX 50
for universal use up to 1000 N/mm²

Application:
Machine tap for universal application up to 1000 N/mm2 on modern CNC machines.

Advantages:

- Universal application in steel, cast iron, stainless steel ensures maximum flexibility
- Very good service life owing to extremely free geometry
- HSSE-PM cutting material for greater requirements on service life
- Custom clamping options owing to h6 shank design







ATORN® Synchro tap HSSE-PM TiN H6 shank
For universal use up to 1000 N/mm²




Ident. No. 430–600


Ident. No. 030–200

Application:
Ident. No. 030–200: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1000 N/mm².

Ident. No. 430–600: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1000 N/mm².

Execution:

- **Ident. No. 030–100:** Dimensions to: DIN 371 = reinforced shank (to M10), DIN 376 = protruding shank (from M12)
- **Ident. No. 120–600:** Dimensions pursuant to: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)

Advantage:

- Precise shank design: h6
- **Ident. No. 030–100:**
  - Long service life and process reliability through innovative cutting geometry and coating for universal use for maximum application flexibility
  - Individual clamping options: Shrink-fit chuck, synchronous tapping chuck
- **Ident. No. 120–200:** Individual clamping options: Shrink-fit chucks, synchro tapping chuck
- **Ident. No. 120–600:** Long service life and high level of process reliability thanks to innovative cutting geometry and coating, and universal application for maximum flexibility in use
- **Ident. No. 430–600:** Individual clamping options: Shrink-fit chuck, synchro tapping chuck

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13058030-100	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		
13058120-200	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		
13058430-500	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		
13058520-600	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		

Cutting material													HSSE-PM					HSSE-PM		
Surface													TiN					TiN		
Tol.													ISO 2 (6H)					ISO 2 (6H)		
Lead angle shape													B					C		
Application type/machine type													CNC					CNC		
Twist angle													0°					50° (right)		
Coolant supply													External					External		
	mm		mm		mm		mm		mm		mm	DIN	13058... Ident. No.					13058... Ident. No.		
M3	0.5		2.5		56		3.5		2.7			371	430	●				030	●	
M4	0.7		3.3		63		4.5		3.4			371	440	●				040	●	
M5	0.8		4.2		70		6		4.9			371	450	●				050	●	
M6	1		5		80		6		4.9			371	460	●				060	●	
M8	1.25		6.8		90		8		6.2			371	480	●				080	●	
M10	1.5		8.5		100		10		8			371	500	●				100	●	
M12	1.75		10.2		110		9		7			376	520	●				120	●	
M14	2		12		110		11		9			376	540	●				140	●	
M16	2		14		110		12		9			376	560	●				160	●	
M20	2.5		17.5		140		16		12			376	600	●				200	●	

Prod. Gr. 1KA

ATORN® Synchro screw tap HSSE-PM TiCN HB shank

For universal use up to 1000 N/mm²

M | ≤3xd | ≤2,5xd | HSSE-PM | TiCN | ISO 2 | B (3,5-5) | C (2-3) | CNC/Synchro



No. 13248



No. 13060

Application:

No. 13060: For manufacturing metric threads in blind holes on CNC or conventional machines in the steel, stainless steel, NF metal, cast and special alloy material groups up to a strength of 1000 N/mm².

No. 13248: For producing metric threads in the through hole on CNC or conventional machines for the material groups of steel, stainless steel, non-ferrous metals, cast iron and special alloys up to a strength of 1000 N/mm².

Execution:

- **No. 13060 530–13060 600:** Synchro machine tap with transition-fit H6 shank and clamping surface
- **No. 13060 620–13248 700:** Synchro machine tap with overrun H6 shank and clamping surface

Advantage:

- Individual clamping options: Shrink-fit chucks, synchro tapping chucks and surface chucks
- Precise shank design: h6
- **No. 13060:** Long service life and high level of process reliability thanks to innovative cutting geometry and coating, and universal application for maximum flexibility in use
- **No. 13248:** good service life and process reliability thanks to innovative cutting geometry and coating as well as universal use for the greatest flexibility in applications

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13060520-600	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		
13060620-700	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		
13248520-600	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		
13248620-700	22	15		12	10	24	24	20	20	18	18	16		18	7	6	6		

| | | | | | | |

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13063	16	11		9		18	18	15	18	15	15	13		16					
13064	15	10		9		18	18	15	18	15	15	13		16					
13260	16	11		9		18	18	15	18	15	15	13		16					

	ATORN®	ORION®	ATORN®
Cutting material	HSSE	HSSE	HSSE
Surface	Uncoated	Uncoated	Uncoated
Tol.	ISO 2 (6H)	ISO 2 (6H)	ISO 2 (6H)
Lead angle shape	B	B	C
Application type/machine type	Conventional	Conventional	Conventional
Twist angle	0°	0°	15° (right)
Coolant supply	External	External	External

						DIN	13063... Ident. No.		13064... Ident. No.		13260... Ident. No.	
	mm	mm	mm	mm	mm							
M2	0.4	1.6	36	2.8	2.1	352	020	●	020	●	-	-
M2.5	0.45	2.05	36	2.8	2.1	352	025	●	025	●	-	-
M3	0.5	2.5	40	3.5	2.7	352	030	●	030	●	030	●
M4	0.7	3.3	45	4.5	3.4	352	040	●	040	●	040	●
M5	0.8	4.2	50	6	4.9	352	050	●	050	●	050	●
M6	1	5	50	6	4.9	352	060	●	060	●	060	●
M8	1.25	6.8	56	6	4.9	352	080	●	080	●	080	●
M10	1.5	8.5	70	7	5.5	352	100	●	100	●	100	●
M12	1.75	10.2	75	9	7	352	120	●	120	●	120	●
M16	2	14	80	12	9	352	160	●	160	●	160	●
M18	2.5	15.5	95	14	11	352	180	●	-	-	-	-
M20	2.5	17.5	95	16	12	352	200	●	-	-	200	●
M22	2.5	19.5	100	18	14.5	352	220	●	-	-	-	-
M24	3	21	110	18	14.5	352	240	●	-	-	-	-

ORION = Prod. Gr. 1DB
ATORN® = Prod. Gr. 1KA

ATORN® ORION® Machine tap, HSSE

For universal conventional use up to 1000 N/mm²



M | ≤3xd | HSSE | ISO 2 | C (2-3) | conv.

Application:
For producing metric threads on conventional machines in **blind holes and through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- **No. 13270:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)
- **No. 13323:** Dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)

Advantage:
- **No. 13270:** Long service life and good process reliability due to innovative cutting geometry and universal use for maximum application versatility
- **No. 13323:** Long service life and high process reliability thanks to innovative cutting geometry, and universal use for maximum flexibility in use.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13270020-100	16	11		9		18	18	15	18	15	15	13		16					
13270120-360	16	11		9		18	18	15	18	15	15	13		16					
13323030-100	16	11		9		18	18	15	18	15	15	13		16					
13323120	16	11		9		18	18	15	18	15	15	13		16					

	ATORN®	ORION®
Cutting material	HSSE	HSSE
Surface	Uncoated	Uncoated
Tol.	ISO 2 (6H)	ISO 2 (6H)
Lead angle shape	C	C
Application type/machine type	Conventional	Conventional
Twist angle	0°	0°
Coolant supply	External	External

						DIN	13270... Ident. No.		13323... Ident. No.	
	mm	mm	mm	mm	mm					
M2	0.4	1.6	45	2.8	2.1	371	020	●	-	-
M2.5	0.45	2.05	50	2.8	2.1	371	025	●	-	-
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M14	2	12	110	11	9	376	140	●	-	-
M16	2	14	110	12	9	376	160	●	-	-
M18	2.5	15.5	125	14	11	376	180	●	-	-
M20	2.5	17.5	140	16	12	376	200	●	-	-
M24	3	21	160	18	14.5	376	240	●	-	-
M30	3.5	26.5	180	22	18	376	300	●	-	-
M36	4	32	200	28	22	376	360	●	-	-

ORION = Prod. Gr. 1DB
ATORN® = Prod. Gr. 1KA

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® Machine tap, HSSE

For universal conventional use up to 1000 N/mm²





Optimised for machining in a fixed tool e.g. lathes. Left-hand spiral removes the chips in the direction of cutting. Ideal for uninterrupted cutting.

Application:
For producing metric threads on conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- Dimensions pursuant to: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)

Advantage:
- Long service life and high level of process reliability thanks to innovative cutting geometry and universal application for maximum flexibility in use
- Reliable chip removal through a 15° left-hand spiral in long-chipping materials

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13100030-100	16	11		9		18	18	15	18	15	15	13		16					
13100120-200	16	11		9		18	18	15	18	15	15	13		16					

Cutting material	HSSE
Surface	Uncoated
Tol.	ISO 2 (6H)
Lead angle shape	D
Application type/machine type	Conventional
Twist angle	15° (left)
Coolant supply	External

	mm	mm	mm	mm	mm	DIN	13100... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●
M5	0.8	4.2	70	6	4.9	371	050	●
M6	1	5	80	6	4.9	371	060	●
M8	1.25	6.8	90	8	6.2	371	080	●
M10	1.5	8.5	100	10	8	371	100	●
M12	1.75	10.2	110	9	7	376	120	●
M14	2	12	110	11	9	376	140	●
M16	2	14	110	12	9	376	160	●
M20	2.5	17.5	140	16	12	376	200	●

Prod. Gr. 1KA

ATORN® Machine tap, HSSE

For universal conventional use up to 1000 N/mm²





No. 13106



No. 13267

Application:
No. 13106: For producing metric threads on conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².
No. 13267: For producing metric threads on conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- **No. 13106:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)
- **No. 13267:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- **No. 13106:** good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- **No. 13267:** Long service life and good process reliability due to innovative cutting geometry and universal use for maximum application versatility

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13106014-100	16	11		9		18	18	15	18	15	15	13		16					
13106120-240	16	11		9		18	18	15	18	15	15	13		16					
13267020-100	16	12		9		18	18	15	18	15	15	13		16					
13267120-360	16	12		9		18	18	15	18	15	15	13		16					

Cutting material	HSSE	HSSE
Surface	Uncoated	Uncoated
Tol.	ISO 2 (6H)	ISO 2 (6H)
Lead angle shape	B	C
Application type/machine type	Conventional	Conventional
Twist angle	0°	40° (right)
Coolant supply	External	External

	mm	mm	mm	mm	mm	DIN	13106... Ident. No.		13267... Ident. No.	
M1.4	0.3	1.1	40	2.5	2.1	371	014	●	-	-
M1.6	0.35	1.25	40	2.5	2.1	371	016	●	-	-
M1.7	0.35	1.3	40	2.5	2.1	371	017	●	-	-
M1.8	0.35	1.45	40	2.5	2.1	371	018	●	-	-

						Cutting material	HSSE		HSSE	
						Surface	Uncoated		Uncoated	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	Conventional		Conventional	
						Twist angle	0°		40° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13106... Ident. No.		13267... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●	020	●
M2.2	0.45	1.75	45	2.8	2.1	371	022	●	-	-
M2.3	0.4	1.9	45	2.8	2.1	371	023	●	-	-
M2.5	0.45	2.05	50	2.8	2.1	371	025	●	025	●
M2.6	0.45	2.15	50	2.8	2.1	371	026	●	-	-
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M3.5	0.6	2.9	56	4	3	371	035	●	035	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M14	2	12	110	11	9	376	140	●	140	●
M16	2	14	110	12	9	376	160	●	160	●
M18	2.5	15.5	125	14	11	376	-	-	180	●
M20	2.5	17.5	140	16	12	376	200	●	200	●
M24	3	21	160	18	14.5	376	240	●	240	●
M30	3.5	26.5	180	22	18	376	-	-	300	●
M36	4	32	180	28	22	376	-	-	360	●

Prod. Gr. 1KA

ATORN® Machine tap, HSSE (DIN 376)

For universal conventional use up to 1000 N/mm²

M | ≤3xd | ≤2,5xd | HSSE | ISO 2 | B (3,5-5) | C (2-3) | conv.



No. 13101



No. 13326

Application:

No. 13101: For producing metric threads on conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13326: For producing metric threads on conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13101:** With protruding shank
- **No. 13326:** With transition-fit shank

Advantage:

- **No. 13101:** Long service life and high level of process reliability thanks to innovative cutting geometry and universal application for maximum flexibility in use
- **No. 13326:** Long service life and high process reliability thanks to innovative cutting geometry, and universal use for maximum flexibility in use.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13101	15	11		9		18	18	15	18	15	15	13		16					
13326020-100	16	11		9		18	18	15	18	15	15	13		16					
13326120-200	16	11		9		18	18	15	18	15	15	13		16					

							Cutting material	HSSE		HSSE	
							Surface	Uncoated		Uncoated	
							Tol.	ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C	
							Application type/machine type	Conventional		Conventional	
							Twist angle	0°		40° (right)	
							Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13101... Ident. No.		13326... Ident. No.	
M1.6	0.35	1.25	40	1.2	-	376	016	●	-	-
M1.8	0.35	1.45	40	1.2	-	376	018	●	-	-
M2	0.4	1.6	45	1.6	-	376	020	●	020	●
M2.2	0.45	1.75	45	1.6	-	376	022	●	-	-
M2.3	0.4	1.9	45	1.6	-	376	023	●	-	-
M2.5	0.45	2.05	50	1.8	-	376	025	●	025	●
M2.6	0.45	2.15	50	1.8	-	376	026	●	-	-
M3	0.5	2.5	56	2.2	-	376	030	●	030	●
M3.5	0.6	2.9	56	2.5	2.1	376	035	●	-	-
M4	0.7	3.3	63	2.8	2.1	376	040	●	040	●
M5	0.8	4.2	70	3.5	2.7	376	050	●	050	●
M6	1	5	80	4.5	3.4	376	060	●	060	●
M8	1.25	6.8	90	6	4.9	376	080	●	080	●
M10	1.5	8.5	100	7	5.5	376	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M14	2	12	110	11	9	376	140	●	140	●
M16	2	14	110	12	9	376	160	●	160	●
M18	2.5	15.5	125	14	11	376	180	●	180	●
M20	2.5	17.5	140	16	12	376	200	●	200	●
M22	2.5	19.5	140	18	14.5	376	220	●	-	-
M24	3	21	160	18	14.5	376	240	●	-	-
M27	3	24	160	20	16	376	270	●	-	-
M30	3.5	26.5	180	22	18	376	300	●	-	-
M33	3.5	29.5	180	25	20	376	330	●	-	-
M36	4	32	200	28	22	376	360	●	-	-

Prod. Gr. 1KA

Screw tap P Max 1000

for universal use up to 1000 N/mm²

Application:

Machine tap for universal application up to 1000 N/mm² both on CNC machines and on conventional machines.

Advantages:

- Universal application in steel, cast iron and non-ferrous metals ensures maximum flexibility
- Very long service life, in particular in steel materials
- Large selection of coatings
- Wide product range in M, MF, G, NPT






CNC/conv.

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® Machine tap, HSSE, vaporised

for universal use up to 1000 N/mm²

M | ≤3xd | ≤2,5xd | HSSE | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13113



No. 13264

Application:

No. 13113: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13264: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13113:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)
- **No. 13264:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:

- **No. 13113:** good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- **No. 13264:** Long service life and good process reliability due to innovative cutting geometry and universal use for maximum application versatility

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13113010-100	17	12		10		19	19	17	19	17	17	15		18					
13264020-100	17	12		10		19	19	17	19	17	17	15		18					
13264120-200	17	12		10		19	19	17	19	17	17	15		18					

Cutting material													HSSE					HSSE		
Surface													Vaporised					Vaporised		
Tol.													ISO 2 (6H)					ISO 2 (6H)		
Lead angle shape													B					C		
Application type/machine type													CNC | Conventional					CNC | Conventional		
Twist angle													0°					40° (right)		
Coolant supply													External					External		
	mm		mm		mm		mm		mm		mm	DIN	13113... Ident. No.					13264... Ident. No.		
M1	0.25		0.75		40		2.5		2.1			371	010	●				-	-	
M1.4	0.3		1.1		40		2.5		2.1			371	014	●				-	-	
M1.6	0.35		1.25		40		2.5		2.1			371	016	●				-	-	
M1.7	0.35		1.3		40		2.5		2.1			371	017	●				-	-	
M1.8	0.35		1.45		40		2.5		2.1			371	018	●				-	-	
M2	0.4		1.6		45		2.8		2.1			371	020	●				020	●	
M2.5	0.45		2.05		50		2.8		2.1			371	025	●				-	-	
M3	0.5		2.5		56		3.5		2.7			371	030	●				030	●	
M3.5	0.6		2.9		56		4		3			371	035	●				-	-	
M4	0.7		3.3		63		4.5		3.4			371	040	●				040	●	
M5	0.8		4.2		70		6		4.9			371	050	●				050	●	
M6	1		5		80		6		4.9			371	060	●				060	●	
M8	1.25		6.8		90		8		6.2			371	080	●				080	●	
M10	1.5		8.5		100		10		8			371	100	●				100	●	
M12	1.75		10.2		110		9		7			376	-	-				120	●	
M14	2		12		110		11		9			376	-	-				140	●	
M16	2		14		110		12		9			376	-	-				160	●	
M20	2.5		17.5		140		16		12			376	-	-				200	●	

Prod. Gr. 1KA

ATORN® HSSE TiN machine tap

for universal use up to 1000 N/mm²

M | ≤3xd | ≤2,5xd | HSSE | TiN | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13115



No. 13307

Application:

No. 13115: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13307: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:

- **No. 13115:** good service life and process reliability thanks to innovative cutting geometry and coating as well as universal use for the greatest flexibility in applications
- **No. 13307:** Long service life and high level of process reliability thanks to innovative cutter geometry and coating and universal application for maximum flexibility in use

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13115430-500	18	13		10		19	19	17	19	17	17	15		18					
13115520-640	18	13		10		19	19	17	19	17	17	15		18					
13307030-100	18	13		10		19	19	17	19	17	17	15		18					
13307120-200	18	13		10		19	19	17	19	17	17	15		18					

						Cutting material	HSSE		HSSE	
						Surface	TiN		TiN	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		40° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13115... Ident. No.		13307... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	430	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	440	●	040	●
M5	0.8	4.2	70	6	4.9	371	450	●	050	●
M6	1	5	80	6	4.9	371	460	●	060	●
M8	1.25	6.8	90	8	6.2	371	480	●	080	●
M10	1.5	8.5	100	10	8	371	500	●	100	●
M12	1.75	10.2	110	9	7	376	520	●	120	●
M16	2	14	110	12	9	376	560	●	160	●
M20	2.5	17.5	140	16	12	376	600	●	200	●
M24	3	21	160	18	14.5	376	640	●	-	-

Prod. Gr. 1KA

ATORN® HSSE TiCN machine tap

for universal use up to 1000 N/mm²

M | ≤3xd | ≤2,5xd | HSSE | TiCN | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13115



No. 13269

Application:

No. 13115: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13269: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13115:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)
- **No. 13269:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:

- **No. 13115 030–13115 100:** good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- **No. 13115 120–13115 200:** good service life and process reliability thanks to innovative cutting geometry and coating as well as universal use for the greatest flexibility in applications
- **No. 13269:** Long service life and good process reliability due to innovative cutting geometry and universal use for maximum application versatility

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13115030-100	18	13		10		19	19	17	19	17	17	15		18					
13115120-200	18	13		10		19	19	17	19	17	17	15		18					
13269030-100	18	13		10		19	19	17	19	17	17	15		18					
13269120-240	18	13		10		19	19	17	19	17	17	15		18					

						Cutting material	HSSE		HSSE	
						Surface	TiCN		TiCN	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		40° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13115... Ident. No.		13269... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M3.5	0.6	2.9	56	4	3	371	-	-	035	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M16	2	14	110	12	9	376	160	●	160	●
M14	2	12	110	11	9	376	-	-	140	●
M18	2.5	15.5	125	14	11	376	-	-	180	●
M20	2.5	17.5	140	16	12	376	200	●	200	●
M22	2.5	19.5	140	18	14.5	376	-	-	220	●
M24	3	21	160	18	14.5	376	-	-	240	●

Prod. Gr. 1KA

ATORN® ORION® Machine tap, HSSE, vaporised (DIN 376)

for universal use up to 1000 N/mm²

M | ≤3xd | ≤2,5xd | HSSE | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13117–13119



No. 13283–13321

Application:

No. 13117–13119: For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13283–13321: For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13117 020–13117 360, 13283 030–13283 360:** with over-long shank
- **No. 13119:** With protruding shank
- **No. 13321:** With transition-fit shank

Advantage:

- **No. 13117 020–13117 360, 13283 030–13283 360:** good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- **No. 13119 106–13119 300, 13321 030–13321 300:** Standard geometry with very good price/performance ratio

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13117	16	11		9		18	18	15	18	15	15	13		16					
13119105-300	16	11		9		18	18	15	18	15	15	13		16					
13283	17	12		10		19	19	17	19	17	17	15		18					
13321030-300	17	12		10		19	19	17	19	17	17	15		18					

								ATORN®		ATORN®		ORION®		ORION®	
							Cutting material	HSSE		HSSE		HSSE		HSSE	
							Surface	Vaporised		Vaporised		Vaporised		Vaporised	
							Tol.	ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C		C		B	
							Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional		CNC | Conventional	
							Twist angle	0°		40° (right)		40° (right)		0°	
							Coolant supply	External		External		External		External	
	mm	mm	mm	mm	mm	DIN		13117... Ident. No.		13283... Ident. No.		13321... Ident. No.		13119... Ident. No.	
M2	0.4	1.6	45	1.4	2.1	376		020	●	-	-	-	-	-	-
M3	0.5	2.5	56	2.2	2.7	376		030	●	030	●	030	●	-	-
M4	0.7	3.3	63	2.8	2.1	376		040	●	040	●	040	●	-	-
M5	0.8	4.2	70	3.5	2.7	376		050	●	050	●	050	●	-	-
M6	1	5	80	4.5	3.4	376		060	●	060	●	060	●	106	●
M8	1.25	6.8	90	6	4.9	376		080	●	080	●	080	●	108	●
M10	1.5	8.5	100	7	5.5	376		100	●	100	●	100	●	110	●
M12	1.75	10.2	110	9	7	376		120	●	120	●	120	●	120	●
M14	2	12	110	11	9	376		140	●	140	●	-	-	-	-
M16	2	14	110	12	9	376		160	●	160	●	160	●	160	●
M18	2.5	15.5	125	14	11	376		180	●	180	●	-	-	-	-
M20	2.5	17.5	140	16	12	376		200	●	200	●	200	●	200	●
M22	2.5	19.5	140	18	14.5	376		220	●	-	-	-	-	-	-
M24	3	21	160	18	14.5	376		240	●	240	●	240	●	240	●
M27	3	24	160	20	16	376		270	●	270	●	-	-	-	-
M30	3.5	26.5	180	22	18	376		300	●	300	●	300	●	300	●
M36	4	32	200	28	22	376		360	●	360	●	-	-	-	-

ORION = Prod. Gr. 1DB
ATORN® = Prod. Gr. 1KA

ATORN® HSSE machine tap

for universal use up to 1000 N/mm²



M | ≤2,5xd | HSSE | ISO 2 | C (2-3) | CNC/conv.

Application:
For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- **Ident. No. 020–100:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)
- **Ident. No. 120–240:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:
- **Ident. No. 020–100:**
  - Long service life and good process reliability due to innovative cutting geometry and universal use for maximum application versatility
  - Optimised geometry for lathes as a fixed tool
- **Ident. No. 120–240:**
  - good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
  - optimised geometry for lathes as stationary tool

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13281020-100	16	11		9		18	18	15	18	15	15	13		16					
13281120-240	16	11		9		18	18	15	18	15	15	13		16					

Cutting material	HSSE
Surface	Uncoated
Tol.	ISO 2 (6H)
Lead angle shape	C
Application type/machine type	CNC | Conventional
Twist angle	15° (right)
Coolant supply	External

	mm	mm	mm	mm	mm	DIN	13281... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●
M2.5	0.45	2.05	50	2.8	2.1	371	025	●
M3	0.5	2.5	56	3.5	2.7	371	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●
M5	0.8	4.2	70	6	4.9	371	050	●
M6	1	5	80	6	4.9	371	060	●
M8	1.25	6.8	90	8	6.2	371	080	●
M10	1.5	8.5	100	10	8	371	100	●
M12	1.75	10.2	110	9	7	376	120	●
M14	2	12	110	11	9	376	140	●
M16	2	14	110	12	9	376	160	●
M18	2.5	15.5	125	14	11	376	180	●
M20	2.5	17.5	140	16	12	376	200	●
M24	3	21	160	18	14.5	376	240	●

Prod. Gr. 1KA

ATORN® Machine tap HSSE vaporised cut shape E (DIN 371)

for universal use up to 1000 N/mm²



Application:
For producing metric threads nearly to the base on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- with reinforced shank

Advantage:
- good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- thread cutting nearly to the thread base

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13311	17	12		10		19	19	17	19	17	17	15		18					

Cutting material	HSSE
Surface	Vaporised
Tol.	ISO 2 (6H)
Lead angle shape	E
Application type/machine type	CNC | Conventional
Twist angle	40° (right)
Coolant supply	External

						DIN	13311... Ident. No.	
	mm	mm	mm	mm	mm			
M3	0.5	2.5	56	3.5	2.7	371	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●
M5	0.8	4.2	70	6	4.9	371	050	●
M6	1	5	80	6	4.9	371	060	●
M8	1.25	6.8	90	8	6.2	371	080	●
M10	1.5	8.5	100	10	8	371	100	●

Prod. Gr. 1KA

ATORN® Oversize HSSE machine taps, vaporised (DIN 371)

for universal use up to 1000 N/mm²



No. 13116



No. 13099

Application:
No. 13099: For producing **oversized** metric threads to ISO 3 (for subsequent surface treatment or shrinking of the thread in the course of hardening) on CNC or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².
No. 13116: For producing **oversized** metric threads to **ISO 3** (for subsequent surface treatment or shrinking of the thread in the course of hardening) in **through holes** on CNC or conventional machines in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- **No. 13099:** With reinforced shank
- **No. 13116:** with reinforced shank

Advantage:
- **No. 13099:** Long service life and high level of process reliability thanks to innovative cutting geometry and universal application for maximum flexibility in use
- **No. 13116:** good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13099030-100	17	12		10		19	19	17	19	17	17	15		18					
13116	17	12		10		19	19	17	19	17	17	15		18					

Cutting material	HSSE	HSSE
Surface	Vaporised	Vaporised
Tol.	ISO 3 (6G)	ISO 3 (6G)
Lead angle shape	B	C
Application type/machine type	CNC | Conventional	CNC | Conventional
Twist angle	0°	40° (right)
Coolant supply	External	External

						DIN	13116... Ident. No.		13099... Ident. No.	
	mm	mm	mm	mm	mm					
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●

Prod. Gr. 1KA

ATORN® HSSE TiN left-handed machine tap

for universal use up to 1000 N/mm²



M-L | ≤3xd | HSSE | TiN | ISO 2 | B (3,5-5) | CNC/conv.

Application:
For producing metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:
- good service life and process reliability thanks to innovative cutting geometry and coating as well as universal use for the greatest flexibility in applications

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13108	18	12		10		19	19	17	19	17	17	15		18					
13109	18	12		10		19	19	17	19	17	17	15		18					

Cutting material							HSSE		HSSE	
Surface							TiN		TiN	
Tol.							ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		B	
Application type/machine type							CNC | Conventional		CNC | Conventional	
Twist angle							0°		0°	
Coolant supply							External		External	
	mm	mm	mm	mm	mm	DIN	13108... Ident. No.		13109... Ident. No.	
M-L3	0.5	2.5	56	3.5	2.7	371	030	●	-	-
M-L4	0.7	3.3	63	4.5	3.4	371	040	●	-	-
M-L5	0.8	4.2	70	6	4.9	371	050	●	-	-
M-L6	1	5	80	6	4.9	371	060	●	-	-
M-L8	1.25	6.8	90	8	6.2	371	080	●	-	-
M-L10	1.5	8.5	100	10	8	371	100	●	-	-
M-L12	1.75	10.2	110	9	7	376	-	-	120	●
M-L16	2	14	110	12	9	376	-	-	160	●

Prod. Gr. 1KA

ATORN® HSSE TiN left-handed machine tap

for universal use up to 1000 N/mm²



M-L | ≤2,5xd | HSSE | TiN | ISO 2 | C (2-3) | CNC/conv.

Application:
For producing metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Advantage:
- good service life and process reliability thanks to innovative cutting geometry and coating as well as universal use for the greatest flexibility in applications

Execution:
- structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13113330-400	17	12		10		19	19	17	19	17	17	15		18					
13113420-540	17	12		10		19	19	17	19	17	17	15		18					

Cutting material						HSSE	
Surface						TiN	
Tol.						ISO 2 (6H)	
Lead angle shape						C	
Application type/machine type						CNC | Conventional	
Twist angle						40° (right)	
Coolant supply						External	
	mm	mm	mm	mm	mm	DIN	13113... Ident. No.
M-L3	0.5	2.5	56	3.5	2.7	371	330 ●
M-L4	0.7	3.3	63	4.5	3	371	340 ●
M-L5	0.8	4.2	70	6	4.9	371	350 ●
M-L6	1	5	80	6	4.9	371	360 ●
M-L8	1.25	6.8	90	8	6.2	371	380 ●
M-L10	1.5	8.5	100	10	8	371	400 ●
M-L12	1.75	10.2	110	9	7	376	420 ●
M-L16	2	14	110	12	9	376	460 ●
M-L18	2.5	15.5	125	14	11	376	500 ●
M-L20	2.5	17.5	140	16	12	376	540 ●

Prod. Gr. 1KA

Screw tap P Max 1300
for universal use up to 1300 N/mm²

Application:
Machine tap for universal application up to 1300 N/mm² both on CNC machines and on conventional machines.

Advantages:
- Very long service life in high-strength steel
- Large selection of coatings
- Wide product range in M, MF







ATORN® ORION® Machine tap, HSSE
For use in high-strength steel up to 1300 N/mm²



Application:
No. 13130–13149: For producing metric threads on CNC machines or conventional machines in **through holes** in the high-strength steel material group up to a strength of 1300 N/mm².
No. 13306–13319: For producing metric threads on CNC machines or conventional machines in **blind holes** in the high-strength steel material group up to a strength of 1300 N/mm².

Execution:
- **No. 13130:** Dimensions to: DIN 371 = reinforced shank (to M10), DIN 376 = protruding shank (from M12)
- **No. 13149 030–13149 120, 13319 030–13319 120:** Dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)
- **No. 13306:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:
- **No. 13130:** Long service life and process reliability through innovative cutting geometry for use in high-strength steel
- **No. 13149 030–13149 120, 13319 030–13319 120:** Standard geometry with an excellent price-performance ratio
- **No. 13306:** good service life and process reliability thanks to innovative cutting geometry and coating for use in high-strength steel


No. 13130–13149


No. 13306


No. 13319

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13130020-100	16	12	9																
13130120-240	16	12	9																
13149030-100	16	12	9																
13149120	16	12	9																
13306020-100	16	12	9																
13306120	16	12	9																
13319030-100	16	12	9																
13319120	16	12	9																

								ATORN®		ORION®		ATORN®		ORION®	
							Cutting material	HSSE		HSSE		HSSE		HSSE	
							Surface	Vaporised		Vaporised		Vaporised		Uncoated	
							Tol.	ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		B		C		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional		CNC | Conventional	
							Twist angle	0°		0°		40° (right)		40° (right)	
							Coolant supply	External		External		External		External	
	mm	mm	mm	mm	mm	mm	DIN	13130... Ident. No.		13149... Ident. No.		13306... Ident. No.		13319... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●	-	-	020	●	-	-	
M2.5	0.45	2.05	50	2.8	2.1	371	025	●	-	-	025	●	-	-	
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●	030	●	030	●	
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●	040	●	040	●	
M5	0.8	4.2	70	6	4.9	371	050	●	050	●	050	●	050	●	
M6	1	5	80	6	4.9	371	060	●	060	●	060	●	060	●	
M8	1.25	6.8	90	8	6.2	371	080	●	080	●	080	●	080	●	
M10	1.5	8.5	100	10	8	371	100	●	100	●	100	●	100	●	
M12	1.75	10.2	110	9	7	376	120	●	120	●	120	●	120	●	
M16	2	14	110	12	9	376	160	●	-	-	-	-	-	-	
M20	2.5	17.5	140	16	12	376	200	●	-	-	-	-	-	-	
M24	3	21	160	18	14.5	376	240	●	-	-	-	-	-	-	

ORION = Prod. Gr. 1DB
ATORN® = Prod. Gr. 1KA

ATORN® HSSE TiCN machine tap

For use in high-strength steel up to 1300 N/mm²

M | ≤3xd | ≤2,5xd | HSSE | TiCN | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13128



No. 13305

Application:

No. 13128: For producing metric threads on CNC machines or conventional machines in **through holes** in the high-strength steel material group up to a strength of 1300 N/mm².

No. 13305: For producing metric threads on CNC machines or conventional machines in **blind holes** in the high-strength steel material group up to a strength of 1300 N/mm².

Execution:

- **No. 13128:** Dimensions to: DIN 371 = reinforced shank (to M10), DIN 376 = protruding shank (from M12)
- **No. 13305:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:

- **No. 13128:** Long service life and process reliability through innovative cutting geometry for use in high-strength steel
- **No. 13305:** good service life and process reliability thanks to innovative cutting geometry and coating for use in high-strength steel

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13128030-100	18	13	**10**																
13128120-200	18	13	**10**																
13305030-100	18	13	**10**																
13305120-200	18	13	**10**																

							Cutting material	HSSE		HSSE	
							Surface	TiCN		TiCN	
							Tol.	ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional	
							Twist angle	0°		40° (right)	
							Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	**13128...** Ident. No.		**13305...** Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	**030**	●	**030**	●
M4	0.7	3.3	63	4.5	3.4	371	**040**	●	**040**	●
M5	0.8	4.2	70	6	4.9	371	**050**	●	**050**	●
M6	1	5	80	6	4.9	371	**060**	●	**060**	●
M8	1.25	6.8	90	8	6.2	371	**080**	●	**080**	●
M10	1.5	8.5	100	10	8	371	**100**	●	**100**	●
M12	1.75	10.2	110	9	7	376	**120**	●	**120**	●
M16	2	14	110	12	9	376	**160**	●	**160**	●
M20	2.5	17.5	140	16	12	376	**200**	●	**200**	●

Prod. Gr. 1KA

ATORN® Machine tap, HSSE, vaporised (DIN 376)

For use in high-strength steel up to 1300 N/mm²

M | ≤2,5xd | HSSE | ISO 2 | C (2-3) | CNC/conv.



Application:

For producing metric threads on CNC machines or conventional machines in **blind holes** in the high-strength steel material group up to a strength of 1300 N/mm² in individual part and series production.

Execution:

- With protruding shank

Advantage:

- good service life and process reliability thanks to innovative cutting geometry and coating for use in high-strength steel

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13308	16	12	**9**																

							Cutting material	HSSE	
							Surface	Vaporised	
							Tol.	ISO 2 (6H)	
							Lead angle shape	C	
							Application type/machine type	CNC | Conventional	
							Twist angle	40° (right)	
							Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	**13308...** Ident. No.	
M3	0.5	2.5	56	2.2	-	376	**030**	●
M4	0.7	3.3	63	2.8	2.1	376	**040**	●
M5	0.8	4.2	70	3.5	3.4	376	**050**	●
M6	1	5	80	4.5	3.4	376	**060**	●
M8	1.25	6.8	90	6	4.9	376	**080**	●
M10	1.5	8.5	100	7	5.5	376	**100**	●
M12	1.75	10.2	110	9	7	376	**120**	●
M14	2	12	110	11	9	376	**140**	●

						Cutting material	HSSE	
						Surface	Vaporised	
						Tol.	ISO 2 (6H)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Twist angle	40° (right)	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13308... Ident. No.	
M16	2	14	110	12	9	376	160	●
M18	2.5	15.5	125	14	11	376	180	●
M20	2.5	17.5	140	16	12	376	200	●
M24	3	21	160	18	14.5	376	240	●
M30	3.5	26.5	180	22	18	376	300	●

Prod. Gr. 1KA

ATORN® Machine tap HSSE vaporised, oversize ISO 3 (6G) (DIN 371)

For use in high-strength steel up to 1300 N/mm²

M | ≤2,5xd | ≤3xd | HSSE | ISO 3 | C (2-3) | B (3,5-5) | CNC/conv.



No. 13077



No. 13309

Application:

No. 13077: For manufacturing oversized metric threads to ISO 3 (for subsequent surface treatment or thread shrinking as part of a hardening process) in through holes on CNC and conventional machines in the steel material group up to a strength of 1300 N/mm².

No. 13309: For creating metric threads with ISO 3 oversize (for subsequent surface treatment or shrinking of the thread in the course of hardening) in the blind hole on CNC or conventional machines for the material group of steel up to a strength of 1300 N/mm².

Execution:

- **No. 13077:** With reinforced shank
- **No. 13309:** with reinforced shank

Advantage:

- **No. 13077:** Long service life and high level of process reliability thanks to innovative cutting geometry and coating for use in high-strength steel
- **No. 13309:** good service life and process reliability thanks to innovative cutting geometry for use in high-strength steel

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13077030-100	16	12	9																
13309	16	12	9																

						Cutting material	HSSE		HSSE	
						Surface	Vaporised		Vaporised	
						Tol.	ISO 3 (6G)		ISO 3 (6G)	
						Lead angle shape	C		B	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	40° (right)		0°	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13309... Ident. No.		13077... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●	-	-
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●

Prod. Gr. 1KA

Machine tap, yellow ring, CNC/conventional

For use on stainless steel

Application:

Machine tap for application in stainless steel both on CNC machines and on conventional machines.

Advantages:

- Very long service life in stainless steel
- Large selection of coatings
- Wide product range in M, MF









CNC/conv.

ATORN® ORION® HSSE machine taps, vaporised

For use on stainless steels

M | ≤2,5xd | ≤3xd | HSSE | ISO 2 | C (2-3) | B (3,5-5) | CNC/conv.

Application:

No. 13136–13145: For producing metric threads on CNC or conventional machines in **through holes** in the stainless steel material group.

No. 13279–13288: For producing metric threads on CNC machines or conventional machines in **blind holes** in the stainless steel material group.

Execution:

- **No. 13136:** Dimensions to: DIN 371 = reinforced shank (to M10), DIN 376 = protruding shank (from M12)
- **No. 13145:** Dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)
- **No. 13279:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)
- **No. 13288:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:

- **No. 13136:** Long service life and process reliability through innovative cutting geometry in machining stainless steel
- **No. 13145 120–13145 240:** Standard geometry with an excellent price-performance ratio
- **No. 13279:** Standard geometry with very good price/performance ratio
- **No. 13288:** long service life and high process reliability thanks to innovative cutting geometry for machining stainless steel



No. 13136–13145



No. 13279



No. 13288

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13136030-100	16	12		9	10														
13136120-300	16	12		9	10														
13145030-100	16	12		9	10														
13145120-240	16	12		9	10														
13279030-100	16	12		9	10														
13279120	16	12		9	10														
13288020-100	16	12		9	10														
13288120-300	16	12		9	10														

							ATORN®				ORION®			
						Cutting material	HSSE		HSSE		HSSE		HSSE	
						Surface	Vaporised		Vaporised		Vaporised		Vaporised	
						Tol.	ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	C		B		B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional		CNC | Conventional	
						Twist angle	40° (right)		0°		0°		40° (right)	
						Coolant supply	External		External		External		External	
	mm	mm	mm	mm	mm	DIN	13288... Ident. No.		13136... Ident. No.		13145... Ident. No.		13279... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●	-	-	-	-	-	-
M2.5	0.45	2.05	50	2.8	2.1	371	025	●	-	-	-	-	-	-
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●	120	●	120	●
M14	2	12	110	11	9	376	140	●	140	●	-	-	-	-
M16	2	14	110	12	9	376	160	●	160	●	160	●	-	-
M18	2.5	15.5	125	14	11	376	180	●	180	●	-	-	-	-
M20	2.5	17.5	140	16	12	376	200	●	200	●	200	●	-	-
M24	3	21	160	18	14.5	376	240	●	240	●	240	●	-	-
M30	3.5	26.5	180	22	18	376	300	●	300	●	-	-	-	-

ORION = Prod. Gr. 1DB
ATORN® = Prod. Gr. 1KA

ATORN® HSSE TiN machine tap

For use on stainless steels





No. 13107



No. 13277

Application:
No. 13107: For producing metric threads on CNC or conventional machines in **through holes** in the stainless steel material group.
No. 13277: For producing metric threads on CNC machines or conventional machines in **blind holes** in the stainless steel material group.

Execution:
- **No. 13107:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)
- **No. 13277:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- **No. 13107:** long service life and high process reliability thanks to innovative cutting geometry for machining stainless steel
- **No. 13277:** Long service life and good process reliability due to innovative cutting geometry when machining stainless steel

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13107030-100	18	13		13	11														
13107120-300	18	13		13	11														
13277030-100	18	13		13	11														
13277120-200	18	13		13	11														

	ATORN®		ATORN®	
Cutting material	HSSE		HSSE	
Surface	TiN		TiN	
Tol.	ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape	B		C	
Application type/machine type	CNC | Conventional		CNC | Conventional	
Twist angle	0°		40° (right)	
Coolant supply	External		External	

	mm	mm	mm	mm	mm	DIN	13107... Ident. No.		13277... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M14	2	12	110	11	9	376	140	●	-	-
M16	2	14	110	12	9	376	160	●	160	●
M18	2.5	15.5	125	14	11	376	180	●	-	-
M20	2.5	17.5	140	16	12	376	200	●	200	●
M24	3	21	160	18	14.5	376	240	●	-	-
M30	3.5	26.5	180	22	18	376	300	●	-	-

Prod. Gr. 1KA

ATORN® Machine tap HSSE exposed teeth (DIN 371)

For use on stainless steels





Application:
For producing metric threads on CNC or conventional machines in **through holes** in the stainless steel material group.

Execution:
- With exposed teeth and reinforced shank

Advantage:
- Innovative cutting geometry with exposed teeth reduces the torque, improves lubricant distribution and ensures very high process reliability and chip removal
- Specialised insert with optimised chipping geometry for use in stainless steels with adhesive or lubricating properties

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13088	16	11		9	10														

	HSSE
Cutting material	HSSE
Surface	Uncoated
Tol.	ISO 2 (6H)
Lead angle shape	B
Application type/machine type	CNC | Conventional
Twist angle	0°
Coolant supply	External

	mm	mm	mm	mm	mm	DIN	13088... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●

						Cutting material	HSSE	
						Surface	Uncoated	
						Tol.	ISO 2 (6H)	
						Lead angle shape	B	
						Application type/machine type	CNC | Conventional	
						Twist angle	0°	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13088... Ident. No.	
M5	0.8	4.2	70	6	4.9	371	050	●
M6	1	5	80	6	4.9	371	060	●
M8	1.25	6.8	90	8	6.2	371	080	●
M10	1.5	8.5	100	10	8	371	100	●

Prod. Gr. 1KA

ATORN® HSSE machine taps, vaporised (DIN 376)

For use on stainless steels





No. 13215



No. 13325

Application:
No. 13215: For producing metric threads on CNC or conventional machines in **through holes** in the stainless steel material group.
No. 13325: For producing metric threads on CNC machines or conventional machines in **blind holes** in the stainless steel material group.

Execution:
- With transition-fit shank

Advantage:
- Long service life and high process reliability through innovative cutting geometry when machining stainless steel

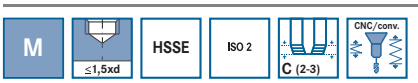
Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13215030-300	16	12		9	10														
13325120-300	16	12		9	10														

							Cutting material	HSSE		HSSE	
							Surface	Vaporised		Vaporised	
							Tol.	ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional	
							Twist angle	0°		40° (right)	
							Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13215... Ident. No.		13325... Ident. No.	
M3	0.5	2.5	56	2.2	-	376	030	●	-	-
M4	0.7	3.3	63	2.8	2.1	376	040	●	-	-
M5	0.8	4.2	70	3.5	2.7	376	050	●	-	-
M6	1	5	80	4.5	3.4	376	060	●	-	-
M8	1.25	6.8	90	6	4.9	376	080	●	-	-
M10	1.5	8.5	100	7	5.5	376	100	●	-	-
M12	1.75	10.2	110	9	7	376	120	●	120	●
M14	2	12	110	11	9	376	140	●	140	●
M16	2	14	110	12	9	376	160	●	160	●
M18	2.5	15.5	125	14	11	376	180	●	180	●
M20	2.5	17.5	140	16	12	376	200	●	200	●
M24	3	21	160	18	14.5	376	240	●	240	●
M30	3.5	26.5	180	22	18	376	300	●	300	●

Prod. Gr. 1KA

ATORN® Machine tap, HSSE (DIN 371)

For use on stainless steels





Application:
For producing metric threads on CNC machines or conventional machines in **blind holes** in the stainless steel material group.

Execution:
- With reinforced shank

Advantage:
- Long service life and good process reliability due to innovative cutting geometry when machining stainless steel

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13274	16	12		9	10														

						Cutting material	HSSE	
						Surface	Vaporised	
						Tol.	ISO 2 (6H)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Twist angle	15° (right)	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13274... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●
M2.5	0.45	2.05	50	2.8	2.1	371	025	●
M3	0.5	2.5	56	3.5	2.7	371	030	●
M3.5	0.6	2.9	56	4	3	371	035	●
M4	0.7	3.3	63	4.5	3.4	371	040	●
M5	0.8	4.2	70	6	4.9	371	050	●
M6	1	5	80	6	4.9	371	060	●
M7	1	6	80	7	5.5	371	070	●
M8	1.25	6.8	90	8	6.2	371	080	●
M10	1.5	8.5	100	10	8	371	100	●

Prod. Gr. 1KA

Machine tap, green ring, CNC/conventional
For use in non-ferrous metals

Application:
Machine tap for application in non-ferrous metals both on CNC machines and on conventional machines.

Advantages:
- Very long service life in non-ferrous metals
- Large selection of coatings and cutting materials
- CARBO coating ensures favourable sliding properties in non-ferrous metals







ATORN® Machine tap, HSSE
For use in NF metals




No. 13118


No. 13266

Application:
No. 13118: For producing metric threads on CNC or conventional machines in **through holes** in the non-ferrous metals material group.
No. 13266: For producing metric threads on CNC or conventional machines in **blind holes** in the non-ferrous metals material group.

Execution:
- **No. 13118:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)
- **No. 13266:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- **No. 13118:** long service life and high degree of process reliability thanks to innovative cutting geometry in machining non-ferrous metal
- **No. 13266:** Long service life and good process reliability due to innovative cutting geometry when machining non-ferrous metal

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13118020-100	16					18	18	15	18	15	15	13							
13118120-240	16					18	18	15	18	15	15	13							
13266020-100	16					18	18	15	18	15	15	13							
13266120-240	16					18	18	15	18	15	15	13							

						Cutting material	HSSE		HSSE	
						Surface	Vaporised		Uncoated	
						Tol.	ISO 2X (6HX)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		45° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13118... Ident. No.		13266... Ident. No.	
M2	0.4	1.6	45	2.8	2.1	371	020	●	020	●
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M16	2	14	110	12	9	376	160	●	160	●
M18	2.5	15.5	125	14	11	376	-	-	180	●
M20	2.5	17.5	140	16	12	376	200	●	200	●
M22	2.5	19.5	140	18	14.5	376	220	●	-	-
M24	3	21	160	18	14.5	376	240	●	240	●

Prod. Gr. 1KA

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® HSSE PM Carbo machine tap

For use on non-ferrous metals





No. 13345



No. 13349

Application:

No. 13345: For producing metric threads on CNC or conventional machines in **through holes** in the non-ferrous metals material group.

No. 13349: For producing metric threads on CNC or conventional machines in **blind holes** in the non-ferrous metals material group.

Execution:

- Dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)

Advantage:

- Specialised use with optimised chip geometry for use in NF metals.
- **No. 13345 030–13349 100:** Innovative carbo coating for very good gliding properties and emergency operating function if coolant supply is interrupted.
- **No. 13349 120–13349 240:** Innovative carbo coating for very good sliding properties and emergency operating function if coolant supply is interrupted.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13345030-100	19					24	22	18	22	18	18	16							
13345120-160	19					24	22	18	22	18	18	16							
13349030-100	19					24	22	18	22	18	18	16							
13349120-240	19					24	22	18	22	18	18	16							

													Cutting material	HSSE-PM				HSSE-PM		
													Surface	Carbo coating				Carbo coating		
													Tol.	ISO 2 (6H)				ISO 2 (6H)		
													Lead angle shape	B				C		
													Application type/machine type	CNC | Conventional				CNC | Conventional		
													Twist angle	0°				40° (right)		
													Coolant supply	External				External		
	mm		mm		mm		mm		mm		mm		DIN	13345... Ident. No.				13349... Ident. No.		
M3	0.5		2.5		56		3.5		2.7				371	030	●			030	●	
M4	0.7		3.3		63		4.5		3.4				371	040	●			040	●	
M5	0.8		4.2		70		6		4.9				371	050	●			050	●	
M6	1		5		80		6		4.9				371	060	●			060	●	
M8	1.25		6.8		90		8		6.2				371	080	●			080	●	
M10	1.5		8.5		100		10		8				371	100	●			100	●	
M12	1.75		10.2		110		9		7				376	120	●			120	●	
M16	2		14		110		12		9				376	160	●			160	●	
M14	2		12		110		11		9				376	-		-		140	●	
M20	2.5		17.5		140		16		12				376	-		-		200	●	
M24	3		21		160		18		14.5				376	-		-		240	●	

Prod. Gr. 1KA

ATORN® HSSE machine taps with interrupted teeth

For use on non-ferrous metals





No. 13083



No. 13254

Application:

For producing metric threads on CNC or conventional machines in **through holes** in the non-ferrous metals material group.

Execution:

- **No. 13083:** Dimensions pursuant to: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)
- **No. 13254:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:

- **No. 13083:**
  - Innovative cutting geometry with exposed teeth reduces the torque, improves lubricant distribution and ensures very high process reliability and chip removal
  - Specialised insert with optimised chipping geometry for use in NF metals with adhesive or lubricating properties
- **No. 13254:**
  - innovative cutting geometry with interrupted thread reduces torque, improves lubricant distribution and ensures extremely good process reliability and chip removal
  - specialised application with optimised chip geometry, for use in non-ferrous metals with adhesive or lubricating properties

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13083030-100	16					18	18	15	18	15	15	13							
13083120-160	16					18	18	15	18	15	15	13							
13254030-100	16					18	18	15	18	15	15	13							
13254120-200	16					18	18	15	18	15	15	13							

						Cutting material	HSSE		HSSE	
						Surface	Uncoated		Uncoated	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		15° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13083... Ident. No.		13254... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M16	2	14	110	12	9	376	160	●	160	●
M20	2.5	17.5	140	16	12	376	-	-	200	●

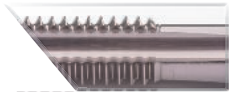
Prod. Gr. 1KA

Machine tap, red ring, CNC/conventional
For use in cast iron and short-chipping non-ferrous metals

Application:
Machine tap for application in stainless steel both on CNC machines and on conventional machines.

Advantages:
- Very long service life in cast iron and short-chipping non-ferrous metals
- Large selection of coatings and cutting materials
- Optimised geometry for short-chipping materials







ATORN® Machine tap, HSSE
For use on cast and short-chipping non-ferrous metals



Application:
For producing metric threads on CNC or conventional machines in **through holes and blind holes** in the non-ferrous metals (short-chipping) and cast iron material groups.

Execution:
- **No. 13271:** Structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)
- **No. 13290–13291:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:
- **No. 13271:** Long service life and good process reliability due to innovative cutting geometry when machining cast materials and short-chipping non-ferrous metals
- **No. 13290–13291:** long service life and high degree of process reliability thanks to innovative cutting geometry for machining cast iron and short-chip non-ferrous metals
- **No. 13291:** optimum chip removal thanks to inner cooling


No. 13271


No. 13290


No. 13291
High-efficiency HSSE-PM tap with internal cooling ensures secure chip removal and outstanding tool life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13271030-100						19		17		17		15	16	18					
13271120-240						19		17		17		15	16	18					
13290030-100						22		20		19		17	16	21					
13290120-240						22		20		19		17	16	21					
13291						22		20		19		17	16	21					

						Cutting material	HSSE		HSSE		HSSE	
						Surface	Nitrated		TiAlN		TiAlN	
						Tol.	ISO 2 (6H)		ISO 2X (6HX)		ISO 2X (6HX)	
						Lead angle shape	C		C		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional	
						Twist angle	0°		0°		0°	
						Coolant supply	External		External		Internal	
	mm	mm	mm	mm	mm	DIN	13271... Ident. No.		13290... Ident. No.		13291... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	030	●	030	●	-	-
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●	-	-
M5	0.8	4.2	70	6	4.9	371	050	●	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●	-	-
M16	2	14	110	12	9	376	160	●	160	●	-	-
M18	2.5	15.5	125	14	11	376	180	●	180	●	-	-
M20	2.5	17.5	140	16	12	376	200	●	200	●	-	-
M24	3	21	160	18	14.5	376	240	●	240	●	-	-

Prod. Gr. 1KA

ATORN® Solid carbide machine tap with internal cooling (DIN Similar to 371)

For use in cast metals and short-chipping non-ferrous metals





Application:
For producing metric threads on CNC machines in **through holes and blind holes** in the non-ferrous metals (short-chip) and cast iron material groups in series production.

Execution:
- with reinforced shank, M3 and M4 without internal cooling

Advantage:
- long service life and high degree of process reliability thanks to innovative cutting geometry for machining cast iron and short-chip non-ferrous metals
- optimum chip removal due to internal cooling

High-performance tap in solid carbide with internal cooling for series production involving large quantities. h6 shaft tolerance for shrinking.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13250						45		35		32		25	35	35					

						Cutting material	VHM		
						Surface	Uncoated		
						Tol.	ISO 2 (6H)		
						Lead angle shape	C		
						Application type/machine type	CNC		
						Twist angle	0°		
						Coolant supply	Internal		
	mm	mm	mm	mm	mm	DIN	13250... Ident. No.		
M3	0.5	2.5	56	3.5	2.7	Similar to 371	030	●	
M4	0.7	3.3	63	4.5	3.4	Similar to 371	040	●	
M5	0.8	4.2	70	6	4.9	Similar to 371	050	●	
M6	1	5	80	6	4.9	Similar to 371	060	●	
M8	1.25	6.8	90	8	6.2	Similar to 371	080	●	
M10	1.5	8.5	100	10	8	Similar to 371	100	●	
M12	1.5	10.2	110	9	7	Similar to 371	120	●	
M16	1.75	14	110	12	9	Similar to 371	160	●	

Prod. Gr. 1KA

Machine tap, brown ring, CNC/conventional

For use in titanium and nickel alloys

Application:
Machine tap in titanium and nickel alloys both on CNC machines and on conventional machines.

Advantages:
- Very long service life in titanium and nickel alloys
- High-quality cutting materials and coatings ensure long service life









ATORN® HSSE-PM machine tap

For use in titanium and nickel alloys up to 1000 N/mm²

M | ≤3xd | ≤2xd | HSSE-PM | TiCN | ISO 2 x | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.

Application:

No. 13134: For producing metric threads on CNC machines or conventional machines in **through holes** in the titanium and nickel alloy material group **up to 1000 N/mm²**.

No. 13286–13287: For producing metric threads on CNC machines or conventional machines in **blind holes** in the titanium and nickel alloy material group **up to 1000 N/mm²**.

Execution:

- **No. 13134:** Dimensions to: DIN 371 = reinforced shank (to M10), DIN 376 = protruding shank (from M12)
- **No. 13286–13287:** structural dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = over-long shank (from M12)

Advantage:

- **No. 13134:** Long service life and process reliability through innovative cutting geometry and coating for use in titanium-and-nickel alloys
- **No. 13286–13287:** good service life and process reliability thanks to innovative cutting geometry and coating for use in titanium and nickel alloys



No. 13134



No. 13286



No. 13287

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13134020-100															6	5			
13134120-160															6	5			
13286030-100															6	5			
13286120-160															6	5			
13287030-100															6	5			
13287120-160															6	5			

							Cutting material	HSSE-PM		HSSE-PM		HSSE-PM	
							Surface	TiCN		Vaporised		TiCN	
							Tol.	ISO 2X (6HX)		ISO 2X (6HX)		ISO 2 (6H)	
							Lead angle shape	B		C		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional	
							Twist angle	0°		30° (right)		30° (right)	
							Coolant supply	External		External		External	
	mm	mm	mm	mm	mm		DIN	13134... Ident. No.		13286... Ident. No.		13287... Ident. No.	
M2	0.4	1.6	45	2.8	2.1		371	020	●	-	-	-	-
M2.5	0.45	2.05	50	2.8	2.1		371	025	●	-	-	-	-
M3	0.5	2.5	56	3.5	2.7		371	030	●	030	●	030	●
M3.5	0.6	2.9	56	4	3		371	035	●	-	-	-	-
M4	0.7	3.3	63	4.5	3.4		371	040	●	040	●	040	●
M5	0.8	4.2	70	6	4.9		371	050	●	050	●	050	●
M6	1	5	80	6	4.9		371	060	●	060	●	060	●
M8	1.25	6.8	90	8	6.2		371	080	●	080	●	080	●
M10	1.5	8.5	100	10	8		371	100	●	100	●	100	●
M12	1.75	10.2	110	9	7		376	120	●	120	●	120	●
M16	2	14	110	12	9		376	160	●	160	●	160	●

Prod. Gr. 1KA

ATORN® HSSE-PM machine tap

For use in titanium and nickel alloys over 1000 N/mm²

M | ≤3xd | ≤2xd | ≤1xd | HSSE-PM | TiAlN | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.

Application:

No. 13203: For manufacturing metric threads on CNC or conventional machines in **through holes** in the titanium and nickel alloy material group **over 1000 N/mm²**.

No. 13313: For producing metric threads on CNC machines or conventional machines in **blind holes** in the titanium and nickel alloy material group **over 1000 N/mm²**.

Execution:

- Dimensions in accordance with: DIN 371 = reinforced shank (up to M10), DIN 376 = transition-fit shank (from M12)

Advantage:

- Long service life and high process reliability thanks to innovative cutting geometry and coating for use with titanium and nickel alloys



No. 13203



No. 13313

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13203030-100															6	5			
13203120															6	5			
13313120-160															6	5			

						Cutting material	HSSE-PM		HSSE-PM	
						Surface	TiAlN		TiAlN	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		15° (right)	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13203... Ident. No.		13313... Ident. No.	
M3	0.5	2.5	56	3.5	2.7	371	030	●	-	-
M4	0.7	3.3	63	4.5	3.4	371	040	●	040	●
M5	0.8	4.2	70	6	4.9	371	050	●	050	●
M6	1	5	80	6	4.9	371	060	●	060	●
M8	1.25	6.8	90	8	6.2	371	080	●	080	●
M10	1.5	8.5	100	10	8	371	100	●	100	●
M12	1.75	10.2	110	9	7	376	120	●	120	●
M16	2	14	110	12	9	376	-	-	160	●

Prod. Gr. 1KA

Machine tap, grey ring, CNC/conventional
For use in hard machining from 55-65 HRC

Application:
machine tap in hard machining both on CNC machines and on conventional machines.

Advantages:
- Very long service life in hard machining
- High-quality cutting materials and coatings ensure long service life







ATORN® TiCN machine tap (DIN Similar to 371)
For machining from 55 HRC-63 HRC



Application:
For producing metric threads on CNC machines in **through holes and blind holes** in the hardened steel material group **up to 63 HRC**.

Execution:
- with reinforced shank

Advantage:
- good service life and process reliability thanks to innovative cutting geometry and coating for machining hardened steel


No. 13251


No. 13253

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13251030-100																		5	2
13251120																		5	2
13253060-100																		3	
13253120																		3	

						Cutting material	VHM		HSSE-PM
						Surface	TiCN		TiCN
						Tol.	ISO 2X (6HX)		ISO 2 (6H)
						Lead angle shape	D		D
						Application type/machine type	CNC | Conventional		CNC | Conventional
						Twist angle	0°		0°
						Coolant supply	External		External
	mm	mm	mm	mm	mm	DIN	13251... Ident. No.		13253... Ident. No.	
M3	0.5	2.6	56	3.5	2.7	Similar to 371	030	●	-	-
M4	0.7	3.4	63	4.5	3.4	Similar to 371	040	●	-	-
M5	0.8	4.3	70	6	4.9	Similar to 371	050	●	-	-
M6	1	5.1	80	6	4.9	Similar to 371	060	●	060	●
M8	1.25	6.9	90	8	6.2	Similar to 371	080	●	080	●
M10	1.5	8.6	100	10	8	Similar to 371	100	●	100	●
M12	1.75	10.4	110	12	9	Similar to 371	120	●	120	●

Prod. Gr. 1KA

ATORN® HSSE machine tap, extra long (DIN Similar to 371)

for universal use up to 1000 N/mm²



M | ≤3xd | HSSE | ISO 2 | B (3,5-5) | CNC/conv.

Application:
For producing deep-set or hard-to-reach metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1000 N/mm².

Execution:
- extra-long design

Advantage:
- good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications
- excellent accessibility thanks to long design

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13261	16	11		9		18	18	15	18	15	15	13		16					

Cutting material	HSSE
Surface	Vaporised
Tol.	ISO 2 (6H)
Lead angle shape	B
Application type/machine type	CNC | Conventional
Twist angle	0°
Coolant supply	External

	mm	mm	mm	mm	mm	DIN	13261... Ident. No.	
M3	0.5	2.5	70	2.2	-	Similar to 371	030	●
M4	0.7	3.3	90	2.8	2.1	Similar to 371	040	●
M5	0.8	4.2	100	3.5	2.7	Similar to 371	050	●
M6	1	5	110	4.5	3.7	Similar to 371	060	●
M8	1.25	6.8	125	6	4.9	Similar to 371	080	●
M10	1.5	8.5	140	7	5.5	Similar to 371	100	●
M12	1.75	10.2	180	9	7	Similar to 371	120	●
M16	2	14	200	12	9	Similar to 371	160	●
M20	2.5	17.5	250	16	12	Similar to 371	200	●

Prod. Gr. 1KA

ATORN® HSSE machine tap, extra long (DIN Similar to 371)

for universal use up to 1000 N/mm²



M | ≤2,5xd | HSSE | ISO 2 | C (2-3) | CNC/conv.

Application:
For producing deep-set or hard-to-reach metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1000 N/mm².

Execution:
- Extra-long design

Advantage:
- Long service life and good process reliability due to innovative cutting geometry and universal use for maximum application versatility
- Very good accessibility due to long design

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13263	16	11		9		18	18	15	18	15	15	13		16					

Cutting material	HSSE
Surface	Vaporised
Tol.	ISO 2 (6H)
Lead angle shape	C
Application type/machine type	CNC | Conventional
Twist angle	45° (right)
Coolant supply	External

	mm	mm	mm	mm	mm	DIN	13263... Ident. No.	
M4	0.7	3.3	125	4.5	3.4	Similar to 371	040	●
M5	0.8	4.2	140	6	4.9	Similar to 371	050	●
M6	1	5	160	6	4.9	Similar to 371	060	●
M8	1.25	6.8	180	6	6.2	Similar to 371	080	●
M10	1.5	8.5	200	7	5.5	Similar to 371	100	●
M12	1.75	10.2	220	9	7	Similar to 371	120	●
M16	2	14	220	12	9	Similar to 371	160	●
M20	2.5	17.5	280	16	12	Similar to 371	200	●

Prod. Gr. 1KA

ATORN® Machine nut taps (DIN 357)

for universal use up to 1000 N/mm²

M | ≤3xd | HSSE | ISO 2 x | CNC/conv.



Application:
For machining metric threads (cutting nuts or bridging cavities) in through holes on CNC or conventional machines in the steel, (stainless steel), NF metal and (cast) material groups up to a strength of 1000 N/mm².

Execution:
- Long design

Advantage:
- Very long thread section can bridge cavities between threads
- Universal use for maximum flexibility

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13059	16	11		9		18	18	15	18	15	15	13		16					

Cutting material	HSSE
Surface	Uncoated
Tol.	ISO 2X (6HX)
Application type/machine type	CNC | Conventional
Twist angle	0°
Coolant supply	External

	mm	mm	mm	mm	mm	DIN	13059... Ident. No.	
M3	0.5	2.5	70	2.2	-	357	030	●
M4	0.7	3.3	90	2.8	2.1	357	040	●
M5	0.8	4.2	100	3.5	2.7	357	050	●
M6	1	5	110	4.5	3.4	357	060	●
M8	1.25	6.8	125	6	4.9	357	080	●
M10	1.5	8.5	140	7	5.5	357	100	●
M12	1.75	10.2	180	9	7	357	120	●
M16	2	14	200	12	9	357	160	●

Prod. Gr. 1KA

ATORN® machine tap HSSE PM Ultra HL (DIN 374)

for universal use up to 1200 N/mm²

MF | ≤2,5xd | ≤3xd | HSSE-PM | ULTRA HL | ISO 2 x | C (2-3) | B (3,5-5) | CNC/conv.



No. 13211



No. 13204

Application:
For producing fine metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast and special alloy material groups up to a strength of 1200 N/mm².

Advantage:
- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13204086-203	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13211086-203	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		

Cutting material	HSSE-PM	HSSE-PM
Surface	ULTRA HL	ULTRA HL
Tol.	ISO 2X (6HX)	ISO 2X (6HX)
Lead angle shape	C	B
Application type/machine type	CNC | Conventional	CNC | Conventional
Twist angle	50° (right)	0°

	mm	mm	mm	mm	mm	DIN	13204... Ident. No.		13211... Ident. No.	
MF8	1	7	90	6	4.9	374	086	●	086	●
MF10	1	9	90	7	5.5	374	103	●	103	●
MF10	1.25	8.8	100	7	5.5	374	106	●	106	●
MF12	1	11	100	9	7	374	120	●	120	●
MF12	1.25	10.8	100	9	7	374	123	●	123	●
MF12	1.5	10.5	100	9	7	374	126	●	126	●
MF14	1.5	12.5	100	11	9	374	146	●	146	●
MF16	1.5	14.5	100	12	9	374	165	●	165	●
MF18	1.5	16.5	110	14	11	374	183	●	183	●
MF20	1.5	18.5	125	16	12	374	203	●	203	●

Prod. Gr. 1KC

ATORN® Machine tap, HSSE Ultra HL (DIN 374)

For universal use, for use up to 1000 N/mm²

MF | ≤3xd | ≤2,5xd | HSSE | ULTRA HL | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13103



No. 13315

Application:

No. 13103: For producing fine metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1000 N/mm².

No. 13315: For producing fine metric threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1000 N/mm².

Advantage:

- Ideal for long service life requirements and materials that are difficult to machine, such as stainless steel
- **No. 13103:** Innovative cutting geometry and ULTRA HL coating guarantee high process reliability even under difficult machining conditions
- **No. 13315:** Innovative cutting geometry and newly developed ULTRA HL coating guarantee high process reliability even under difficult machining conditions.

Execution:

- With transition-fit shank

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13103	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		
13315	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		

Cutting material							HSSE		HSSE	
Surface							ULTRA HL		ULTRA HL	
Tol.							ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		C	
Application type/machine type							CNC | Conventional		CNC | Conventional	
Twist angle							0°		45° (right)	
Coolant supply							External		External	
	mm	mm	mm	mm	mm	DIN	13103... Ident. No.		13315... Ident. No.	
MF6	0.75	5.2	80	4.5	3.4	374	065	●	065	●
MF8	0.75	7.2	80	6	4.9	374	-	-	083	●
MF8	1	7	90	6	4.9	374	086	●	086	●
MF10	1	9	90	7	5.5	374	103	●	103	●
MF10	1.25	8.8	100	7	5.5	374	-	-	106	●
MF12	1	11	100	9	7	374	120	●	120	●
MF12	1.5	10.5	100	9	7	374	126	●	126	●
MF12	1.25	10.8	100	9	7	374	-	-	123	●
MF14	1.5	12.5	100	11	9	374	146	●	146	●
MF16	1.5	14.5	100	12	9	374	165	●	165	●
MF18	1.5	16.5	110	14	11	374	183	●	183	●
MF20	1.5	18.5	125	16	12	374	-	-	203	●
MF24	1.5	22.5	140	18	14.5	374	243	●	243	●
MF24	2	22	140	18	14.5	374	246	●	-	-

Prod. Gr. 1KC

ATORN® HSSE V3 machine tap (DIN 374)

for universal use up to 1200 N/mm²

MF | ≤3xd | ≤2,5xd | HSSE V3 | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13219



No. 13220

Application:

For producing fine metric threads on CNC machines or conventional machines in **through holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1200 N/mm².

Advantage:

- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13219030-243	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		
13220030-303	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		

Cutting material							HSSE V3		HSSE V3	
Surface							Vaporised		Vaporised	
Tol.							ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		C	
Application type/machine type							CNC | Conventional		CNC | Conventional	
Twist angle							0°		40° (right)	
	mm	mm	mm	mm	mm	DIN	13219... Ident. No.		13220... Ident. No.	
MF3	0.35	2.65	56	2.2	-	374	030	●	030	●
MF4	0.5	3.5	63	2.8	2.1	374	045	●	045	●
MF5	0.5	4.5	70	3.5	2.7	374	050	●	050	●
MF6	0.5	5.5	80	4.5	3.4	374	060	●	060	●

							Cutting material	HSSE V3		HSSE V3	
							Surface	Vaporised		Vaporised	
							Tol.	ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional	
							Twist angle	0°		40° (right)	
	mm	mm	mm	mm	mm	DIN	13219... Ident. No.			13220... Ident. No.	
MF6	0.75	5.2	80	4.5	3.4	374	065	●		065	●
MF8	0.75	7.2	80	6	4.9	374	083	●		083	●
MF8	1	7	90	6	4.9	374	086	●		086	●
MF10	1	9	90	7	5.5	374	103	●		103	●
MF12	1	11	100	9	7	374	120	●		120	●
MF12	1.5	10.5	100	9	7	374	126	●		126	●
MF14	1.5	12.5	100	11	9	374	146	●		146	●
MF16	1.5	14.5	100	12	9	374	165	●		165	●
MF18	1.5	16.5	110	14	11	374	183	●		183	●
MF20	1.5	18.5	125	16	12	374	203	●		203	●
MF22	1.5	20.5	125	18	14.5	374	223	●		223	●
MF24	1.5	22.5	140	18	14.5	374	243	●		243	●
MF27	1.5	25.5	140	20	16	374	-	-		270	●
MF30	1.5	28.5	150	22	18	374	-	-		303	●

Prod. Gr. 1KC

ATORN® HSSE TiN machine tap (DIN 374)

for universal use up to 1000 N/mm²

MF | ≤3xd | ≤2,5xd | HSSE | TiN | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13104



No. 13317

Application:

No. 13104: For producing fine metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1300 N/mm².

No. 13317: For producing fine metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1300 N/mm².

Execution:

- **No. 13104:** with over-long shank
- **No. 13317:** With transition-fit shank

Advantage:

- **No. 13104:** good service life and process reliability thanks to innovative cutting geometry and coating as well as universal use for the greatest flexibility in applications
- **No. 13317:** Long service life and high process reliability thanks to innovative cutting geometry and coating, and universal use for maximum flexibility in use

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13104	16	12	9	9	7	18	18	15	18	15	15	13	14	16					

							Cutting material	HSSE		HSSE	
							Surface	TiN		TiN	
							Tol.	ISO 2 (6H)		ISO 2 (6H)	
							Lead angle shape	B		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional	
							Twist angle	0°		40° (right)	
							Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13104... Ident. No.			13317... Ident. No.	
MF8	1	7	90	6	4.9	374	086	●		-	-
MF10	1	9	90	7	5.5	374	103	●		103	●
MF12	1	11	100	9	7	374	120	●		-	-
MF14	1.5	12.5	100	11	9	374	146	●		-	-
MF16	1.5	14.5	100	12	9	374	165	●		-	-

Prod. Gr. 1KC

ATORN® Machine tap, HSSE (DIN 374)

for universal use up to 1000 N/mm²

MF | ≤2xd | HSSE | ISO 2 | C (2-3) | CNC/conv.



Application:

For producing fine metric threads on CNC machines or conventional machines in **through holes and blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- With transition-fit shank

Advantage:

- Long service life and high process reliability thanks to innovative cutting geometry, and universal use for maximum flexibility in use.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13320	16	11		9		18	18	15	18	15	15	13	14	16					

						Cutting material	HSSE	
						Surface	Uncoated	
						Tol.	ISO 2 (6H)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Twist angle	0°	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13320... Ident. No.	
MF3	0.35	2.65	56	2.2	-	374	030	●
MF4	0.5	3.5	63	2.8	2.1	374	045	●
MF5	0.5	4.5	70	3.5	2.7	374	050	●
MF6	0.5	5.5	80	4.5	3.4	374	060	●
MF6	0.75	5.2	80	4.5	3.4	374	065	●
MF8	0.5	7.5	80	6	4.9	374	080	●
MF8	0.75	7.2	80	6	4.9	374	083	●
MF8	1	7	90	6	4.9	374	086	●
MF9	1	8	90	7	5.5	374	090	●
MF10	0.75	9.2	90	7	5.5	374	100	●
MF10	1	9	90	7	5.5	374	103	●
MF10	1.25	8.8	100	7	5.5	374	106	●
MF12	1	11	100	9	7	374	120	●
MF12	1.25	10.8	100	9	7	374	123	●
MF12	1.5	10.5	100	9	7	374	126	●
MF14	1	13	100	11	9	374	140	●
MF14	1.25	12.8	100	11	9	374	143	●
MF14	1.5	12.5	100	11	9	374	146	●

						Cutting material	HSSE	
						Surface	Uncoated	
						Tol.	ISO 2 (6H)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Twist angle	0°	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13320... Ident. No.	
MF15	1	14	100	12	9	374	154	●
MF16	1	15	100	12	9	374	160	●
MF16	1.5	14.5	100	12	9	374	165	●
MF18	1	17	110	14	11	374	180	●
MF18	1.5	16.5	110	14	11	374	183	●
MF20	1	19	125	16	12	374	200	●
MF20	2	18	140	16	12	374	206	●
MF22	1.5	20.5	125	18	14.5	374	223	●
MF24	1	23	140	18	14.5	374	240	●
MF24	1.5	22.5	140	18	14.5	374	243	●
MF24	2	22	140	18	14.5	374	246	●
MF26	1.5	24.5	140	18	14.5	374	260	●
MF27	1.5	25.5	140	20	16	374	270	●
MF27	2	25	140	20	16	374	273	●
MF30	1.5	28.5	150	22	18	374	303	●
MF30	2	28	150	22	18	374	306	●
MF36	1.5	34.5	170	28	22	374	360	●

Prod. Gr. 1KC

ATORN® ORION® HSSE machine tap (DIN 374)

for universal use up to 1000 N/mm²

MF | ≤3xd | ≤2,5xd | HSSE | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13144–13147



No. 13335

Application:

No. 13144–13147: For producing fine metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13335: For producing fine metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13144:** With protruding shank
- **No. 13147–13335:** With transition-fit shank

Advantage:

- **No. 13144:** Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility
- **No. 13147:** Long service life and high process reliability thanks to innovative cutting geometry, and universal use for maximum flexibility in use.
- **No. 13335:** Standard geometry with an excellent price-performance ratio

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13144	16	11		9		18	18	15	18	15	15	13	14	16					
13147	16	11		9		18	18	15	18	15	15	13	14	16					
13335	16	11		9		18	18	15	18	15	15	13	14	16					

								ATORN®		ORION®			
						Cutting material		HSSE		HSSE		HSSE	
						Surface		Uncoated		Uncoated		Uncoated	
						Tol.		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape		B		B		C	
						Application type/machine type		CNC | Conventional		CNC | Conventional		CNC | Conventional	
						Twist angle		0°		0°		40° (right)	
						Coolant supply		External		External		External	
	mm	mm	mm	mm	mm	DIN		13144... Ident. No.		13147... Ident. No.		13335... Ident. No.	
MF3	0.35	2.65	56	2.2	-	374	030	●	-	-	-	-	
MF4	0.5	3.5	63	2.8	2.1	374	045	●	-	-	-	-	
MF5	0.5	4.5	70	3.5	2.7	374	050	●	-	-	-	-	
MF6	0.5	5.5	80	4.5	3.4	374	060	●	-	-	-	-	
MF6	0.75	5.2	80	4.5	3.4	374	065	●	-	-	-	-	
MF7	0.75	6.2	80	5.5	4.3	374	070	●	-	-	-	-	
MF8	0.5	7.5	80	6	4.9	374	080	●	-	-	-	-	
MF8	0.75	7.2	80	6	4.9	374	083	●	-	-	-	-	
MF8	1	7	90	6	4.9	374	086	●	086	●	086	●	
MF9	1	8	90	7	5.5	374	090	●	-	-	-	-	
MF10	0.75	9.2	90	7	5.5	374	100	●	-	-	-	-	
MF10	1	9	90	7	5.5	374	103	●	103	●	103	●	
MF10	1.25	8.8	100	7	5.5	374	106	●	106	●	-	-	
MF11	1	10	90	8	6.2	374	110	●	110	●	-	-	
MF12	1	11	100	9	7	374	120	●	120	●	120	●	
MF12	1.25	10.8	100	9	7	374	123	●	123	●	123	●	
MF12	1.5	10.5	100	9	7	374	126	●	126	●	126	●	
MF14	1	13	100	11	9	374	140	●	140	●	-	-	
MF14	1.25	12.8	100	11	9	374	143	●	-	-	-	-	
MF14	1.5	12.5	100	11	9	374	146	●	146	●	146	●	
MF15	1	14	100	12	9	374	150	●	150	●	-	-	
MF15	1.5	13.5	100	12	9	374	154	●	154	●	-	-	

							ATORN®		ORION®			
						Cutting material	HSSE		HSSE		HSSE	
						Surface	Uncoated		Uncoated		Uncoated	
						Tol.	ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	B		B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional	
						Twist angle	0°		0°		40° (right)	
						Coolant supply	External		External		External	
	mm	mm	mm	mm	mm	DIN	13144... Ident. No.		13147... Ident. No.		13335... Ident. No.	
MF16	1	15	100	12	9	374	160	●	160	●	-	-
MF16	1.5	14.5	100	12	9	374	165	●	165	●	165	●
MF18	1	17	110	14	11	374	180	●	-	-	-	-
MF18	1.5	16.5	110	14	11	374	183	●	183	●	183	●
MF18	2	16	125	14	11	374	185	●	185	●	-	-
MF20	1	19	125	16	12	374	200	●	200	●	-	-
MF20	1.5	18.5	125	16	12	374	203	●	203	●	203	●
MF20	2	18	140	16	12	374	206	●	-	-	-	-
MF22	1	21	125	18	14.5	374	220	●	-	-	-	-
MF22	1.5	20.5	125	18	14.5	374	223	●	-	-	-	-
MF22	2	20	140	18	14.5	374	226	●	-	-	-	-
MF24	1	23	140	18	14.5	374	240	●	-	-	-	-
MF24	1.5	22.5	140	18	14.5	374	243	●	-	-	-	-
MF24	2	22	140	18	14.5	374	246	●	-	-	-	-
MF26	1.5	24.5	140	18	14.5	374	260	●	-	-	-	-
MF27	1.5	25.5	140	20	16	374	270	●	-	-	-	-
MF27	2	25	140	20	16	374	273	●	-	-	-	-
MF30	1.5	28.5	150	22	18	374	303	●	-	-	-	-
MF30	2	28	150	22	18	374	306	●	-	-	-	-
MF32	1.5	30.5	150	22	18	374	320	●	-	-	-	-
MF33	1.5	31.5	160	25	20	374	330	●	-	-	-	-
MF35	1.5	33.5	170	28	22	374	350	●	-	-	-	-
MF36	1.5	34.5	170	28	22	374	360	●	-	-	-	-
MF38	1.5	36.5	170	28	22	374	380	●	-	-	-	-
MF40	1.5	38.5	170	32	24	374	405	●	-	-	-	-

ORION = Prod. Gr. 1DB
ATORN® = Prod. Gr. 1KC

ATORN® HSSE machine tap (DIN 374)

for universal use up to 1000 N/mm²



Application:

No. 13161: For producing fine metric threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13332: For producing fine metric threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13161:** With transition-fit shank
- **No. 13332:** With protruding shank

Advantage:

- Long service life and high process reliability thanks to innovative cutting geometry, and universal use for maximum flexibility in use.



No. 13161



No. 13332

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13161	16	11		9		18	18	15	18	15	15	13	14	16					
13332	16	11		9		18	18	15	18	15	15	13	14	16					

						Cutting material	HSSE		HSSE	
						Surface	Vaporised		Vaporised	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	C		B	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	40° (right)		0°	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13332... Ident. No.		13161... Ident. No.	
MF4	0.5	3.5	63	2.8	2.1	374	045	●	-	-
MF5	0.5	4.5	70	3.5	2.7	374	050	●	050	●
MF6	0.75	5.2	80	4.5	3.4	374	065	●	065	●
MF8	0.75	7.2	80	6	4.9	374	083	●	083	●
MF8	1	7	90	6	4.9	374	086	●	086	●
MF10	1	9	90	7	5.5	374	103	●	103	●
MF10	1.25	8.8	100	7	5.5	374	106	●	-	-
MF12	1	11	100	9	7	374	120	●	120	●
MF12	1.25	10.8	100	9	7	374	123	●	-	-
MF12	1.5	10.5	100	9	7	374	126	●	126	●
MF14	1.5	12.5	100	11	9	374	146	●	146	●
MF16	1	15	100	12	9	374	160	●	-	-
MF16	1.5	14.5	100	12	9	374	165	●	165	●
MF18	1.5	16.5	110	14	11	374	183	●	183	●

						Cutting material	HSSE		HSSE	
						Surface	Vaporised		Vaporised	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	C		B	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	40° (right)		0°	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13332... Ident. No.		13161... Ident. No.	
MF20	1.5	18.5	125	16	12	374	203	●	203	●
MF22	1.5	20.5	125	18	14.5	374	-	-	220	●
MF24	1.5	22.5	140	18	14.5	374	243	●	243	●
MF24	2	22	140	18	14.5	374	-	-	246	●
MF26	1.5	24.5	140	18	14.5	374	-	-	260	●
MF28	1.5	26.5	140	20	16	374	280	●	-	-
MF30	1.5	28.5	150	22	18	374	303	●	303	●
MF30	2	28	150	22	18	374	-	-	306	●
MF36	1.5	34.5	170	28	22	374	-	-	360	●
MF42	1.5	40.5	170	32	24	374	-	-	420	●
MF45	1.5	43.5	180	36	29	374	-	-	450	●
MF48	1.5	46.5	190	36	29	374	-	-	480	●
MF50	1.5	48.5	190	36	29	374	-	-	500	●

Prod. Gr. 1KC

ATORN® HSSE machine tap (DIN 374)

for universal use up to 1000 N/mm²

MF | ≤3xd | ≤2,5xd | HSSE | ISO 2 | B (3,5-5) | C (2-3) | CNC/conv.



No. 13143



No. 13324

Application:

No. 13143: For producing fine metric threads on CNC or conventional machines in **through holes** in the stainless steel material group.

No. 13324: For producing fine metric threads on CNC machines or conventional machines in **blind holes** in the stainless steel material group.

Execution:

- **No. 13143:** With protruding shank
- **No. 13324:** With transition-fit shank

Advantage:

- **No. 13143:** Long service life and process reliability through innovative cutting geometry in machining stainless steel
- **No. 13324:** Long service life and high process reliability thanks to innovative cutting geometry for use on stainless steels

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13143	16	11		9	10														
13324	16	11		9	10														

Cutting material							HSSE		HSSE	
Surface							Vaporised		Vaporised	
Tol.							ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		C	
Application type/machine type							CNC | Conventional		CNC | Conventional	
Twist angle							0°		15° (right)	
Coolant supply							External		External	
	mm	mm	mm	mm	mm	DIN	13143... Ident. No.		13324... Ident. No.	
MF4	0.5	3.5	63	2.8	2.1	374	045	●	045	●
MF5	0.5	4.5	70	3.5	2.7	374	050	●	050	●
MF6	0.5	5.5	80	4.5	3.4	374	060	●	060	●
MF6	0.75	5.2	80	4.5	3.4	374	065	●	065	●
MF7	0.75	6.2	80	5.5	4.3	374	070	●	-	-
MF8	0.5	7.5	80	6	4.9	374	080	●	-	-
MF8	0.75	7.2	80	6	4.9	374	083	●	083	●
MF8	1	7	90	6	4.9	374	086	●	086	●
MF9	1	8	90	7	5.5	374	090	●	-	-
MF10	0.75	9.2	90	7	5.5	374	100	●	-	-
MF10	1	9	90	7	5.5	374	103	●	103	●
MF10	1.25	8.8	100	7	5.5	374	106	●	106	●
MF11	1	10	90	8	6.2	374	110	●	-	-
MF12	1	11	100	9	7	374	120	●	120	●
MF12	1.25	10.8	100	9	7	374	123	●	-	-
MF12	1.5	10.5	100	9	7	374	126	●	126	●
MF14	1	13	100	11	9	374	140	●	-	-
MF14	1.25	12.8	100	11	9	374	143	●	-	-
MF14	1.5	12.5	100	11	9	374	146	●	146	●
MF15	1	14	100	12	9	374	150	●	-	-
MF16	1	15	100	12	9	374	160	●	-	-
MF16	1.5	14.5	100	12	9	374	165	●	165	●

Cutting material							HSSE		HSSE	
Surface							Vaporised		Vaporised	
Tol.							ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape							B		C	
Application type/machine type							CNC | Conventional		CNC | Conventional	
Twist angle							0°		15° (right)	
Coolant supply							External		External	
	mm	mm	mm	mm	mm	DIN	13143... Ident. No.		13324... Ident. No.	
MF18	1	17	110	14	11	374	180	●	-	-
MF18	1.5	16.5	110	14	11	374	183	●	183	●
MF20	1	19	125	16	12	374	200	●	-	-
MF20	1.5	18.5	125	16	12	374	203	●	203	●
MF20	2	18	140	16	12	374	206	●	206	●
MF22	1	21	125	18	14.5	374	220	●	-	-
MF22	1.5	20.5	125	18	14.5	374	223	●	223	●
MF24	1	23	140	18	14.5	374	240	●	-	-
MF24	1.5	22.5	140	18	14.5	374	243	●	243	●
MF24	2	22	140	18	14.5	374	246	●	-	-
MF26	1.5	24.5	140	18	14.5	374	260	●	-	-
MF30	1.5	28.5	150	22	18	374	303	●	-	-
MF30	2	28	150	22	18	374	306	●	306	●
MF33	1.5	31.5	160	25	20	374	330	●	-	-
MF33	2	31	160	25	20	374	335	●	-	-
MF36	2	34	170	28	22	374	363	●	-	-
MF35	1.5	33.5	170	28	22	374	350	●	-	-
MF36	1.5	34.5	170	28	22	374	360	●	-	-
MF38	1.5	36.5	170	28	22	374	380	●	-	-
MF42	1.5	40.5	170	32	24	374	420	●	-	-
MF48	1.5	46.5	190	36	29	374	480	●	-	-
MF50	1.5	48.5	190	36	29	374	500	●	-	-

Prod. Gr. 1KC

ATORN® HSSE-PM and solid carbide machine tap (DIN Similar to 371)

For machining hardened steels

MF | ≤1xd | VHM | HSSE-PM | TiCN | ISO 2 | D (3,5-5) | CNC/conv.



No. 13152



No. 13153

Application:

No. 13152: For producing fine metric threads on CNC machines in **through holes and blind holes** in the hardened steel material group **up to 55 HRC**.

No. 13153: For manufacturing fine metric threads on CNC machines in **through and blind holes** in the hardened steel material group **up to 65 HRC**.

Execution:

- With reinforced shank

Advantage:

- Long service life and high process reliability thanks to innovative cutting geometry and coating for use on hardened steel

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13152086-126																		3	
13153060-126																		3	2

						Cutting material	VHM		HSSE-PM	
						Surface	TiCN		TiCN	
						Tol.	ISO 2 (6H)		ISO 2 (6H)	
						Lead angle shape	D		D	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		0°	
						Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13153... Ident. No.		13152... Ident. No.	
MF6	0.5	5.5	80	6	4.9	Similar to 371	060	●	-	-
MF8	1	7	90	8	6.2	Similar to 371	086	●	086	●
MF10	1	9	90	10	8	Similar to 371	103	●	103	●
MF12	1	11	100	12	9	Similar to 371	120	●	120	●
MF12	1.5	10.5	100	12	9	Similar to 371	126	●	126	●

Prod. Gr. 1KC

ATORN® machine tap HSSE PM Ultra HL (DIN 5156)

for universal use up to 1200 N/mm²





No. 13213



No. 13216

Application:
No. 13213: For manufacturing pipe threads on CNC or conventional machines in **through holes** in the steel, stainless steel, NF metal, cast and special alloy material groups up to a strength of 1200 N/mm².
No. 13216: For producing pipe threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals, cast and special alloy material groups up to a strength of 1200 N/mm².

Advantage:
- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Technical data:
- PICTO=1749639: 0 mm
- DIN: 5156

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13213010-080	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		
13216010-080	22	16	12	12	12	14	30	17	24	12	20	30	16	18	7	6	6		

						Cutting material	HSSE-PM	HSSE-PM
						Surface	ULTRA HL	ULTRA HL
						Lead angle shape	B	C
						Application type/machine type	CNC | Conventional	CNC | Conventional
						Twist angle	0°	50° (right)
	mm	mm	mm	mm	mm		13213... Ident. No.	13216... Ident. No.
G 1/8 in	28	8.8	90	7	5.5		010 ●	010 ●
G 1/4 in	19	11.8	100	11	9		020 ●	020 ●
G 3/8 in	19	15.25	100	12	9		030 ●	030 ●
G 1/2 in	14	19	125	16	12		040 ●	040 ●
G 5/8 in	14	21	125	18	14.5		050 ●	050 ●
G 3/4 in	14	24.5	140	20	16		060 ●	060 ●
G 1 in	11	30.75	160	25	20		080 ●	080 ●

Prod. Gr. 1KC

ATORN® HSSE V3 machine tap (DIN 5156)

for universal use up to 1200 N/mm²





No. 13221



No. 13222

Application:
No. 13221: For manufacturing pipe threads on CNC or conventional machines in **through holes** in the steel, stainless steel, NF metal, cast and special alloy material groups up to a strength of 1200 N/mm².
No. 13222: For producing pipe threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1200 N/mm².

Advantage:
- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Technical data:
- DIN: 5156

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13221010-080	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		
13222010-080	18	12	6	8	8	8	18	6	16	10	14	15		15	3	3	3		

						Cutting material	HSSE V3		HSSE V3	
						Surface	Vaporised		Vaporised	
						Lead angle shape	B		C	
						Application type/machine type	CNC | Conventional		CNC | Conventional	
						Twist angle	0°		40° (right)	
	mm	mm	mm	mm	mm		13221... Ident. No.		13222... Ident. No.	
G 1/8 in	28	8.8	90	7	5.5		010	●	010	●
G 1/4 in	19	11.8	100	11	9		020	●	020	●
G 3/8 in	19	15.25	100	12	9		030	●	030	●
G 1/2 in	14	19	125	16	12		040	●	040	●
G 5/8 in	14	21	125	18	14.5		050	●	050	●
G 3/4 in	14	24.5	140	20	16		060	●	060	●
G 7/8 in	14	28.25	150	22	18		070	●	070	●
G 1 in	11	30.75	160	25	20		080	●	080	●

Prod. Gr. 1KC

ATORN® HSSE machine tap (DIN 374)

for universal use up to 1000 N/mm²





No. 13207



No. 13378

Application:

No. 13207: For manufacturing pipe threads in through holes on CNC or conventional machines in the steel, stainless steel, NF metal and cast material groups up to a strength of 1000 N/mm².

No. 13378: For producing pipe threads on CNC machines or conventional machines in blind holes in the steel, stainless steel, non-ferrous metals and cast material groups up to a strength of 1000 N/mm².

Execution:

- With protruding shank

Advantage:

- Universal use for maximum flexibility of application
- Innovative cutter geometry ensures high process reliability even in difficult machining conditions

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13207310-400	18	12	8	8	8		18		19		18	15		15					
13378310-400	18	12	8	8	8		18		19		18	15		15					

								ATORN®	
							Cutting material	HSSE	HSSE
							Surface	Vaporised	Vaporised
							Tol.	ISO 2 (6H)	ISO 2 (6H)
							Lead angle shape	B	C
							Application type/machine type	CNC | Conventional	CNC | Conventional
							Twist angle	0°	40° (right)
							Coolant supply	External	External
	mm	mm	mm	mm	mm	DIN	13207... Ident. No.		13378... Ident. No.	
G 1/8 in	28	8.7	90	7	5.5	374	310	●	310	●
G 1/4 in	19	11.8	100	11	9	374	320	●	320	●
G 3/8 in	19	15.3	100	12	9	374	330	●	330	●
G 1/2 in	14	19	125	16	12	374	340	●	340	●
G 3/4 in	14	24.5	140	20	16	374	360	●	360	●
G 1 in	11	30.75	160	25	20	374	380	●	380	●
G 1-1/4 in	11	39.5	170	32	24	374	400	●	400	●

Prod. Gr. 1KC

ATORN® ORION® HSSE machine tap (DIN 5156)

for universal use up to 1000 N/mm²





No. 13207–13209



No. 13378–13379

Application:

No. 13207–13209: For manufacturing pipe threads on CNC or conventional machines in **through holes** in the steel, (stainless steel), NF metal and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13378–13379: For producing pipe threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- With transition-fit shank

Advantage:

- **No. 13207:** Long service life and high process reliability thanks to innovative cutting geometry, and universal use for maximum flexibility in use.
- **No. 13209:** Standard geometry with an excellent price-performance ratio
- **No. 13378–13379:** Long service life and high level of process reliability thanks to innovative cutter geometry and universal application for maximum flexibility in use

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13207	16	12		9		18	18	15	18	15	15	13		16					
13209	16	12		9		18	18	15	18	15	15	13		16					
13379	16	12		9		18	18	15	18	15	15	13		16					

	ATORN®				ORION®			
Cutting material	HSSE		HSSE		HSSE		HSSE	
Surface	Vaporised		Vaporised		Vaporised		Vaporised	
Tol.	ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)		ISO 2 (6H)	
Lead angle shape	B		C		C		B	
Application type/machine type	CNC | Conventional		CNC | Conventional		CNC | Conventional		CNC | Conventional	
Twist angle	0°		40° (right)		40° (right)		0°	
Coolant supply	External		External		External		External	

	mm	mm	mm	mm	mm	DIN	13207... Ident. No.		13378... Ident. No.		13379... Ident. No.		13209... Ident. No.	
G 1/8 in	28	8.8	90	7	5.5	5156	010	●	010	●	010	●	010	●
G 1/4 in	19	11.8	100	11	9	5156	020	●	020	●	020	●	020	●
G 3/8 in	19	15.25	100	12	9	5156	030	●	030	●	030	●	030	●
G 1/2 in	14	19	125	16	12	5156	040	●	040	●	040	●	040	●
G 5/8 in	14	21	125	18	14.5	5156	-	-	050	●	050	●	-	-
G 3/4 in	14	24.5	140	20	16	5156	060	●	060	●	060	●	060	●
G 7/8 in	14	28.25	150	22	18	5156	-	-	070	●	-	-	-	-
G 1 in	11	30.75	160	25	20	5156	080	●	080	●	080	●	080	●
G 1-1/4 in	11	39.25	170	32	24	5156	100	●	-	-	-	-	100	●

ORION = Prod. Gr. 1DB
ATORN® = Prod. Gr. 1KC

ATORN® Machine tap, HSSE Ultra HL (DIN 5156)

for universal use up to 1000 N/mm²





No. 13208



No. 13377

Application:

No. 13208: For manufacturing pipe threads on CNC or conventional machines in **through holes** in the steel, stainless steel, NF metal, cast and special alloy material groups up to a strength of 1000 N/mm².

No. 13377: For producing pipe threads on CNC machines or conventional machines in **blind holes** in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1000 N/mm².

Execution:

- With transition-fit shank

Advantage:

- **No. 13208:**
  - Innovative cutting geometry and ULTRA HL coating guarantee high process reliability even under difficult machining conditions
  - High-quality, torsion-resistant HSSE cutting material and cutting edge finish for very high service life requirements
  - Universal use for maximum flexibility in use
- **No. 13377:**
  - Innovative cutting geometry and newly developed ULTRA HL coating guarantee high process reliability even under difficult machining conditions.
  - High-quality, torsion-resistant HSSE cutting material and cutting edge finish for very high service life requirements.
  - Universal use for maximum flexibility in use.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13208	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		
13377	18	12	8	11	10	19	19	17	19	17	18	13		18	7	6	6		

	HSSE	HSSE
Cutting material	HSSE	HSSE
Surface	ULTRA HL	ULTRA HL
Tol.	ISO 2 (6H)	ISO 2 (6H)
Lead angle shape	B	C
Application type/machine type	CNC | Conventional	CNC | Conventional
Twist angle	0°	45° (right)
Coolant supply	External	External

	mm	mm	mm	mm	mm	DIN	13208... Ident. No.		13377... Ident. No.	
G 1/16 in	28	6.8	90	6	4.9	5156	005	●	005	●
G 1/8 in	28	8.8	90	7	5.5	5156	010	●	010	●
G 1/4 in	19	11.8	100	11	9	5156	020	●	020	●
G 3/8 in	19	15.25	100	12	9	5156	030	●	030	●
G 1/2 in	14	19	125	16	12	5156	040	●	040	●
G 5/8 in	14	21	125	18	14.5	5156	-	-	050	●
G 3/4 in	14	24.5	140	20	16	5156	060	●	060	●
G 7/8 in	14	28.25	150	22	18	5156	070	●	070	●
G 1 in	11	30.75	160	25	20	5156	-	-	080	●

Prod. Gr. 1KC

ATORN® Machine tap, HSSE (DIN Similar to 371)

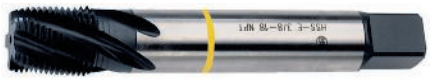
For use on stainless steels

NPT | HSSE | TiN | ISO 2 | C (2-3) | CNC/conv.

Application:
For manufacturing NPT (National Pipe Taper) on CNC or conventional machines in the (steel) and stainless steel material groups up to a strength of 1000 N/mm².

Execution:
- **No. 13360:** With protruding shank
- **No. 13361:** With protruding shank

Advantage:
- Innovative cutting geometry for very high dimensional accuracy, process reliability and chip removal.
- High-quality, torsion-resistant HSSE cutting material and cutting edge finish for very high service life requirements.
- **No. 13360:** Specialised use with optimised chip geometry for use in stainless steels.
- **No. 13361:** Universal use for maximum flexibility in use.



No. 13360



No. 13361

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13360	16	11		11	10														
13361	17	12		10	11														

Cutting material													HSSE				HSSE		
Surface													Vaporised				TiN		
Tol.													ISO 2 (6H)				ISO 2 (6H)		
Lead angle shape													C				C		
Application type/machine type													CNC | Conventional				CNC | Conventional		
Twist angle													15° (right)				15° (right)		
Coolant supply													External				External		
	mm		mm		mm		mm					DIN	13360... Ident. No.				13361... Ident. No.		
NPT 1/8 in	27		8.5		90		11				9	Similar to 371	010	●			010	●	
NPT 1/4 in	27		11		100		14				11	Similar to 371	020	●			-	-	
NPT 1/4 in	18		11		100		14				11	Similar to 371	-	-			020	●	
NPT 3/8 in	18		14.4		110		16				12	Similar to 371	030	●			030	●	
NPT 1/2 in	14		17.8		125		18				14.5	Similar to 371	040	●			040	●	
NPT 3/4 in	14		23.1		140		22				18	Similar to 371	050	●			050	●	

Prod. Gr. 1KC

ATORN® Machine tap, HSSE (DIN 40432)

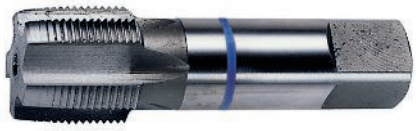
for universal use up to 1000 N/mm²

Pg | ≤3xd | HSS | ISO 2 | C (2-3) | CNC/conv.

Application:
For producing armoured pipe threads (PG) on CNC or conventional machines in **through holes** in the steel (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:
- with over-long shank

Advantage:
- good service life and process reliability thanks to innovative cutting geometry and universal use for the greatest flexibility in applications



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13228	16	12		9		18	18	15	18	15	15	13		16					

Cutting material							HSS	
Surface							Uncoated	
Tol.							ISO 2 (6H)	
Lead angle shape							C	
Application type/machine type							CNC | Conventional	
Twist angle							0°	
Coolant supply							External	
	mm	mm	mm	mm	mm	DIN	13228... Ident. No.	
PG 7 in	20	11.4	70	9	7	40432	070	●
PG 9 in	18	14	70	12	9	40432	090	●
PG 11 in	18	17.25	80	14	11	40432	110	●
PG 13.5 in	18	19	80	16	12	40432	135	●
PG 16 in	18	21.25	80	18	14.5	40432	160	●
PG 21 in	16	27	90	22	18	40432	210	●
PG 29 in	16	35.5	100	28	22	40432	290	●

Prod. Gr. 1KC

ATORN® Machine tap, HSSE (DIN Similar to 371)

for universal conventional use up to 1000 N/mm2





No. 13347



No. 13348

Application:

No. 13347: For producing UNC (Unified Coarse) threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13348: For producing UNC (Unified Coarse) threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13347 030–13347 110, 13348 120–13348 160:** With transition-fit shank
- **No. 13348 025–13348 110:** With reinforced shank

Advantage:

- Long service life and high process reliability thanks to innovative cutting geometry, and universal use for maximum flexibility in use.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13347	16	11		9		18	18	15	18	15	15	13	14	16					
13348025-110	16	11		9		18	18	15	18	15	15	13	14	16					
13348120-160	16	11		9		18	18	15	18	15	15	13	14	16					

Cutting material													HSSE				HSSE		
Surface													Vaporised				Vaporised		
Tol.													2B				2B		
Lead angle shape													C				B		
Application type/machine type													CNC | Conventional				CNC | Conventional		
Twist angle													40° (right)				0°		
Coolant supply													External				External		
	mm		mm		mm		mm		mm			DIN	13348... Ident. No.				13347... Ident. No.		
UNC 2 in	56		1.85		45		2.8		2.1			Similar to 371	025	●			-	-	
UNC 4 in	40		2.35		56		3.5		2.7			Similar to 371	030	●			030	●	
UNC 5 in	40		2.65		56		3.5		2.7			Similar to 371	-	-			035	●	
UNC 6 in	32		2.85		56		4		3			Similar to 371	050	●			050	●	
UNC 8 in	32		3.5		63		4.5		3.4			Similar to 371	060	●			060	●	
UNC 10 in	24		3.9		70		6		4.9			Similar to 371	070	●			070	●	
UNC 12 in	24		4.5		80		6		4.9			Similar to 371	-	-			075	●	
UNC 1/4 in	20		5.1		80		7		5.5			Similar to 371	090	●			090	●	
UNC 5/16 in	18		6.6		90		8		6.2			Similar to 371	100	●			100	●	
UNC 3/8 in	16		8		100		10		8			Similar to 371	110	●			110	●	
UNC 7/16 in	14		9.4		100		8		6.2			Similar to 371	120	●			-	-	
UNC 1/2 in	13		10.8		110		9		7			Similar to 371	130	●			-	-	
UNC 9/16 in	12		12.2		110		11		9			Similar to 371	135	●			-	-	
UNC 5/8 in	11		13.5		110		12		9			Similar to 371	140	●			-	-	
UNC 3/4 in	10		16.5		125		14		11			Similar to 371	145	●			-	-	
UNC 7/8 in	9		19.5		140		18		14.5			Similar to 371	150	●			-	-	
UNC 1 in	8		22.5		160		18		14.5			Similar to 371	160	●			-	-	

Prod. Gr. 1KC

ATORN® HSSE machine tap

for universal use up to 1000 N/mm²





No. 13357



No. 13358

Application:

No. 13357: For producing UNF (Unified Fine) threads on CNC machines or conventional machines in **through holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

No. 13358: For producing UNF (Unified Fine) threads on CNC machines or conventional machines in **blind holes** in the steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm².

Execution:

- **No. 13357 040–13357 110:** With reinforced shank
- **No. 13357 150–13357 170:** With transition-fit shank
- **No. 13358 070–13358 110:** With reinforced shank
- **No. 13358 120–13358 180:** With protruding shank

Advantage:

- Innovative cutting geometry for very high dimensional accuracy, process reliability and chip removal.
- High-quality, torsion-resistant HSSE cutting material and cutting edge finish for very high service life requirements.
- Universal use for maximum flexibility in use.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13357040-110	14	10		8		18	18	15	18	15	15	13	14	16					
13357150-170	14	10		8		18	18	15	18	15	15	13	14	16					
13358070-110	16	11		9		18	18	15	18	15	15	13	14	16					
13358120-180	16	11		9		18	18	15	18	15	15	13	14	16					

Cutting material													HSSE				HSSE		
Surface													Vaporised				Vaporised		
Tol.													2B				2B		
Lead angle shape													B				C		
Application type/machine type													CNC | Conventional				CNC | Conventional		
Twist angle													0°				40° (right)		
Coolant supply													External				External		
	mm		mm		mm		mm		mm		mm	DIN	13357... Ident. No.				13358... Ident. No.		
UNF 4 in	48		2.4		56		2.2		0			Similar to 371	040	●			-	-	
UNF 6 in	40		2.95		56		2.5		2.1			Similar to 371	050	●			-	-	
UNF 10 in	32		4.1		70		6.0		4.9			Similar to 371	070	●			070	●	
UNF 12 in	28		4.6		80		6.0		4.9			Similar to 371	-	-			080	●	
UNF 1/4 in	28		5.5		80		7.0		5.5			Similar to 371	-	-			090	●	
UNF 1/4 in	28		5.5		80		4.5		3.4			Similar to 371	100	●			-	-	
UNF 5/16 in	24		6.9		90		8.0		6.2			Similar to 371	-	-			100	●	
UNF 3/8 in	24		8.5		90		10.0		8.0			Similar to 371	110	●			110	●	
UNF 5/8 in	18		14.5		100		12.0		9.0			Similar to 376	150	●			150	●	
UNF 7/8 in	14		20.4		125		19.0		14.5			Similar to 376	170	●			170	●	
UNF 7/16 in	20		9.9		90		8.0		6.2			Similar to 376	-	-			120	●	
UNF 1/2 in	20		11.5		100		9.0		7.0			Similar to 376	-	-			130	●	
UNF 1 in	12		23.25		140		20.0		14.5			Similar to 376	-	-			180	●	

Prod. Gr. 1KC

ATORN® Machine tap, HSSE (DIN Similar to 371)

for universal use up to 1000 N/mm²

NPT | HSSE | ISO 2 | C (2-3) | CNC/conv.



Application:
For manufacturing NPT (National Pipe Taper) on CNC or conventional machines in the steel, NF metal and (cast) material groups up to a strength of 1000 N/mm².

Execution:
- With protruding shank

Advantage:
- Innovative cutting geometry for very high dimensional accuracy, process reliability and chip removal.
- High-quality, torsion-resistant HSSE cutting material and cutting edge finish for very high service life requirements.
- Universal use for maximum flexibility in use.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13359	16	11				18	18	15	18	15	15	13							

Cutting material	HSSE
Surface	Uncoated
Tol.	ISO 2 (6H)
Lead angle shape	C
Application type/machine type	CNC | Conventional
Twist angle	15° (right)
Coolant supply	External

	mm	mm	mm	mm	mm	DIN	13359... Ident. No.	
NPT 1/8 in	27	8.5	63	7	5.5	Similar to 371	010	●
NPT 1/4 in	18	11.1	63	11	9	Similar to 371	020	●
NPT 3/8 in	18	14.5	70	12	9	Similar to 371	030	●
NPT 1/2 in	14	17.75	80	16	12	Similar to 371	040	●
NPT 3/4 in	14	23	100	20	16	Similar to 371	050	●
NPT 1 in	11,5	29	110	25	20	Similar to 371	060	●

Prod. Gr. 1KC

ATORN® HSS hand tap set (DIN 351)

for universal use up to 1000 N/mm²

BSW | ≤3xd | HSS | ISO 2

Application:
For producing UNC (unified coarse threads) by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm² in single-part production.

Execution:
- Set containing taper tap (form A), second tap (form D) and third tap (plug) (form C)

Advantage:
- Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility



Taper tap, shape A



Second tap, shape D



Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13040	●	●		○		●	●	●	●	●	●	●	○	○					

						Version	Set
						Lead angle shape	A/D/C
mm	mm	mm	mm	mm	mm		13040... Ident. No.	
BSW 1/8 in	40	2.5	40	3.5	2.7	030	●
BSW 5/32 in	32	3.2	45	4.5	3.4	040	●
BSW 3/16 in	24	3.6	50	6	4.9	050	●
BSW 7/32 in	24	4.5	50	6	4.9	060	●
BSW 1/4 in	20	5.1	50	6	4.9	070	●
BSW 5/16 in	18	6.5	56	6	4.9	080	●
BSW 3/8 in	16	7.9	70	7	5.5	090	●
BSW 1/2 in	12	10.5	75	9	7	110	●
BSW 5/8 in	11	13.5	80	12	9	130	●
BSW 3/4 in	10	16.5	95	14	11	140	●

Prod. Gr. 1KM

ATORN® ORION® HSS hand tap (DIN 5157)

for universal use up to 1000 N/mm²

G | HSS | ≤3xd | ISO 2 | D (3,5-5) | C (2-3)

Application:

No. 13045 010–13046 140: For producing pipe threads by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm² in single-part production.

No. 13046 710–13046 880: For manually tapping pipe threads in through holes and blind holes in the steel, NF metal and (cast) material groups up to a strength of 1000 N/mm² in single part production.

Execution:

- **No. 13045 010–13046 140:** Set containing taper tap (form D) and third tap (plug) (form C)
- **No. 13046 710–13046 780:** Taper tap with notch shape A with one ring
- **No. 13046 820–13046 880:** Third tap notch shape C without ring

Advantage:

- **No. 13045:** Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility
- **No. 13046 010–13046 140:** Standard geometry with very good price/performance ratio
- **No. 13046 710–13046 880:** Standard geometry with a very good price-performance ratio



No. 13045 010–13046 140, 13046 820–13046 880
Third tap, shape C



No. 13045 010–13046 780
Taper tap, shape D

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13045	●	●		○		●	●	●	●	●	●	●	○	○					
13046010-140	●	●		○		●	●	●	●	●	●	●	○	○					
13046710-780	●	●		○		●	●	●	●	●	●	●	○	○					
13046810-880	●	●		○		●	●	●	●	●	●	●	○	○					

						ATORN®		ORION®					
						Version		Set		Taper tap		Third tap	
						Lead angle shape		D/C		D		C	
	mm	mm	mm	mm	mm	13045... Ident. No.		13046... Ident. No.		13046... Ident. No.		13046... Ident. No.	
G 1/8 in	28	8.8	63	7	5.5	010	●	010	●	710	●	-	-
G 1/4 in	19	11.8	70	11	9	020	●	020	●	720	●	820	●
G 3/8 in	19	15.25	70	12	9	030	●	030	●	730	●	830	●
G 1/2 in	14	19	80	16	12	040	●	040	●	740	●	840	●
G 5/8 in	14	21	80	18	14.5	-	-	050	●	750	●	850	●
G 3/4 in	14	24.5	90	20	16	060	●	060	●	760	●	860	●
G 7/8 in	14	28.25	90	22	18	-	-	070	●	-	-	-	-
G 1 in	11	30.75	100	22	20	-	-	080	●	780	●	880	●
G 1-1/4 in	11	39.25	125	32	24	-	-	100	●	-	-	-	-
G 1-1/2 in	11	45.25	140	36	29	-	-	120	●	-	-	-	-
G 2 in	11	57	160	45	35	-	-	140	●	-	-	-	-

ORION = Prod. Gr. 1DA
ATORN® = Prod. Gr. 1KM

ATORN® HSS hand tap (DIN 352)

for universal use up to 1000 N/mm²

M | HSS | ≤3xd | ISO 2 | A (6-8) | D (3,5-5) | C (2-3)

Application:

Ident. No. 010–420: For manually tapping metric threads in through holes and blind holes in the steel, NF metal and (cast) material groups up to a strength of 1000 N/mm² in single part production.

Ident. No. 720–952: For producing metric threads by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm² in single-part production.

Execution:

- **Ident. No. 010–420:** Set consisting of taper tap (form A), second tap (form D) and third tap (form C)
- **Ident. No. 720–752:** Taper tap with notch shape A with one ring
- **Ident. No. 820–852:** Second tap with notch shape D with two rings
- **Ident. No. 920–952:** Third tap (plug) with notch shape C without ring

Advantage:

- **Ident. No. 010–420:** Long service life and high level of process reliability thanks to innovative cutting geometry and universal application for maximum flexibility in use
- **Ident. No. 720–952:** Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility



Ident. No. 010–752
Taper tap, shape A



Ident. No. 010–420, 820–852
Second tap, shape D



Ident. No. 010–420, 920–952
Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13010010-420	●	●		○		○	●	●	●	●	●	●	○	○					
13010720-752	●	●		○		○	●	●	●	●	●	●	○	○					
13010820-852	●	●		○		○	●	●	●	●	●	●	○	○					
13010920-952	●	●		○		○	●	●	●	●	●	●	○	○					

						Version	Set		Taper tap		Second tap		Third tap	
						Lead angle shape	A/D/C		A		D		C	
	mm	mm	mm	mm	mm		13010... Ident. No.		13010... Ident. No.		13010... Ident. No.		13010... Ident. No.	
M1	0.25	0.75	32	2.5	2.1		010	●	-	-	-	-	-	-
M1.2	0.25	0.95	32	2.5	2.1		012	●	-	-	-	-	-	-
M1.4	0.3	1.1	32	2.5	2.1		014	●	-	-	-	-	-	-
M1.6	0.35	1.25	32	2.5	2.1		016	●	-	-	-	-	-	-
M1.7	0.35	1.3	32	2.5	2.1		017	●	-	-	-	-	-	-
M1.8	0.35	1.45	32	2.5	2.1		018	●	-	-	-	-	-	-
M2	0.4	1.6	36	2.8	2.1		020	●	720	●	820	●	920	●
M2.3	0.4	1.9	36	2.8	2.1		023	●	-	-	-	-	-	-
M2.5	0.45	2.05	40	2.8	2.1		025	●	-	-	-	-	-	-
M2.6	0.45	2.1	40	2.8	2.1		026	●	726	●	826	●	926	●
M3	0.5	2.5	40	3.5	2.7		030	●	730	●	830	●	930	●
M3.5	0.6	2.9	45	4	3		035	●	-	-	-	-	-	-
M4	0.7	3.3	45	4.5	3.4		040	●	734	●	834	●	934	●
M4.5	0.75	3.7	50	6	4.9		045	●	-	-	-	-	-	-
M5	0.8	4.2	50	6	4.9		050	●	738	●	838	●	938	●
M6	1	5	50	6	4.9		060	●	740	●	840	●	940	●
M7	1	6	50	6	4.9		070	●	-	-	-	-	-	-
M8	1.25	6.8	56	6	4.9		080	●	744	●	844	●	944	●
M9	1.25	7.8	63	7	5.5		090	●	-	-	-	-	-	-
M10	1.5	8.5	70	7	5.5		100	●	748	●	848	●	948	●
M11	1.5	9.5	70	8	6.2		110	●	-	-	-	-	950	●
M12	1.75	10.2	75	9	7		120	●	752	●	852	●	952	●
M14	2	12	80	11	9		140	●	-	-	-	-	-	-
M16	2	14	80	12	9		160	●	-	-	-	-	-	-
M18	2.5	15.5	95	14	11		180	●	-	-	-	-	-	-
M20	2.5	17.5	95	16	12		200	●	-	-	-	-	-	-
M24	3	21	110	18	14.5		240	●	-	-	-	-	-	-
M36	4	32	150	28	22		360	●	-	-	-	-	-	-
M42	4.5	37.5	150	32	24		420	●	-	-	-	-	-	-

Prod. Gr. 1KM

ATORN® HSS left-hand hand tap set (DIN 352)

for universal use up to 1000 N/mm²

M-L | ≤3xd | HSS | ISO 2

Application:
For manually tapping metric left-hand threads in through holes and blind holes in the steel, NF metal and (cast) material groups up to a strength of 1000 N/mm² in single part production.

Execution:
- Set consisting of taper tap (form A), second tap (form D) and third tap (form C)

Advantage:
- Long service life and high level of process reliability thanks to innovative cutting geometry and universal application for maximum flexibility in use



Taper tap, shape A



Second tap, shape D



Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13012	●	●		○		○	●	●	●	●	●	●	○	○					

						Version	Set	
						Lead angle shape	A/D/F	
	mm	mm	mm	mm	mm		13012... Ident. No.	
M-L4	0.7	3.3	45	4.5	3.4		040	●
M-L5	0.8	4.2	50	6	4.9		050	●
M-L6	1	5	50	6	4.9		060	●
M-L8	1.25	6.8	56	6	4.9		080	●
M-L10	1.5	8.5	70	7	5.5		100	●
M-L12	1.75	10.2	75	9	7		120	●
M-L14	2	12	80	11	9		140	●
M-L16	2	14	80	12	9		160	●
M-L20	2.5	17.5	95	16	12		200	●

Prod. Gr. 1KM

ATORN® HSSE hand tap (DIN 352)

For machining stainless steel

M | HSS | HSSE | ≤3xd | ISO 2 | A (6-8) | D (3,5-5) | C (2-3)

Application:

Ident. No. 020–200: For manually tapping metric threads in through holes and blind holes in the (steel), stainless steel, (cast) and special alloy material groups up to a strength of 1300 N/mm² in single part production.

Ident. No. 220–800: For producing metric threads by hand in through holes and blind holes, in (steel), stainless steel, (cast iron) and special alloys material groups up to a strength of 1300 N/mm² in single-part production.

Execution:

- **Ident. No. 020–200:** Set consisting of taper tap (form A), second tap (form D) and third tap (form C)
- **Ident. No. 220–400:** Taper tap with notch shape A with one ring
- **Ident. No. 420–600:** Second tap with notch shape D with two rings
- **Ident. No. 620–800:** Hand tap, third tap (plug) with notch shape C without ring

Advantage:

- **Ident. No. 020–200:** Long service life and high level of process reliability thanks to innovative cutting geometry for machining stainless steel and special alloys
- **Ident. No. 220–800:** Long service life and process reliability through innovative cutting geometry in machining stainless steel and special alloys



Ident. No. 020–400
Taper tap, shape A



Ident. No. 020–200, 420–600
Second tap, shape D



Ident. No. 620–800
Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13014020-200				●	●														
13014220-400				●	●														
13014420-600				●	●														
13014620-800				●	●														

						Version	Set		Taper tap		Second tap		Third tap	
						Lead angle shape	A/D/C		A		D		C	
	mm	mm	mm	mm	mm		13014... Ident. No.		13014... Ident. No.		13014... Ident. No.		13014... Ident. No.	
M2	0.4	1.6	36	2.8	2.1		020	●	220	●	420	●	620	●
M2.5	0.45	2.05	40	2.8	2.1		025	●	225	●	425	●	625	●
M3	0.5	2.5	40	3.5	2.5		030	●	230	●	430	●	630	●
M3.5	0.6	2.9	45	4	2.9		035	●	235	●	435	●	635	●
M4	0.7	3.3	45	4.5	3.3		040	●	240	●	440	●	640	●
M5	0.8	4.2	50	6	4.2		050	●	250	●	450	●	650	●
M6	1	5	56	6	5		060	●	260	●	460	●	660	●
M8	1.25	6.8	63	6	6.8		080	●	280	●	480	●	680	●
M10	1.5	8.5	70	7	8.5		100	●	300	●	500	●	700	●
M12	1.75	10.2	75	9	10.2		120	●	320	●	520	●	720	●
M16	2	14	80	12	14		160	●	360	●	560	●	760	●
M20	2.5	17.5	95	16	17.5		200	●	400	●	600	●	800	●

Prod. Gr. 1KM

ATORN® HSSE hand tap set (DIN 352)

For high-strength steels < 1300 N/mm²

M | HSSE | ≤3xd | ISO 2 | A (6-8) | D (3,5-5) | C (2-3)

Application:

Ident. No. 020–160: For manually tapping metric threads in through holes and blind holes in the (steel), stainless steel, (cast) and special alloy material groups up to a strength of 1300 N/mm² in single part production.

Ident. No. 720–952: For producing metric threads by hand in through holes and blind holes, in steel, (stainless steel), cast iron and (special alloys) material groups up to a strength of 1300 N/mm² in single-part production.

Execution:

- **Ident. No. 020–160:** Set consisting of taper tap (form A), second tap (form D) and third tap (form C)
- **Ident. No. 720–752:** Taper tap with notch shape A with one ring
- **Ident. No. 820–852:** Second tap with notch shape D with two rings
- **Ident. No. 920–952:** Third tap (plug) with notch shape C without ring

Advantage:

- **Ident. No. 020–160:** Long service life and high level of process reliability thanks to innovative cutting geometry for machining high-strength steel
- **Ident. No. 720–952:** Long service life and process reliability through innovative cutting geometry in machining high-strength steel



Ident. No. 020–752
Taper tap, shape A



Ident. No. 020–160, 820–852
Second tap, shape D



Ident. No. 020–160, 920–952
Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13015020-160	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		
13015720-752	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		
13015820-852	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		
13015920-952	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		

						Version	Set		Taper tap		Second tap		Third tap	
						Lead angle shape	A/D/C		A		D		C	
	mm	mm	mm	mm	mm		13015... Ident. No.		13015... Ident. No.		13015... Ident. No.		13015... Ident. No.	
M2	0.4	1.6	36	2.8	2.1		020	●	720	●	820	●	920	●
M2.5	0.45	2.05	40	2.8	2.1		025	●	-	-	-	-	-	-
M3	0.5	2.5	40	3.5	2.7		030	●	730	●	830	●	930	●
M4	0.7	3.3	45	4.5	3.4		040	●	734	●	834	●	934	●
M5	0.8	4.2	50	6	4.9		050	●	738	●	838	●	938	●
M6	1	5	50	6	4.9		060	●	740	●	840	●	940	●
M8	1.25	6.8	56	6	4.9		080	●	744	●	844	●	944	●
UN10	1.5	8.5	70	7	5.5		100	●	-	-	-	-	-	-
M10	1.5	8.5	70	7	5.5		-	-	748	●	848	●	948	●
M12	1.75	10.2	75	9	7		120	●	752	●	852	●	952	●
M14	2	12	80	11	9		140	●	-	-	-	-	-	-
M16	2	14	80	12	9		160	●	-	-	-	-	-	-

Prod. Gr. 1KM

ATORN® HSSE-PM hand tap (DIN 352)

For high-strength steels < 1300 N/mm²

M | HSSE-PM | ≤3xd | ISO 2 x | A (6-8) | D (3,5-5) | C (2-3)

Application:

Ident. No. 030–120: For manually tapping metric threads in through holes and blind holes in the (steel), stainless steel, (cast) and special alloy material groups up to a strength of 1300 N/mm² in single part production.

Ident. No. 734–944: For producing metric threads by hand in through holes and blind holes, in steel, (stainless steel), cast iron and (special alloys) material groups up to a strength of 1300 N/mm² in single-part production.

Execution:

- **Ident. No. 030–120:** Set consisting of taper tap (form A), second tap (form D) and third tap (form C)
- **Ident. No. 734–744:** Taper tap with notch shape A with one ring
- **Ident. No. 834–844:** Second tap with notch shape D with two rings
- **Ident. No. 934–944:** Third tap (plug) with notch shape C without ring

Advantage:

- **Ident. No. 030–120:** Long service life and high level of process reliability thanks to innovative cutting geometry for machining high-strength steel
- **Ident. No. 734–944:** Long service life and process reliability through innovative cutting geometry in machining high-strength steel



Ident. No. 030–120, 744–844
Second tap, shape D



Ident. No. 030–120, 934–944
Third tap, shape C



Ident. No. 030–740
Taper tap, shape A

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13017030-120	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		
13017734-744	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		
13017834-844	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		
13017934-944	○	○	●	○		○	○	○	○	○	○	○		●	○	○	○		

						Version	Set		Taper tap		Second tap		Third tap	
						Lead angle shape	A/D/C		A		D		C	
	mm	mm	mm	mm	mm		13017... Ident. No.		13017... Ident. No.		13017... Ident. No.		13017... Ident. No.	
M3	0.5	2.5	40	3.5	2.7		030	●	-	-	-	-	-	-
M4	0.7	3.3	45	4.5	3.4		040	●	734	●	834	●	934	●
M5	0.8	4.2	50	6	4.9		050	●	738	●	838	●	938	●
M6	1	5	50	6	4.9		060	●	740	●	840	●	940	●
M8	1.25	6.8	56	6	4.9		080	●	744	●	844	●	944	●
M10	1.5	8.5	70	7	5.5		100	●	-	-	-	-	-	-
M12	1.75	10.2	75	9	7		120	●	-	-	-	-	-	-

Prod. Gr. 1KM

ORION® ATORN® HSS hand tap (DIN 2181)

for universal use up to 1000 N/mm²

MF | HSS | ≤3xd | ISO 2 | D (3,5-5) | C (2-3)

Application:

No. 13020 045–13020 360, 13023 803–13023 886: For manually tapping fine metric threads in through holes and blind holes in the steel, NF metal and (cast) material groups up to a strength of 1000 N/mm² in single part production.

No. 13023 030–13023 786: For producing metric fine threads by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm² in single-part production.

Execution:

- **No. 13020:** Set consisting of taper tap (form A) and third tap (form C)
- **No. 13023 030–13023 280:** Set containing taper tap (form A) and third tap (plug) (form C)
- **No. 13023 703–13023 786:** Taper tap with notch shape A with one ring
- **No. 13023 803–13023 886:** Third tap notch shape C without ring

Advantage:

- **No. 13020:** Long service life and high level of process reliability thanks to innovative cutting geometry and universal application for maximum flexibility in use
- **No. 13023 030–13023 786:** Standard geometry with very good price/performance ratio
- **No. 13023 803–13023 886:** Standard geometry with a very good price-performance ratio



No. 13020 045–13023 786
Taper tap, shape D



No. 13020 045–13023 280, 13023 803–13023 886
Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13020	●	●		○		●	●	●	●	●	●	●	○	○					
13023030-280	●	●		○		●	●	●	●	●	●	●	○	○					
13023703-786	●	●		○		●	●	●	●	●	●	●	○	○					
13023803-886	●	●		○		●	●	●	●	●	●	●	○	○					

						ORION		ATORN		ORION			
						Version		Set		Taper tap		Third tap	
						Lead angle shape		D/C		D		C	
	mm	mm	mm	mm	mm	13023... Ident. No.		13020... Ident. No.		13023... Ident. No.		13023... Ident. No.	
MF3	0.35	2.65	40	3.5	2.7	030	●	-	-	-	-	-	-
MF4	0.5	3.5	45	4.5	3.4	045	●	045	●	-	-	-	-
MF5	0.5	4.5	50	6	4.9	050	●	050	●	-	-	-	-
MF6	0.5	5.5	50	6	4.9	-	-	060	●	-	-	-	-
MF6	0.75	5.2	50	6	4.9	065	●	065	●	-	-	-	-
MF7	0.75	6.2	50	6	4.9	-	-	070	●	-	-	-	-
MF8	0.5	7.5	50	6	4.9	-	-	080	●	-	-	-	-
MF8	0.75	7.2	50	6	4.9	083	●	083	●	-	-	-	-
MF8	1	7	56	6	4.9	086	●	086	●	786	●	886	●
MF10	1	9	63	7	5.5	103	●	103	●	703	●	803	●
MF10	1.25	8.8	70	7	5.5	106	●	106	●	-	-	-	-
MF10	0.75	9.2	68	7	5.5	-	-	100	●	-	-	-	-
MF12	1	11	70	9	7	120	●	120	●	720	●	820	●
MF12	1.25	10.8	70	9	7	123	●	123	●	-	-	-	-
MF12	1.5	10.5	70	9	7	126	●	126	●	726	●	826	●
MF14	1	13	70	11	9	140	●	140	●	-	-	-	-
MF14	1.25	12.8	70	11	9	143	●	143	●	-	-	-	-
MF14	1.5	12.5	70	11	9	146	●	146	●	742	●	842	●
MF15	1	14	70	12	9	-	-	150	●	-	-	-	-
MF16	1	15	70	12	9	160	●	160	●	-	-	-	-
MF16	1.5	14.5	70	12	9	165	●	165	●	765	●	865	●
MF18	1	17	80	14	11	180	●	180	●	780	●	880	●
MF18	1.5	16.5	80	14	11	183	●	183	●	783	●	883	●
MF20	1	19	80	16	12	200	●	200	●	-	-	-	-
MF20	1.5	18.5	80	16	12	203	●	203	●	713	●	813	●
MF20	2	18	80	16	12	206	●	-	-	-	-	-	-
MF22	1.5	20.5	80	18	14.5	223	●	223	●	-	-	-	-
MF22	1	21	80	18	14.5	220	●	-	-	-	-	-	-
MF24	1	23	90	18	14.5	-	-	240	●	-	-	-	-
MF24	1.5	22.5	90	18	14.5	243	●	243	●	-	-	-	-
MF24	2	22	90	18	14.5	-	-	246	●	-	-	-	-
MF26	1.5	24.5	90	18	14.5	260	●	-	-	-	-	-	-
MF27	2	25	90	20	16	-	-	275	●	-	-	-	-
MF28	1.5	26.5	90	20	16	280	●	-	-	-	-	-	-
MF30	1.5	28.5	90	22	18	-	-	303	●	-	-	-	-
MF30	2	28	90	22	18	-	-	306	●	-	-	-	-
MF36	1.5	34.5	100	28	22	-	-	360	●	-	-	-	-

ORION = Prod. Gr. 1DA
ATORN® = Prod. Gr. 1KM

ATORN® HSS left-hand hand tap set (DIN 2181)

for universal use up to 1000 N/mm²

MF-L | ≤3xd | HSS | ISO 2

Application:
For producing metric fine threads by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm² in single-part production.

Execution:
- Set containing taper tap (form A) and third tap (plug) (form C)

Advantage:
- Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility



Taper tap, shape D



Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13022	●	●		○		●	●	●	●	●	●	●	○	○					

						Version	Set
						Lead angle shape	D/C
	mm	mm	mm	mm	mm		13022... Ident. No.	
MF-L8	1	7	56	6	4.9		086	●
MF-L10	1	9	63	7	5.5		103	●
MF-L12	1	11	70	9	7		120	●
MF-L12	1.5	10.5	70	9	7		126	●
MF-L14	1.5	12.5	70	11	9		146	●
MF-L16	1.5	14.5	70	12	9		165	●
MF-L18	1.5	16.5	80	14	11		183	●
MF-L20	1.5	18.5	80	16	12		203	●

Prod. Gr. 1KM

ATORN® HSS hand tap set

for universal use up to 1000 N/mm²

UNC | ≤3xd | HSS

Application:
For producing UNC (unified coarse threads) by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm² in single-part production.

Execution:
- Set containing taper tap (form A), second tap (form D) and third tap (plug) (form C)

Advantage:
- Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility



Taper tap, shape A



Second tap, shape D



Third tap, shape C

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13030	●	●		○		●	●	●	●	●	●	●	○	○					

						Version Lead angle shape	Set A/D/C 13030... Ident. No.	
	mm	mm	mm	mm	mm	mm		
UNC 3 in	48	2.1	40	2.8	2.1		030	●
UNC 4 in	40	2.35	40	3.5	2.7		040	●
UNC 5 in	40	2.65	40	3.5	2.7		050	●
UNC 6 in	32	2.85	45	4	3		060	●
UNC 8 in	32	3.5	45	4.5	3.4		070	●
UNC 10 in	24	3.9	50	6	4.9		080	●
UNC 1/4 in	20	5.1	50	6	4.9		100	●
UNC 5/6 in	18	6.6	56	6	4.9		110	●
UNC 3/8 in	16	8	70	7	5.5		120	●
UNC 7/16 in	14	9.4	75	8	6.2		130	●
UNC 1/2 in	13	10.8	75	9	7		140	●
UNC 5/8 in	11	13.5	80	12	9		160	●
UNC 3/4 in	10	16.5	95	14	11		170	●
UNC 7/8 in	9	19.5	100	18	14.5		180	●

Prod. Gr. 1KM

ATORN® HSS hand tap set (DIN 2181)

for universal use up to 1000 N/mm²

UNF | ≤3xd | HSS

Application:
For producing UNC (unified coarse threads) by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of 1000 N/mm² in single-part production.

Execution:
- Set containing taper tap (form D) and third tap (plug) (form C)

Advantage:
- Long service life and process reliability through innovative cutting geometry and universal use for maximum application flexibility



Third tap, shape C



Taper tap, shape D

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13035	●	●		○		●	●	●	●	●	●	●	○	○					

						Version Lead angle shape	Set D/C 13035... Ident. No.	
	mm	mm	mm	mm	mm	mm		
UNF 4 in	48	2.4	40	3.5	2.7		050	●
UNF 6 in	40	2.95	45	4	3		070	●
UNF 8 in	36	3.5	45	4.5	3.4		080	●
UNF 10 in	32	4.1	50	6	4.9		090	●
UNF 12 in	28	4.6	50	6	4.9		100	●
UNF 1/4 in	28	5.5	50	6	4.9		110	●
UNF 5/16 in	24	6.9	56	6	4.9		120	●
UNF 3/8 in	24	8.5	63	7	5.5		130	●
UNF 7/16 in	20	9.9	63	8	6.2		140	●
UNF 1/2 in	20	11.5	63	9	7		150	●
UNF 9/16 in	18	12.9	70	11	9		160	●
UNF 5/8 in	18	14.5	70	12	9		170	●

Prod. Gr. 1KM

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

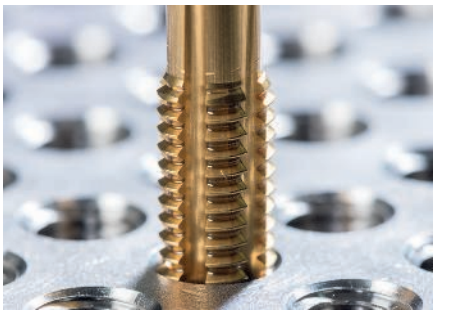
Female thread creation: Thread forming (thread tapping)

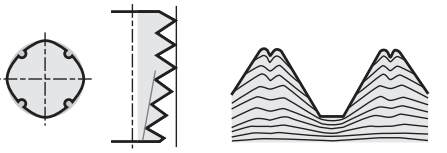
In contrast to tapping, where sections are cut out of the material, the process of thread forming does not involve cutting. The material is made to flow through the polygon shape of the thread former. The fibre pattern is not interrupted.

Advantages:
- Very high working speed and process reliability
- Very high surface quality
- One tool for through hole and blind hole
- No clamping problems
- Higher thread strength
- Tools are easier to use
- Long service life, less breakage
- Deep threads

Disadvantages:
- Higher torque
- Special pre-drilling diameter with tight tolerance
- Incomplete moulding of cores (claw)
- Minimum expansion of tool must be ensured
- Regrinding not possible
- Lubrication essential
- Where used in the food or medicine industries, there is a risk of germ build-up in the area of the moulding recess.







Thread forming – the process

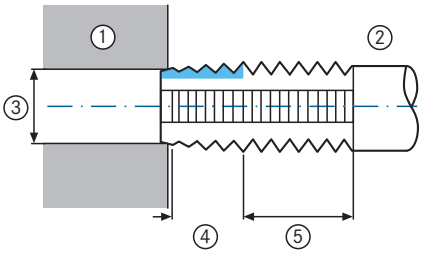
Process:
In contrast to tapping, where sections are cut out of the material, thread forming is a non-cutting, pressure forming procedure.

Advantages:
- No chip formation
- Up to 30% higher surface quality than with thread cutting
- Up to 40% higher processing speed than with thread cutting
- Threads in through holes and blind holes can be produced with the same tool
- Wide range of materials processable
- Cutting of thread eliminated
- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

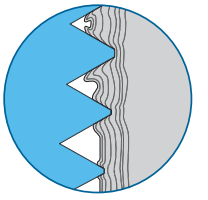
Requirements: For all shapeable materials with elongation >10 %.



unlike with screw tapping, in thread forming the thread is produced by deforming the material. the screw-shaped, polygonal, threaded part of the tool is “screwed in” to the pre-drilled workpiece. It is fed in evenly to match the target thread pitch. the thread profile penetrates the workpiece gradually via the initial cut, causing it to flow and deform plastically.



① workpiece ② tool ③ pre-drill diameter
④ run-in ⑤ guide part



For more detailed information and explanations, refer to the technical manual.

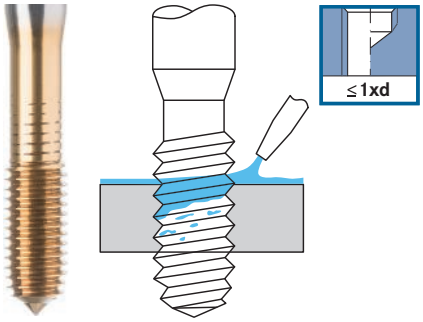
Lubrication grooves on thread formers

Process:
In contrast to tapping, where sections are cut out of the material, thread forming is a non-cutting, pressure forming procedure.

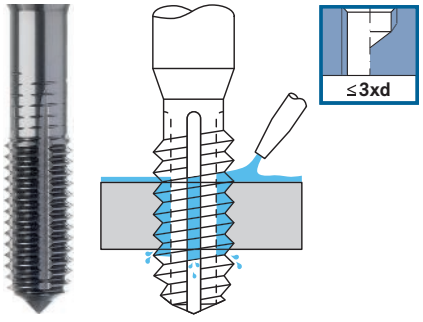
Advantages:
- No chip formation
- Up to 30% higher surface quality than with thread cutting
- Up to 40% higher processing speed than with thread cutting
- Threads in through holes and blind holes can be produced with the same tool
- Wide range of materials processable
- Cutting of thread eliminated
- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.

We distinguish between two different tool types when it comes to thread formers. There are thread formers with and without lubrication grooves. Lubrication grooves ensure uniform lubrication even in the lower section of deeper threads. Lubrication grooves are also necessary in horizontal machining. Thread formers with lubrication grooves can be used universally. Thread formers without lubrication grooves can produce thread depths of up to 1.5xD with an optimum service life.



Thread formers without lubrication grooves



Thread formers with lubrication grooves

For more detailed information and explanations, refer to the technical manual.

Core hole drilling when thread forming

Process:
In contrast to tapping, where sections are cut out of the material, thread forming is a non-cutting, pressure forming procedure.

Advantages:
- No chip formation
- Up to 30% higher surface quality than with thread cutting
- Up to 40% higher processing speed than with thread cutting
- Threads in through holes and blind holes can be produced with the same tool
- Wide range of materials processable
- Cutting of thread eliminated
- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.

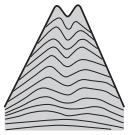
It is also necessary to drill core holes when thread forming, in order to create a shaped thread. The core hole must have a defined diameter within a certain tolerance range. Countersinking is also essential. When thread forming, however, the core hole is significantly more accurate than when tapping.

Example:
Thread M10 x 1.5 is 9.30 mm.
Tolerance = max. hole 9.38 mm - min. hole = 9.26 mm = 0.12 mm.
When tapping, the tolerance for the same thread is 0.3 mm.

It is important that the drilling is conducted with very accurate drills. The best results are achieved with solid carbide tools. The following graphics illustrate the relationship between the various core hole diameters and their impact on the formed thread.



Pre-drill diameter too large:
- Thread not fully formed
- Moulding recess too big
- Profile height too low



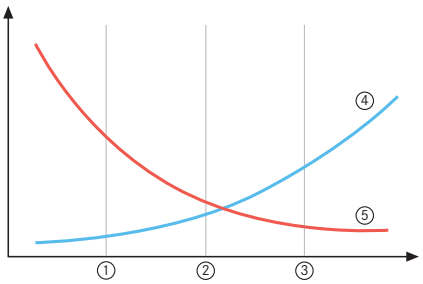
Optimal pre-drill diameter:
- Thread fully formed
- Small moulding recess
- Ideal profile height



Pre-drill diameter too small:
- Thread over-formed
- No moulding recess
- Profile height too high

By optimising the pre-drill diameter, a significantly higher service life can be achieved, not only in series production generally, but also with materials which are difficult to machine such as stainless steel. This graphic illustrates the relationship:

① Minimum dimension
② Nominal dimension
③ Maximum dimension
④ Service life
⑤ Torque



For more detailed information and explanations, refer to the technical manual.

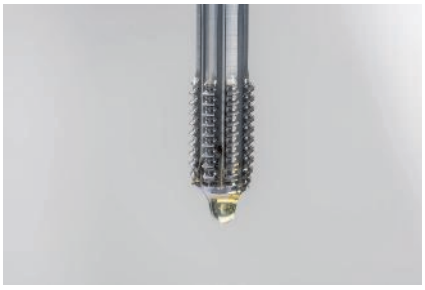

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Lubrication and cooling during thread forming

Process:
In contrast to tapping, where sections are cut out of the material, thread forming is a non-cutting, pressure forming procedure.

Advantages:
- No chip formation
- Up to 30% higher surface quality than with thread cutting
- Up to 40% higher processing speed than with thread cutting
- Threads in through holes and blind holes can be produced with the same tool
- Wide range of materials processable
- Cutting of thread eliminated
- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.



in thread forming, the main job of the coolant is lubrication. the more lubrication is used with the highest possible grease content, the longer the service life. we distinguish between the following coolants:

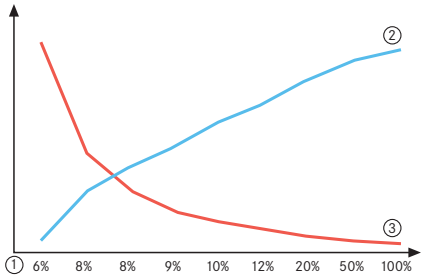
non water-soluble coolants

these are mineral oils with the best lubricating properties. they minimise friction and thus increase the service life.

water-soluble coolants

can be emulsified with water. the grease content of these coolants should be no lower than 6%. the ideal grease content is over 12%.

① coolant grease content ② service life ③ friction



For more detailed information and explanations, refer to the technical manual.

Cutting materials in thread forming

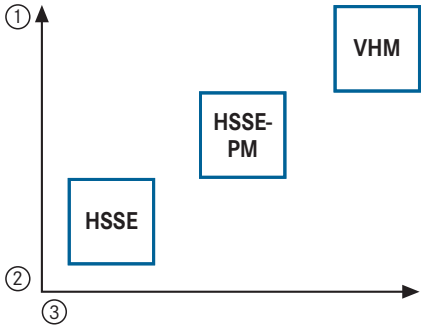
Process:
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- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.

Selecting the correct cutting material in thread forming depends strongly on the machine conditions and the quantity to be manufactured. The cutting materials HSSE and HSSE-PM are used in the small to medium quantity range or with unstable machine conditions. In large-scale series production, it is more economical to use solid carbide thread formers.

① Stable ② Unstable ③ Service life/procurement costs



For more detailed information and explanations, refer to the technical manual.

Coatings and surface treatments for thread forming

Process:
In contrast to tapping, where sections are cut out of the material, thread forming is a non-cutting, pressure forming procedure.

Advantages:
- No chip formation
- Up to 30% higher surface quality than with thread cutting
- Up to 40% higher processing speed than with thread cutting
- Threads in through holes and blind holes can be produced with the same tool
- Wide range of materials processable
- Cutting of thread eliminated
- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.

Titanium nitride
This universal coating is suitable for softer steels and non-ferrous metals. It is only of limited suitability for high-strength steel and stainless steels.
- Vickers hardness: 2200–2300 HV
- Friction coefficient: 0.5
- Temperature resistance: 500–600°C
- Colour: Gold

TiN



Titanium carbon nitride
Its high level of hardness makes titanium carbon nitride coating very well suited to all steels as well as stainless steels, titanium and cast materials above GGG50.
- Vickers hardness: 3000 HV
- Friction coefficient of steel: 0.2
- Temperature resistance: 400°C
- Colour: Blue grey
- (anthracite) lubrication: Oil/emulsion

TiCN



Titanium aluminium nitride
The titanium aluminium nitride coating is suitable for steels and for alloyed heat-treated
steels, tool steels, high-speed steels, stainless steels, titanium, hardened steels and nickel-based materials.
- Vickers hardness: 3200 HV
- Friction coefficient of steel: 0.2
- Temperature resistance: <800°C
- Colour: Blue-grey (anthracite)
- Lubrication: Oil/emulsion

TiAlN



Aluminium chrome nitride
The aluminium chrome nitride coating achieves a very long service life due to its wear resistance, oxidation resistance and high-temperature hardness. This coating is only suitable for steel materials in combination with oil as a coolant.
- Vickers hardness: 3200 HV
- Friction coefficient of steel: 0.35
- Temperature resistance: <1100°C
- Colour: Grey blue
- Lubrication: Oil

AlCrN



CARBO
The CARBO coating is an extremely hard layer and was developed for all non-ferrous metals such as copper, brass and aluminium. Built-up edges are significantly reduced by the high level of hardness and low friction coefficient.
- Vickers hardness: 6000 HV
- Friction coefficient: 0.1
- Temperature resistance: 700°C
- Colour: Black
- Lubrication: Oil/emulsion

CARBO



For more detailed information and explanations, refer to the technical manual.

Clamping device recommendation for thread forming

	Length compensation chuck	Synchronous tapping chuck	Collet chucks	Shrink-fit chucks	Hydro-expansion chucks	Surface chuck
						
Length compensation range	9-15 mm	0.5-1 mm	0	0	0	0
Suitable for usage conditions	Unstable	Unstable-stable (synchronous)	Stable (synchronous)	Stable (synchronous)	Stable (synchronous)	Stable
Suitable for conventional machines	◉	○	○			
Suitable for CNC machines	○	●	◉	◉	◉	◉
Suitable for HSSE/HSSE PM thread formers	◉	◉	◉	◉	◉	◉
Suitable for solid carbide thread formers		◉	○	○	○	○

● = very well suited ◉ = suitable ○ = limited suitability

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

thread formers without lubrication grooves
for thread depths of up to 1-1.5xD

≤1xd



	Ø	Cutting material	Surface	Tolerance of screw taps	Coolant supply	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	
13394009-100	M1-M20	HSSE	TiN	ISO 2 (6H)	External	●	●	●	●	○	
13394620-700	M2-M12	HSSE	TiN	ISO 3 (6G)	External	●	●	●	●	○	
13398021-100	M2-M10	HSSE-PM	Carbo coating	ISO 2X (6HX)	External					○	
13398130-180	M3-M8	HSSE-PM	Carbo coating	ISO 3X (6GX)	External					○	

thread formers with lubrication grooves
for thread depths of up to 3xD

≤3xd



	Ø	Cutting material	Surface	Tolerance of screw taps	Coolant supply	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	
13394130-200	M3-M16	HSSE	TiN	ISO 2X (6HX)	External	●	●	●	●	○	
13394530-600	M3-M16	HSSE	AlCrN	ISO 2X (6HX)	External	●	●	●	●	○	
13393730-800	M3-M20	HSSE	Carbo coating	ISO 2X (6HX)	External					○	
13394330-400	M3-M16	HSSE	TiN	ISO 3X (6GX)	External	●	●	●	●	○	
13396100-134	MF6-MF24	HSSE	TiN	ISO 2 (6H)	External	●	●	●	●	○	
13396200-210	G 1/16-G 3/4 inch	HSSE	TiN		External	●	●	●	●	○	

thread formers with lubrication grooves with internal cooling
for thread depths of up to 3xD

≤3xd



	Ø	Cutting material	Surface	Tolerance of screw taps	Coolant supply	P 700 N/mm²	P 1000 N/mm²	P 1300 N/mm²	M	N	
13393350-400	M5-M20	HSSE-PM	TiCN	ISO 2 (6H)	Internal radial	●	●	●	●	○	
13398650-700	M5-M20	HSSE-PM	TiAlN	ISO 2X (6HX)	Internal radial	●	●	●	●	○	
13393530-600	M3-M16	VHM	TiAlN	ISO 2 (6H)	Internal	●	●	●	●	○	
13399100-145	MF8-MF24	HSSE-PM	TiCN	ISO 2X (6HX)	Internal radial	●	●	●	●	○	
13399530-600	M3-M20	HSSE-PM	TiN	ISO 2X (6HX)	Internal axial	●	●	●	●	○	

ATORN® Machine thread former HSSE-TiN type Uni

For universal use up to 1300 N/mm²

M | ≤1xd | HSSE | CNC/conv. | TiN | C (2-3)



Ident. No. 009–201



Ident. No. 620–720

Application:
For producing metric threads in through holes and blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion.

Execution:
- Without lubrication grooves, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability
- **Ident. No. 120–201, 720:** High-quality, torsion-resistant HSSE cutting material and surface finish for very high service life requirements

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13394009-100	30	25	10	10	7	26	38	20	30	18	25								
13394120-201	30	25	10	10	7	26	38	20	30	18	25								
13394620-700	30	25	10	10	7	26	38	20	30	18	25								
13394720	30	25	10	10	7	26	38	20	30	18	25								

Cutting material							HSSE		HSSE	
Surface							TiN		TiN	
Tolerance of screw taps							ISO 2 (6H)		ISO 3 (6G)	
Lead angle shape							C		C	
Application type/machine type							CNC | Conventional		CNC | Conventional	
Coolant supply							External		External	
	mm	mm	mm	mm	mm	DIN	13394... Ident. No.		13394... Ident. No.	
M1	0.25	0.9	40	2.5	2.1	Similar to 371	009	●	-	-
M1.2	0.25	1.1	40	2.5	2.1	Similar to 371	012	●	-	-
M1.4	0.3	1.28	40	2.5	2.1	Similar to 371	014	●	-	-
M1.6	0.35	1.46	40	2.5	2.1	Similar to 371	016	●	-	-
M1.7	0.35	1.55	40	2.5	2.1	Similar to 371	017	●	-	-
M1.8	0.35	1.66	40	2.5	2.1	Similar to 371	018	●	-	-
M2	0.4	1.8	45	2.8	2.1	Similar to 371	020	●	620	●
M2.5	0.45	2.3	50	2.8	2.1	Similar to 371	025	●	625	●
M3	0.5	2.8	56	3.5	2.7	Similar to 371	030	●	630	●
M3.5	0.6	3.25	56	4	3	Similar to 371	035	●	635	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	040	●	640	●
M5	0.8	4.65	70	6	4.9	Similar to 371	050	●	650	●
M6	1	5.55	80	6	4.9	Similar to 371	060	●	660	●
M8	1.25	7.4	90	8	6.2	Similar to 371	080	●	680	●
M10	1.5	9.3	100	10	8	Similar to 371	100	●	700	●
M12	1.75	11.2	110	9	7	Similar to 376	120	●	720	●
M14	2	13.1	110	11	9	Similar to 376	141	●	-	-
M16	2	15.1	110	12	9	Similar to 376	161	●	-	-
M20	2.5	18.9	140	16	12	Similar to 376	201	●	-	-

Prod. Gr. 1KE

ATORN® Machine thread former HSSE-PM Carbo type Aluminium (DIN Similar to 371)

For use in non-ferrous metals

M | ≤1xd | HSSE-PM | CNC/conv. | CARBO | C (2-3)



Ident. No. 021–100



Ident. No. 130–180

Application:
For manufacturing metric threads in through holes and blind holes on CNC and conventional machines in the NF metal material group up to a strength of 1300 N/mm² with a material expansion of > 10%.

Execution:
- With lubrication grooves, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability.
- High-quality, torsion-resistant HSSE PM cutting material and surface finish for very high service life requirements.
- Cutting edge finish for very high service life requirements.
- Innovative carbo coating for very good gliding properties and emergency operating function if coolant supply is interrupted.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13398021-100						40	50	35	45	27	32								
13398130-180						40	50	35	45	27	32								

							Cutting material	HSSE-PM		HSSE-PM	
							Surface	Carbo coating		Carbo coating	
							Tolerance of screw taps	ISO 2X (6HX)		ISO 3X (6GX)	
							Lead angle shape	C		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional	
							Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13398... Ident. No.			13398... Ident. No.	
M2	0.4	1.8	45	2.8	2.1	Similar to 371	021	●		-	-
M2.5	0.45	2.3	50	2.8	2.1	Similar to 371	025	●		-	-
M3	0.5	2.8	56	3.5	2.7	Similar to 371	031	●		130	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	041	●		140	●
M5	0.8	4.65	70	6	4.9	Similar to 371	050	●		150	●
M6	1	5.55	80	6	4.9	Similar to 371	060	●		160	●
M8	1.25	7.4	90	8	6.2	Similar to 371	080	●		180	●
M10	1.5	9.3	100	10	8	Similar to 371	100	●		-	-

Prod. Gr. 1KE

ATORN® Machine thread former HSSE-TiN type Uni

for universal use up to 1300 N/mm²



M | ≤3xd | HSSE | CNC/conv. | TiN | C (2-3)

Application:
For producing metric threads on CNC machines or conventional machines in through holes and blind holes in the **steel, stainless steel and non-ferrous metals material groups up to a strength of 1300 N/mm²** with > 10% material expansion.

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability.
- High-quality, torsion-resistant HSSE cutting material and surface finish for very high service life requirements.

Execution:
- With lubrication grooves, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13394130-200	30	25	10	10	7	26	38	20	30	18	25								
13394212-216	30	25	10	10	7	26	38	20	30	18	25								
13394330-400	30	25	10	10	7	26	38	20	30	18	25								
13394412-416	30	25	10	10	7	26	38	20	30	18	25								

							Cutting material	HSSE		HSSE	
							Surface	TiN		TiN	
							Tolerance of screw taps	ISO 2X (6HX)		ISO 3X (6GX)	
							Lead angle shape	C		C	
							Application type/machine type	CNC | Conventional		CNC | Conventional	
							Coolant supply	External		External	
	mm	mm	mm	mm	mm	DIN	13394... Ident. No.			13394... Ident. No.	
M3	0.5	2.8	56	3.5	2.7	Similar to 371	130	●		330	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	140	●		340	●
M5	0.8	4.65	70	6	4.9	Similar to 371	150	●		350	●
M6	1	5.55	80	6	4.9	Similar to 371	160	●		360	●
M8	1.25	7.4	90	8	6.2	Similar to 371	180	●		380	●
M10	1.5	9.3	100	10	8	Similar to 371	200	●		400	●
M12	1.75	11.2	110	9	7	Similar to 376	212	●		412	●
M16	2	15	110	12	9	Similar to 376	216	●		416	●

Prod. Gr. 1KE

ATORN® Machine thread former HSSE-PM TiCN type Uni

for universal use up to 1300 N/mm²



M | ≤3xd | HSSE-PM | CNC/conv. | TiCN | C (2-3)

Application:
For producing metric threads on CNC machines or conventional machines in through holes and blind holes in the **steel, stainless steel and non-ferrous metals material groups up to a strength of 1300 N/mm²** with > 10% material expansion.

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability
- High-quality, torsion-resistant HSSE PM cutting material and surface finish for very high service life requirements

Execution:
- With lubrication grooves, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13394730-800	30	25	10	10	7	26	38	20	30	18	25								
13394820-900	30	25	10	10	7	26	38	20	30	18	25								

						Cutting material	HSSE-PM	
						Surface	TiCN	
						Tolerance of screw taps	ISO 2X (6HX)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13394... Ident. No.	
M3	0.5	2.8	56	3.5	2.7	Similar to 371	730	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	740	●
M5	0.8	4.65	70	6	4.9	Similar to 371	750	●
M6	1	5.55	80	6	4.9	Similar to 371	760	●
M8	1.25	7.4	90	8	6.2	Similar to 371	780	●
M10	1.5	9.3	100	10	8	Similar to 371	800	●
M12	1.75	11.2	110	9	7	Similar to 376	820	●
M16	2	15	110	12	9	Similar to 376	860	●
M20	2.5	18.9	140	16	12	Similar to 376	900	●

Prod. Gr. 1KE

ATORN® Machine thread former HSSE Carbo type ALU

for use in non-ferrous metals



Application:
For producing metric threads on CNC machines or conventional machines in through holes and blind holes in **non-ferrous metals** up to a strength of 1300 N/mm² with a material expansion of > 10%.

Execution:
- With lubrication grooves, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability
- High-quality, torsion-resistant HSSE PM cutting material and surface finish for very high service life requirements
- Innovative carbo coating for very good gliding properties and emergency operating function if coolant supply is interrupted

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13393730-800						40	50	35	45	27	32								
13393820-900						40	50	35	45	27	32								

						Cutting material	HSSE	
						Surface	Carbo coating	
						Tolerance of screw taps	ISO 2X (6HX)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13393... Ident. No.	
M3	0.5	2.8	56	3.5	2.7	Similar to 371	730	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	740	●
M5	0.8	4.65	70	6	4.9	Similar to 371	750	●
M6	1	5.55	80	6	4.9	Similar to 371	760	●
M8	1.25	7.4	90	8	6.2	Similar to 371	780	●
M10	1.5	9.3	100	10	8	Similar to 371	800	●
M12	1.75	11.2	110	9	7	Similar to 376	820	●
M16	2	15	110	12	9	Similar to 376	860	●
M20	2.5	18.9	140	16	12	Similar to 376	900	●

Prod. Gr. 1KE

ATORN® Machine thread former HSSE-ALCRN lubrication grooves

for universal use up to 1300 N/mm² with oil lubrication



Application:
For producing metric threads on CNC machines or conventional machines in through holes and blind holes **with oil lubrication** in the **steel, stainless steel and non-ferrous metals material groups up to a strength of 1300 N/mm²** with > 10% material expansion.

Execution:
- With lubrication grooves, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability.
- High-quality, torsion-resistant HSSE cutting material and surface finish for very high service life requirements.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13394530-600	30	25	10	10	7	26	38	20	30	18	25								
13394612-616	30	25	10	10	7	26	38	20	30	18	25								

						Cutting material	HSSE	
						Surface	AlCrN	
						Tolerance of screw taps	ISO 2X (6HX)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13394... Ident. No.	
M3	0.5	2.8	56	3.5	2.7	Similar to 371	530	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	540	●
M5	0.8	4.65	70	6	4.9	Similar to 371	550	●
M6	1	5.55	80	6	4.9	Similar to 371	560	●
M8	1.25	7.4	90	8	6.2	Similar to 371	580	●
M10	1.5	9.3	100	10	8	Similar to 371	600	●
M12	1.75	11.2	110	9	7	Similar to 376	612	●
M16	2	15	110	12	9	Similar to 376	616	●

Prod. Gr. 1KE

ATORN® HSSE-PM TiN synchronous machine thread former

for universal use up to 1300 N/mm²

M | ≤3xd | HSSE-PM | CNC/conv. | TiN | C (2-3)



Application:
For manufacturing metric threads in through holes and blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion.

Execution:
- With lubrication grooves, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability.
- Short guide component reduces friction.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13393130-200	30	25	10	10	7	26	38	20	30	18	25								
13393220-260	30	25	10	10	7	26	38	20	30	18	25								

						Cutting material	HSSE-PM	
						Surface	TiN	
						Tolerance of screw taps	ISO 2 (6H)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Coolant supply	External	
	mm	mm	mm	mm	mm	DIN	13393... Ident. No.	
M3	0.5	2.8	56	3.5	2.7	Similar to 371	130	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	140	●
M5	0.8	4.65	70	6	4.9	Similar to 371	150	●
M6	1	5.55	80	6	4.9	Similar to 371	160	●
M8	1.25	7.4	90	8	6.2	Similar to 371	180	●
M10	1.5	9.3	100	10	8	Similar to 371	200	●
M12	1.75	11.2	110	9	7	Similar to 376	220	●
M14	2	13.1	110	14	11	Similar to 376	240	●
M16	2	15	110	12	9	Similar to 376	260	●

Prod. Gr. 1KE

ATORN® Machine thread former HSSE-PM TiALN IC radial, type Uni

for universal use up to 1300 N/mm²

M | ≤3xd | HSSE-PM | CNC/conv. | TiAlN | C (2-3) | IK



Application:
For manufacturing metric threads in blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion.

Execution:
- With lubrication grooves and internal cooling, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability.
- High-quality, torsion-resistant HSSE PM cutting material and surface finish for very high service life requirements.
- Cutting edge finish for very high service life requirements.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13398650-700	45	30	20	18	12	40	50	35	45	27	32								
13398720-800	45	30	20	18	12	40	50	35	45	27	32								

						Cutting material	HSSE-PM	
						Surface	TiAlN	
						Tolerance of screw taps	ISO 2X (6HX)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Coolant supply	Internal radial	
	mm	mm	mm	mm	mm	DIN	13398... Ident. No.	
M5	0.8	4.65	70	6	4.9	Similar to 371	650	●
M6	1	5.55	80	6	4.9	Similar to 371	660	●
M8	1.25	7.4	90	8	6.2	Similar to 371	680	●
M10	1.5	9.3	100	10	8	Similar to 371	700	●
M12	1.75	11.2	110	9	7	Similar to 376	720	●
M14	2	13.1	110	11	9	Similar to 376	740	●
M16	2	15	110	12	9	Similar to 376	760	●
M20	2.5	18.9	140	16	12	Similar to 376	800	●

Prod. Gr. 1KE

ATORN® Machine thread former HSSE-PM TiALN IC radial, type Uni

for universal use up to 1300 N/mm²



M | ≤3xd | HSSE-PM | CNC/conv. | TiCN | C (2-3) | IK

Application:
For producing metric threads on CNC and conventional machines in blind holes in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion.

Execution:
- With lubrication grooves and internal cooling, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability
- High-quality, torsion-resistant HSSE PM cutting material and surface finish for very high service life requirements
- Cutting edge finish for very high service life requirements

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13393350-400	45	30	20	18	12	40	50	35	45	27	32								
13393420-500	45	30	20	18	12	40	50	35	45	27	32								

						Cutting material	HSSE-PM	
						Surface	TiCN	
						Tolerance of screw taps	ISO 2 (6H)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Coolant supply	Internal radial	
	mm	mm	mm	mm	mm	DIN	13393... Ident. No.	
M5	0.8	4.65	70	6	4.9	Similar to 371	350	●
M6	1	5.55	80	6	4.9	Similar to 371	360	●
M8	1.25	7.4	90	8	6.2	Similar to 371	380	●
M10	1.5	9.3	100	10	8	Similar to 371	400	●
M12	1.75	11.2	110	9	7	Similar to 376	420	●
M16	2	15	110	12	9	Similar to 376	460	●
M18	2.5	16.9	125	14	11	Similar to 376	480	●
M20	2.5	18.9	140	16	12	Similar to 376	500	●

Prod. Gr. 1KE

ATORN® Machine thread former SC TiALN IC radial type Uni

for universal use up to 1300 N/mm²



M | ≤3xd | VHM | CNC/Synchro | TiAlN | C (2-3) | IK

Application:
For producing metric threads in through holes and blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion.

Execution:
- With lubrication grooves and internal cooling, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability
- Solid carbide cutting material and surface treatment for very high service life requirements

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13393530-600	45	30	20	18	12	40	50	35	45	27	32								
13393620-660	45	30	20	18	12	40	50	35	45	27	32								

						Cutting material	VHM	
						Surface	TiAlN	
						Tolerance of screw taps	ISO 2 (6H)	
						Lead angle shape	C	
						Application type/machine type	CNC	
						Coolant supply	Internal	
	mm	mm	mm	mm	mm	DIN	13393... Ident. No.	
M3	0.5	2.8	56	3.5	2.7	Similar to 371	530	●
M4	0.7	3.7	63	4.5	3.4	Similar to 371	540	●
M5	0.8	4.65	70	6	4.9	Similar to 371	550	●
M6	1	5.55	80	6	4.9	Similar to 371	560	●
M8	1.25	7.4	90	8	6.2	Similar to 371	580	●
M10	1.5	9.3	100	10	6.2	Similar to 371	600	●
M12	1.75	11.2	110	9	7	Similar to 376	620	●
M14	2	13.1	110	11	9	Similar to 376	640	●
M16	2	15.1	110	12	9	Similar to 376	660	●

Prod. Gr. 1KE

ATORN® Machine thread former, extra long, HSSE-PM TiN type Uni

for universal use up to 1300 N/mm²



M | ≤3xd | HSSE-PM | CNC/conv. | TiN | C (2-3) | IK

Application:
For manufacturing deeply recessed fine metric threads in through holes and blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion in single part and series production.

Execution:
- Extra-long machine thread former with lubrication grooves

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability.
- Very easy access to deeply recessed threads.
- **Ident. No. 530–600:**
  - High-quality, torsion-resistant HSSE PM cutting material and surface finish for very high service life requirements.
  - Cutting edge finish for very high service life requirements.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13399530-600	45	30	20	18	12	40	50	35	45	27	32								
13399620-700	45	30	20	18	12	40	50	35	45	27	32								

						Cutting material	HSSE-PM	
						Surface	TiN	
						Tolerance of screw taps	ISO 2X (6HX)	
						Lead angle shape	C	
						Application type/machine type	CNC | Conventional	
						Coolant supply	Internal axial	
	mm	mm	mm	mm	mm	DIN	13399... Ident. No.	
M3	0.5	2.8	112	2.2	-	Similar to 371 | 2174	530	●
M4	0.7	3.7	112	2.8	2.1	Similar to 371 | 2174	540	●
M5	0.8	4.65	125	3.5	2.7	Similar to 371 | 2174	550	●
M6	1	5.55	125	4.5	3.7	Similar to 371 | 2174	560	●
M8	1.25	7.4	140	6.0	4.9	Similar to 371 | 2174	580	●
M10	1.5	9.3	160	7	5.5	Similar to 371 | 2174	600	●
M12	1.75	11.2	180	9	7	Similar to 376 | 2174	620	●
M16	2	15.1	220	12	9	Similar to 376 | 2174	660	●
M20	2.5	18.9	280	16	12	Similar to 376 | 2174	700	●

Prod. Gr. 1KE

ATORN® Machine thread former HSSE-TiN type Uni (DIN 374)

for universal use up to 1300 N/mm²



MF | ≤3xd | HSSE | CNC/conv. | TiN | C (2-3)

Application:
For producing metric threads in through holes and blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion.

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability
- High-quality, torsion-resistant HSSE cutting material and surface finish for very high service life requirements

Technical data:
- DIN: 374

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13396100-134	30	25	10	10	7	26	38	20	30	18	25								

Cutting material	HSSE
Surface	TiN
Tolerance of screw taps	ISO 2 (6H)
Lead angle shape	C
Application type/machine type	CNC | Conventional
Coolant supply	External

						13396... Ident. No.	
	mm	mm	mm	mm	mm		
MF6	0.75	5.65	80	4.5	3.4	100	●
MF8	0.75	7.65	90	6	4.9	102	●
MF8	1	7.55	90	6	4.9	104	●
MF10	1	9.55	100	7	5.5	106	●
MF10	1.25	9.4	100	7	5.5	108	●
MF12	1	11.55	100	9	7	110	●
MF12	1.25	11.4	100	9	7	112	●
MF12	1.5	11.3	100	9	7	114	●
MF14	1	13.55	100	11	9	116	●
MF14	1.5	13.3	100	11	9	118	●
MF16	1	15.55	100	12	9	120	●
MF16	1.5	15.3	100	12	9	122	●
MF18	1	17.55	110	14	11	124	●
MF18	1.5	17.3	110	14	11	126	●
MF20	1	19.55	125	16	12	128	●
MF20	1.5	19.3	125	16	12	130	●
MF22	1.5	21.3	125	18	14.5	132	●
MF24	1.5	23.3	140	18	14.5	134	●

Prod. Gr. 1KF

ATORN® Machine thread former HSSE-PM TiALN IC radial, type Uni

(DIN Similar to 374)

for universal use up to 1300 N/mm²

MF | ≤3xd | HSSE-PM | CNC/conv. | TiCN | C (2-3) | IK



Application:
For manufacturing deeply recessed fine metric threads in through holes and blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion in single part and series production.

Execution:
- With lubrication grooves and internal cooling, structural dimensions according to: DIN 371 = reinforced shank (up to M10), DIN 376 = protruding shank (from M12)

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability.
- High-quality, torsion-resistant HSSE PM cutting material and surface finish for very high service life requirements.
- Cutting edge finish for very high service life requirements.
- Very long service life thanks to TiAlN coating.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13399100-145	45	30	20	18	12	40	50	35	45	27	32								

Cutting material	HSSE-PM
Surface	TiCN
Tolerance of screw taps	ISO 2X (6HX)
Lead angle shape	C
Application type/machine type	CNC | Conventional
Coolant supply	Internal radial

							13399... Ident. No.	
	mm	mm	mm	mm	mm	DIN		
MF8	1	7.55	90	8	6.2	Similar to 374	100	●
MF10	1	9.55	90	10	8	Similar to 374	105	●
MF10	1.25	9.4	100	10	8	Similar to 374	110	●
MF12	1.25	11.4	100	9	7	Similar to 374	115	●
MF12	1.5	11.3	100	9	7	Similar to 374	120	●
MF14	1.5	13.3	100	11	9	Similar to 374	125	●
MF16	1.5	15.3	100	12	9	Similar to 374	130	●
MF18	1.5	17.3	110	14	11	Similar to 374	135	●
MF20	1.5	19.3	125	16	12	Similar to 374	140	●
MF24	1.5	23.3	140	18	14.5	Similar to 374	145	●

Prod. Gr. 1KF

ATORN® HSSE TiN machine thread former

For universal use up to 1300 N/mm²





Application:
For producing metric threads in through holes and blind holes on CNC and conventional machines in the steel, stainless steel and NF metal material groups up to a strength of 1300 N/mm² with > 10% material expansion.

Advantage:
- Innovative mould geometry ensures very high dimensional accuracy and process reliability
- High-quality, torsion-resistant HSSE cutting material and surface finish for very high service life requirements

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13396200-210	30	25	10	10	7	26	38	20	30	18	25								

Cutting material	HSSE
Surface	TiN
Lead angle shape	C
Application type/machine type	CNC | Conventional
Coolant supply	External

						13396... Ident. No.	
	mm	mm	mm	mm	mm		
G1/16	28	7.3	90	6	4.9	200	●
G1/8	28	9.3	90	7	5.5	202	●
G1/4	19	12.5	100	11	9	204	●
G3/8	19	16	100	12	9	206	●
G1/2	14	20	125	16	12	208	●
G3/4	14	25.5	140	20	16	210	●

Prod. Gr. 1KF

Female thread creation: Milling cutter

The development of computer-controlled machines has made the thread milling procedure another option for creating female threads. The thread is produced by the helical diagonal immersion of a rotating tool. In the process, the axial movement of the tool in one revolution produces the pitch. For this procedure, a CNC machine with at least three axes is required (XYZ).

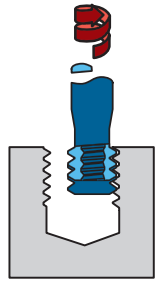
Advantages, tool cost minimisation:
- right-hand and left-hand thread can be manufactured with a tool
- thread milling cutters cover different threads with the same pitch
- for partial thread profiles, a wide range of threads can be produced with a cutting insert

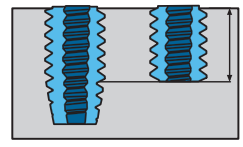
Advantages, process reliability:
- Extremely high process reliability with very expensive components
- Reliable process solution for problem materials with poor chip breaking and difficult chip formation
- First choice with thin-walled workpieces or unstable clamping operations
- High thread quality
- Thread can be made right to the base of a blind hole
- Radius compensation programming enables thread tolerance to be adjusted easily

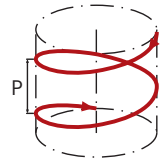
Disadvantages:
- machine requirements (XYZ axes)
- machining times generally longer in series production
- limited experience of the user in thread milling











Thread milling – the process

Process:
In contrast to tapping, where sections are cut out of the material, thread forming is a non-cutting, pressure forming procedure.

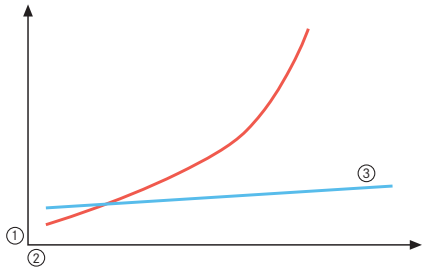
Advantages:
- No chip formation
- Up to 30% higher surface quality than with thread cutting
- Up to 40% higher processing speed than with thread cutting
- Threads in through holes and blind holes can be produced with the same tool
- Wide range of materials processable
- Cutting of thread eliminated
- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.

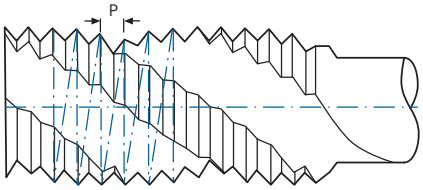


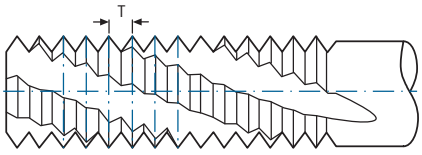
Thread milling is a universal process for the production of male and female threads. It is equally suitable for soft to high-strength materials. Unlike screw tapping and thread forming, in thread milling the forces increase only slightly when the diameter is increased. This makes the process the number one choice when manufacturing large threads on less powerful machines. The diagram illustrates the relationship.

① Torque ② Thread size ③ Thread milling



the successive tool teeth of the thread milling cutter do not form a spiral, instead they are arranged without pitch. The thread pitch must be produced by a CNC machine with the Z axis. Thread milling produces very small chips, so the working process is extremely reliable. This is a crucial advantage; particularly with very expensive components.





For more detailed information and explanations, refer to the technical manual.

Cutting materials in thread milling

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- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.

VHM

Thread milling only uses the extremely universal solid carbide cutting material, which can be used to machine all material groups. In comparison to screw tapping, thread milling only involves minimal torsional forces, so bending strength is not decisive. In thread milling, low bending strength can even help to prevent the thread milling cutter being deflected.

For more detailed information and explanations, refer to the technical manual.

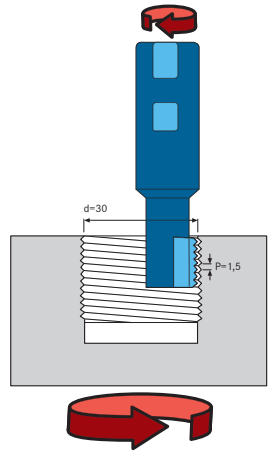
Selecting the thread milling cutter diameter

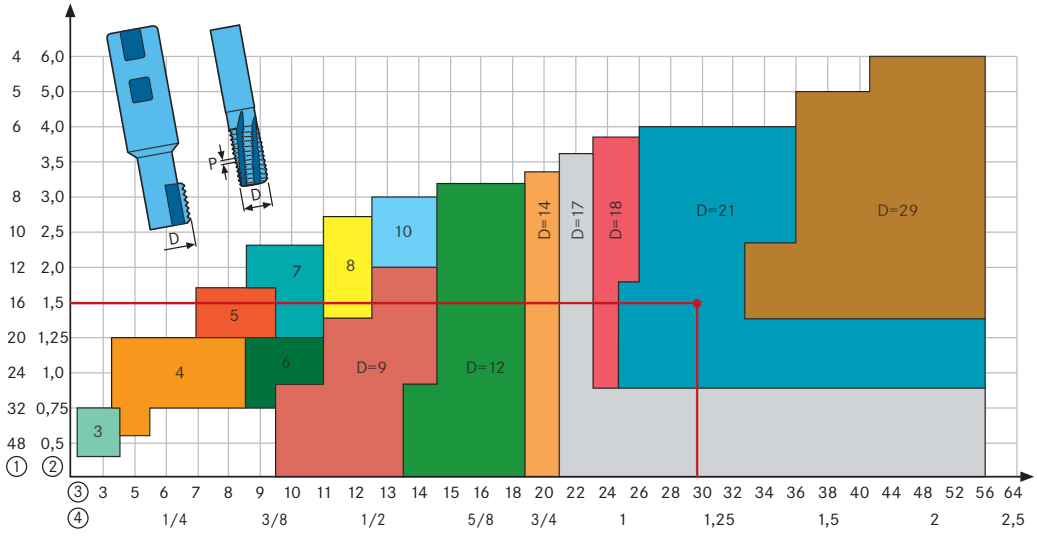
Process:
In contrast to tapping, where sections are cut out of the material, thread forming is a non-cutting, pressure forming procedure.

Advantages:
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- Threads in through holes and blind holes can be produced with the same tool
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- Cutting of thread eliminated
- Thread pitch and thread angle errors as with cut threads eliminated
- Shaped threads have higher strength owing to non-continuous cut

Requirements: For all shapeable materials with elongation >10 %.

Each thread milling cutter generates a certain shape error, especially near the base. The relationship between thread diameter, milling cutter diameter and pitch is the decisive factor. **To minimise the shape error, the thread cutter diameter should not be larger than 70% ± 15% of the thread diameter**.
The correct thread cutter diameter can be determined using the diagram on the next page. An example can be used to illustrate the situation:
A female thread of M30 x 1.5 is to be produced.
If we now include the pitch and thread diameter to be created in the diagram, the points cross. At the intersection is where we find the recommended thread cutter diameter. In our case, the optimum cutter diameter is 21 mm.
The cutter diameter of 21 mm can be found with the combination of no. 13397 035 (support) + no. 13397 226 (cutting insert). This product can be found in our main catalogue.
The diameter can be calculated in a different way using the following rule of thumb.
When producing an M30 thread, the optimum milling cutter diameter would be 70% of the thread being made. (In this case it would be exactly 21 mm)





P = pitch D = cutting tool diameter
① Turns/inch ② Turns/mm ③ mm ④ inches

For more detailed information and explanations, refer to the technical manual.

Thread milling strategies

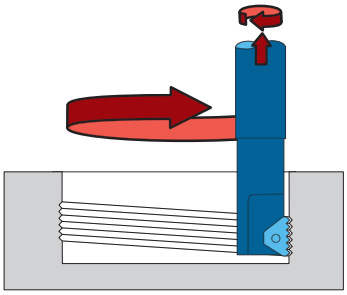
Process:
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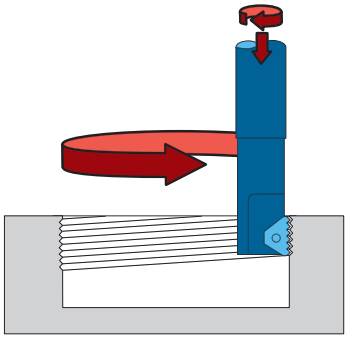
Requirements: For all shapeable materials with elongation >10 %.

When milling female threads, there are four different strategies for doing so.

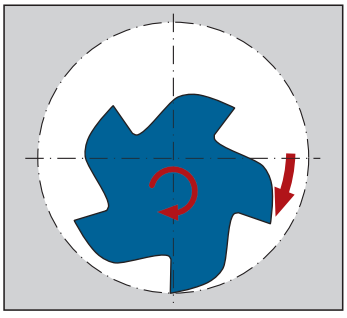
- Right-hand thread asynchronous milling: In this process, the start point is at the top and milling occurs downwards in a circular manner, against the direction of rotation.
- Right-hand thread, synchronous: In this process, the start point is at the bottom and milling occurs upwards in a circular manner (see diagram on the left).
- Left-hand thread asynchronous milling: In this process, the start point is at the bottom and milling occurs upwards in a circular manner, against the direction of rotation.
- Left-hand thread, synchronous: In this process, the start point is at the top and milling occurs downwards in a circular manner (see diagram on the left).



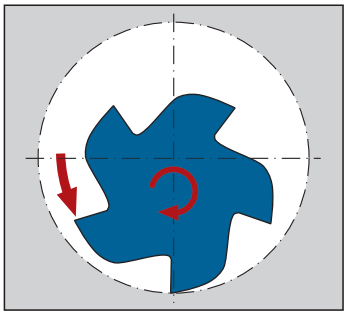
Right-hand thread, internal machining



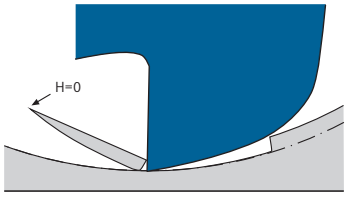
Left-hand thread, internal machining



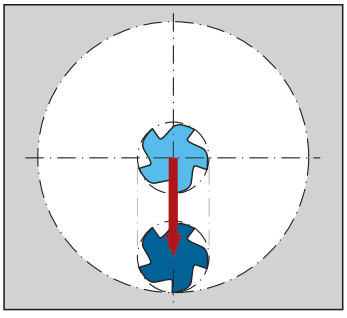
Asynchronous milling



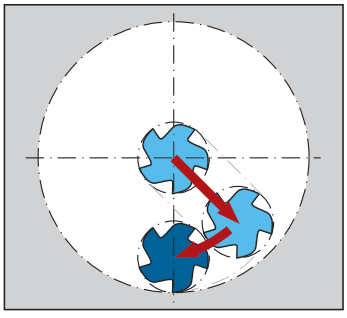
Synchronous milling



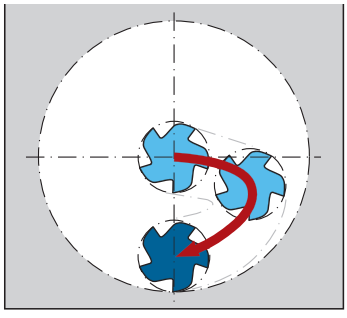
Synchronous milling can be recognised by the fact that, at the end of the cutter, chips are produced with h=0



Straight insertion
When the thread milling cutter is inserted in a straight line, a very large wrap angle is generated, leading to long chips and a high tool load. This method also leaves a small dwell mark.



90° quarter circle descending loop
With the 90° descending loop, the majority of the chip volume is removed from the straight part of the descending loop. This has the advantage of making programming simpler and ensuring a relatively short descent.



180° semi-circle descending loop
The 180° descending loop offers the lowest tool load on descent because the wrap angle on the entire descending loop is relatively small. In terms of programming, this method is more complex, but has proved to be the most advantageous during thread milling and in terms of tool wear.

For more detailed information and explanations, refer to the technical manual.

Internal cooling during thread milling

Internal cooling is of particular importance when it comes to thread milling. The short chips must be rinsed out of the working area by the coolant medium. Otherwise, the chips produced could damage the surface of the thread or even cause cavities on the tool.

We make a fundamental distinction between thread milling cutters with axial coolant flow, used for blind holes, and modified variants with radial coolant flow, which are ideal for through holes.



Thread milling cutters with axial coolant flow



Thread milling cutters with radial coolant flow

Clamping device recommendation for thread milling

	Collet chucks	Shrink-fit chucks	Hydro-expansion chucks	Surface chuck	Power chucks
					
Suitable for pitches up to 1.5 mm	○	○	○	◎	●
Suitable for pitches above 1.5 mm			◎	●	●
Vibration-damping	○	○	◎	○	◎
Surface quality	○	◎	◎	○	●

● = very well suited ◎ = suitable ○ = limited suitability

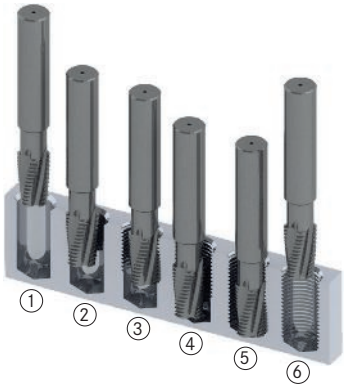
Types of thread milling cutter

We distinguish between the following types of thread milling cutter:

Multi-range thread milling cutter without collar recess
The simple construction of the multi-range thread milling cutter makes it a cost-effective tool for milling female threads. With this type of cutter, two to three thread sizes can be produced at the same pitch above the specified nominal dimensions. Please note the relationship between milling diameter and thread size.



Multi-range thread milling cutter with collar recess



The multi-range thread milling cutter with collar recess is suitable for universal application. The collar recess enables very deep threads to be milled. With this type of cutter, all thread sizes can be produced at the same pitch above a nominal dimension.



Process steps for thread milling cutter with collar recess:
① Tool moves to initial position, centred above drill hole
② Start of thread milling with descending loop
③ Milling of tread with subsequent ascending loop
④ Start of second thread milling program with descending loop
⑤ Milling of thread with subsequent ascending loop
⑥ Movement to initial position and end of machining procedure

Thread milling cutter with countersinking step



The thread milling cutter with countersinking step is characterised by the combination of countersinking and thread milling. With this type of cutter, two to three thread sizes can be produced at the same pitch above the specified nominal dimensions.



Process steps:
① Tool moves to start position centred on hole
② 90° bevel countersink
③ Begins thread milling with descending loop
④ Thread milling with subsequent ascending loop
⑤ Moves to start position and ends machining

Micro-thread milling cutter

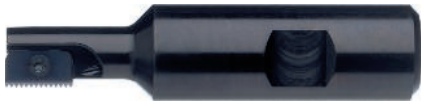


Micro thread milling cutters allow threads to be produced reliably from M1 up to a thread depth of 5xD. Here, we differentiate between two tool geometries: A universal geometry covering all material groups up to 1500 N/mm² and a hard machining geometry, developed for hardened materials up to 63 HRC. With hard machining, the thread milling cutter is used in anti-clockwise rotation M04 to achieve the optimum service life.



Process steps:
① Tool moves to start position centred on hole
② 90° arc in
③ Thread milling
④ 90° arc out
⑤ Final position

Thread milling cutter with thread cutting insert
The advantages of thread milling are particularly apparent with larger threads. Due to the enormous cost of the solid carbide cutting material over the diameter range of 20 mm, supports made of steel or solid carbide and fitted with a solid carbide cutting insert can be used. With high projections or deep threads, a support made from solid carbide should be used to ensure sufficient rigidity. If the correct cutting insert has been selected, male threads can also be created. The cutting inserts are all in a full profile design and enable the production of high-precision thread.



Thread milling system with front milling cutter insert
The development of the thread milling system with front milling cutter insert has enabled the production of medium to large thread through a reliable process. Here, two support designs are also available in steel and solid carbide. In terms of cutting inserts, both partial and full-profile plates are available. Partial profile plates allow threads to be created with different pitches, and full-profile plates allow precise threads with one pitch.



multi-range thread milling cutter
for female thread milling



		IK	P	M	N	K	S	
13496560-612	Multi-range thread milling cutter, solid carbide TIAlN (M, MF) with axial internal cooling For universal use up to 1500 N/mm2 in female threads.	Internal	●	●	●	●	●	

micro-thread milling cutter type Uni
for female thread milling



		P	M	N	K	S	H 65HRC	
13496801-928	Solid carbide TiAlN 2xD thread milling cutter (M, MF) For universal use up to 1500 N/mm2 in female threads.	●	●	●	●	●		
13496930-958	Solid carbide TiAlN 3xD thread milling cutter. For universal use up to 1500 N/mm2 in female threads.	●	●	●	●	●		

micro-thread milling cutter type hard
for female thread milling

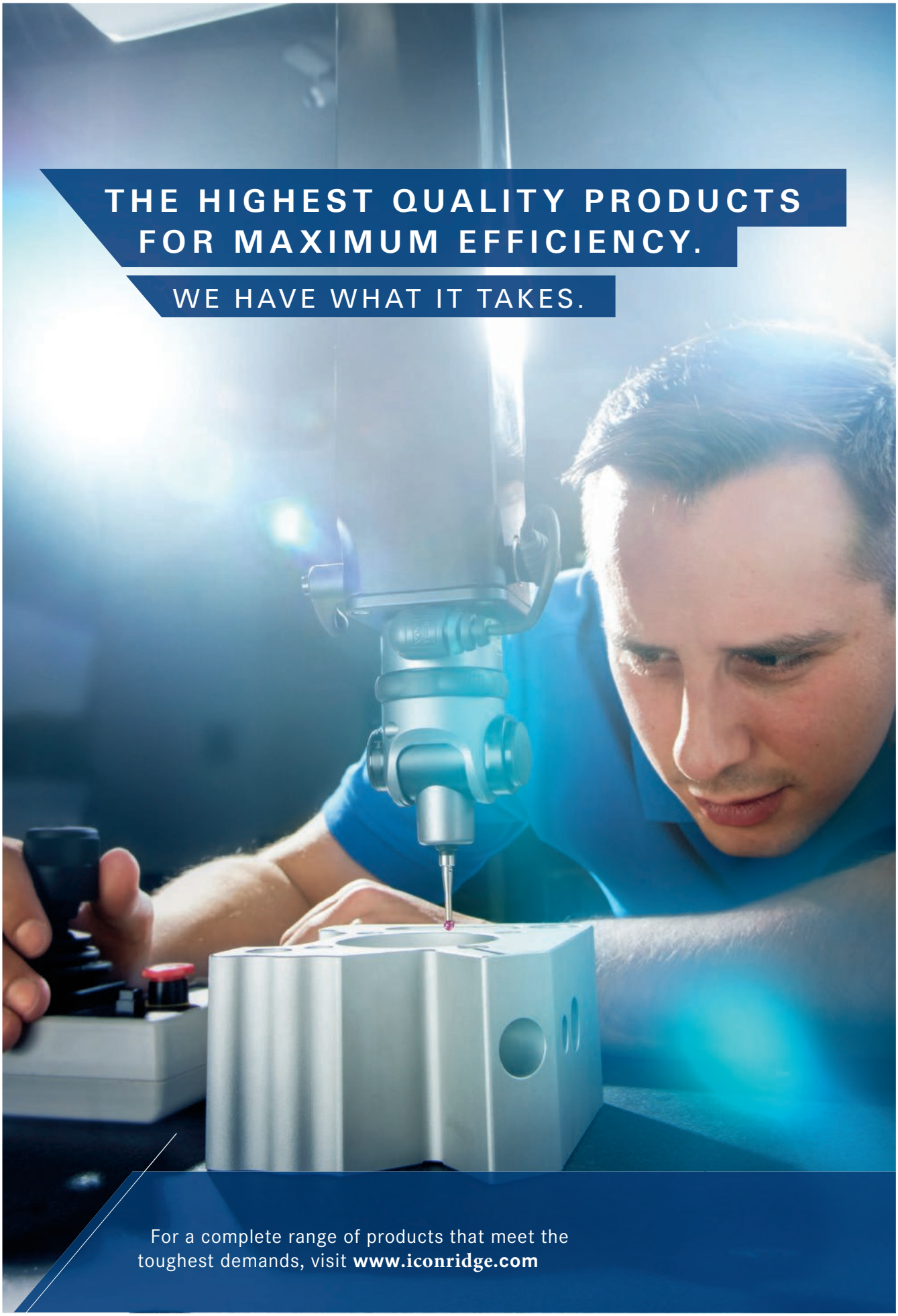


		P	M	N	K	S	H 65HRC	
13496970-981	Solid carbide TiAlN 2xD thread milling cutter. For hard machining up to 63 HRC in female threads.						●	
13496990-998	Solid carbide TiAlN 3xD thread milling cutter (M, MF) For hard machining up to 63 HRC in female threads						●	

multi-range thread milling cutter with countersink
for female thread milling



		P	M	N	K	S	H 65HRC	
13496003-016	Multi-range thread milling cutter with 45° chamfer, solid carbide For universal use up to 1500 N/mm2, in female thread 1.5xD	●	●	●	●	●		
13496031-162	Multi-range thread milling cutter with 45° chamfer, solid carbide For universal use up to 1500 N/mm2, in female thread 2.0xD	●	●	●	●	●		
13496230-360	Multi-range thread milling cutter with 45° chamfer, solid carbide For universal use up to 1500 N/mm2, in female thread 2.5xD	●	●	●	●	●		



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

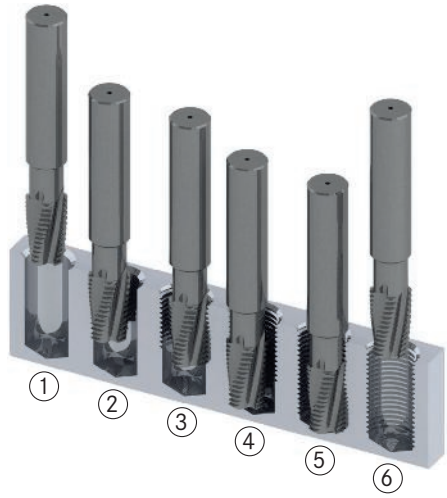
ATORN solid carbide multi-range thread milling cutter for female threads

Application: For variable and exact thread milling of female threads with constant pitch.
Due to the collar recess between the threaded portion and shank, a depth offset is possible in order to produce a deeper thread.

Advantages:
- Reduced tool costs owing to high variability in thread diameter and one tool for right-hand and left-hand threads
- Considerable thread depths achievable
- Very high wear resistance and cutting speeds owing to micro-fine grain structure

Note: Ensure tool is clamped firmly!

Process steps for thread milling cutter with collar recess:
① Tool moves to initial position, centred above drill hole
③ Start of thread milling with descending loop
③ Milling of tread with subsequent ascending loop
④ Start of second thread milling program with descending loop
⑤ Milling of thread with subsequent ascending loop
⑥ Movement to initial position and end of machining procedure



ATORN® Multi-range thread milling cutter SC TIAIN M/MF (60°) IC axial

for universal use up to 1500 N/mm2 in female threads

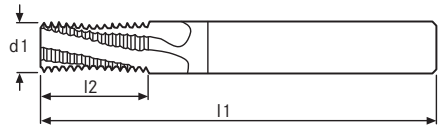
VHM | TiAlN | ≤2xd | ≤1,5xd | IK | HA



Application:
For producing **metric** right-hand and left-hand threads on CNC machines in through holes and blind holes in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Precision-ground thread milling cutter

Advantage:
- Innovative cutting geometry for very high dimensional accuracy, process reliability and chip removal.

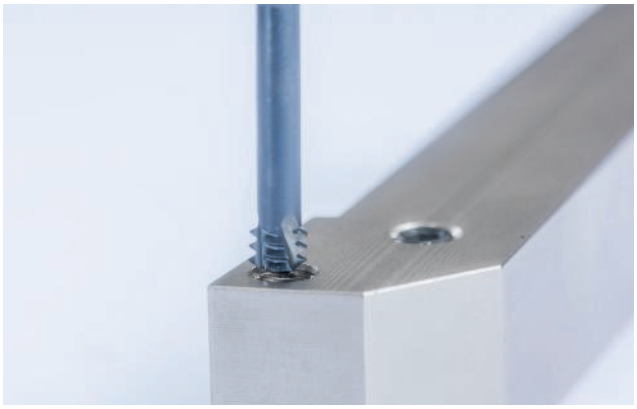


Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13496560-612	120	110	90	100	80	220	240	200	200	180	180	220	150	90	50	40	40		

d1 (mm)	Pitch (mm)	Suitable for metric fine threads from	Suitable for metric threads from	L1 (mm)	l2 (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
3.8	0.5	MF5	-	58	10.3	6	3	0.03	560	●
3.1	0.7	MF4	M4	58	7.4	6	3	0.03	562	●
4.5	0.75	MF6	-	58	10.1	6	3	0.03	564	●
3.8	0.8	MF6	M5	58	9.2	6	3	0.03	566	●
4.6	1	MF7	M6	58	10.5	6	3	0.03	568	●
4.6	1	MF7	M6	58	14.5	6	3	0.03	570	●
6	1	MF9	-	58	12.5	6	3	0.04	572	●
8	1	MF10	-	64	16.5	8	4	0.06	574	●
10	1	MF12	-	73	24.5	10	4	0.07	576	●
6	1.25	MF10	M8	58	14.4	6	3	0.04	578	●
6	1.25	MF10	M8	58	19.4	6	6	0.04	580	●
7.8	1.5	MF12	M10	64	17	8	3	0.06	582	●
7.8	1.5	MF12	M10	76	24.8	8	3	0.06	584	●
10	1.5	MF14	-	73	21.8	10	4	0.07	586	●
12	1.5	MF16	-	84	26.3	12	4	0.08	588	●
16	1.5	MF20	-	105	33.8	16	6	0.08	590	○
9	1.75	MF12	M12	73	20.1	10	3	0.06	592	●
9	1.75	MF12	M12	73	28.8	10	3	0.06	594	●
10	2	MF15	M14	73	27	10	3	0.06	596	●
11.8	2	MF17	M16	84	27	12	4	0.07	598	●
11.8	2	MF17	M16	105	39	12	4	0.07	600	●
20	2	MF26	-	105	41	20	6	0.08	602	○
15	2.5	MF22	M20	105	33.8	16	5	0.07	604	○
15	2.5	MF22	M20	105	48.8	16	5	0.07	606	●
18	3	MF25	M24	105	40.5	20	4	0.08	608	●
18	3	MF25	M24	120	58.5	20	4	0.08	610	○
20	3	MF27	M27	105	43.5	20	4	0.08	612	○

Prod. Gr. 132

ATORN solid carbide thread milling cutter





application:
for smaller boreholes with straight shank from M1x0.25 to 3xD.

advantages:
- extremely low cutting pressure produces excellent surface quality
- universal applications
- multilayer coating for very long service life
- thread milling up to blind holes
- one tool for right-hand and left-hand threads

process steps:
① tool moves to start position centred on hole
② 90° arc in
③ thread milling
④ 90° arc out
⑤ final position

ATORN® Solid carbide TiAlN 2xD thread milling cutter (M, MF)

For universal use up to 1500 N/mm2 in female threads

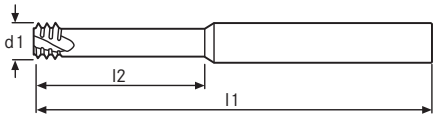
VHM | TiAlN | ≤2xd | HA



Application:
For producing metric right-hand and left-hand threads on CNC machines in through holes and blind holes in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Thread milling cutters with short thread section

Advantage:
- Innovative cutting geometry and high-quality cemented carbide ensure very high degree of dimensional accuracy, process reliability and chip removal
- Tapping of very small threads from M1 x 0.2 possible



d1 (mm)	Pitch (mm)	Suitable for metric threads from	l1 (mm)	l2 (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
0.72	0.25	M1	39	2.5	3	3	0.01	902	●
1.55	0.4	M2	58	4.5	6	3	0.03	904	●
1.65	0.45	M2.2	58	5	6	3	0.03	906	○
1.95	0.45	M2.5	58	5.5	6	3	0.03	908	●
2.35	0.5	M3	58	6.5	6	3	0.03	910	●
2.75	0.6	M3.5	58	7.5	6	3	0.05	912	●
3.1	0.7	M4	58	9	6	3	0.05	914	●
3.8	0.8	M5	58	12.5	6	3	0.07	916	●
4.65	1	M6	58	14	6	3	0.07	918	●
5.95	1.25	M8	58	18	6	3	0.09	920	●
7.8	1.5	M10	64	23	8	3	0.12	922	●
9	1.75	M12	73	26	10	3	0.14	924	●
11.8	2	M16	84	35	12	4	0.16	926	●
15	2.5	M20	105	43	16	5	0.18	928	●

Prod. Gr. 132

ATORN® Thread milling cutter SC TiAlN 3xD (M, MF)

for universal use up to 1500 N/mm2 in female threads

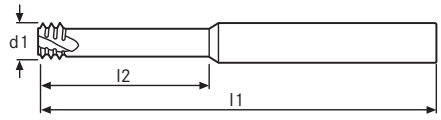
VHM | TiAlN | ≤3xd | HA



Application:
For producing metric right-hand and left-hand threads on CNC machines in through holes and blind holes in the steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Thread milling cutters with short thread section

Advantage:
- Innovative cutting geometry for very high dimensional accuracy, process reliability and chip removal.
- Tapping of very small threads from M1.4 x 0.3 possible.



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13496930-958	90	70	60	70	60	140	140	135	135	120	120	135	120	50	30	25	25		

d1 (mm)	Pitch (mm)	Suitable for metric threads from	l1 (mm)	l2 (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
15	0.3	M1.4	39	4	3	3	0.01	930	○
1.2	0.35	M1.6	39	4.8	3	3	0.01	932	●
1.53	0.4	M2	39	6	3	3	0.03	934	●
1.95	0.45	M2.5	58	7.5	6	3	0.03	936	●
2.37	0.5	M3	58	9.5	6	3	0.04	938	●
2.37	0.5	M3	105	9.5	6	3	0.04	940	●
2.75	0.6	M3.5	58	10.5	6	3	0.05	944	●
3.1	0.7	M4	58	12.5	6	3	0.05	946	●
3.1	0.7	M4	105	12.5	6	3	0.05	948	●
3.8	0.8	M5	58	16	6	3	0.05	950	●
3.8	0.8	M5	105	16	6	3	0.05	952	●
4.65	1	M6	58	20	6	3	0.06	954	●
4.65	1	M6	105	20	6	3	0.06	956	●
6	1.25	M8	58	24	6	3	0.07	958	●

Prod. Gr. 132

ATORN® Thread milling cutter SC TIAlN 2xD (M, MF)

For hard machining up to 63 HRC in female threads

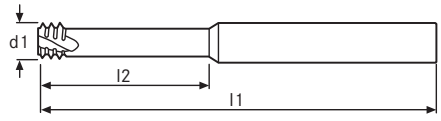
VHM | TiAlN | ≤2xd | HA



Application:
For producing metric right-hand and left-hand threads on CNC machines in through holes and blind holes in the hardened steel material group up to a strength of 63HRC.

Execution:
- Thread milling cutters with short thread section

Advantage:
- Innovative cutting geometry and coating technology ensure very high dimensional accuracy, process reliability and chip removal.
- Tapping of very small threads from M2 x 0.4 possible.



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13496970-981																		50	40

d1 (mm)	Pitch (mm)	Suitable for metric threads from	l1 (mm)	l2 (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
1.53	0.4	M2	58	4.5	6	3	0.01	970	●
1.65	0.45	M2.2	58	5	6	3	0.01	971	○
1.95	0.45	M2.5	58	5.5	6	3	0.01	972	●
2.37	0.5	M3	58	6.5	6	3	0.01	973	●
2.75	0.6	M3.5	58	7.5	6	3	0.02	974	○
3.1	0.7	M4	58	9	6	3	0.02	975	●
3.8	0.8	M5	58	12.5	6	3	0.02	976	●
4.65	1	M6	58	14	6	3	0.02	977	●
6	1.25	M8	58	18	6	3	0.03	978	●
7.8	1.5	M10	64	23	8	3	0.03	979	●
9	1.75	M12	73	26	10	3	0.03	980	●
11.8	2	M16	84	35	12	4	0.04	981	●

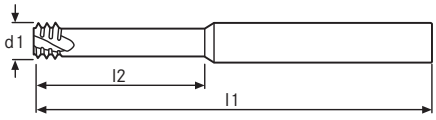
Prod. Gr. 132

ATORN® Solid carbide TiAlN 3xD thread milling cutter (M, MF)

For hard machining up to 63 HRC in female threads

VHM | TiAlN | ≤3xd | HA





Application:
For producing metric right-hand and left-hand threads on CNC machines in through holes and blind holes in the hardened steel material group up to a strength of 63HRC.

Execution:
- Thread milling cutters with short thread section

Advantage:
- Innovative cutting geometry and coating technology ensure very high degree of dimensional accuracy, process reliability and chip removal
- Thread milling cutting of very small threads from M1.4 x 0.3 possible

Notes:
The tool must be used in an anti-clockwise direction!

d1 (mm)	Pitch (mm)	Suitable for metric threads from	l1 (mm)	l2 (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
1.05	0.3	M1.4	39	4	3	3	0.01	990	○
1.2	0.35	M1.6	39	4.8	3	3	0.01	991	○
1.53	0.4	M2	39	6	3	3	0.02	992	●
1.95	0.45	M2.5	58	7.5	6	3	0.02	993	○
2.37	0.5	M3	58	9.5	6	3	0.02	994	●
3.1	0.7	M4	58	12.5	6	3	0.03	995	●
3.8	0.8	M5	58	16	6	3	0.03	996	●
4.65	1	M6	58	20	6	3	0.04	997	●
6	1.25	M8	58	24	6	3	0.04	998	●

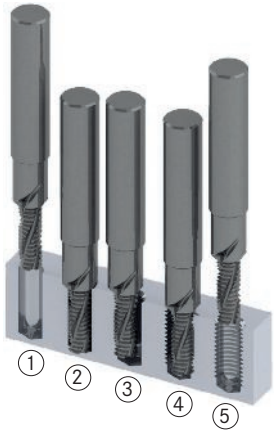
Prod. Gr. 132

ATORN solid carbide thread milling cutter for female threads with 45° countersink

Application: For thread milling and countersinking in one step.

Advantages:: low power requirement and short processing time thanks to high cutting speeds and 2 processes (countersinking and thread cutting) using one tool, very good surface quality, precise thread depth possible down to near the base, 1 tool for right-handed and left-handed threads, for blind holes and through holes.

Process steps for thread milling cutter with countersinking step:
① Tool moves to start position centred on hole
② 90° bevel countersink
③ Begins thread milling with descending loop
④ Thread milling with subsequent ascending loop
⑤ Moves to start position and ends machining



ATORN® Solid carbide multi-range thread milling cutter with 45° countersink

For universal use up to 1500 N/mm² in female threads 1.5xD

VHM | TiAlN | ≤3xd | IK | HA

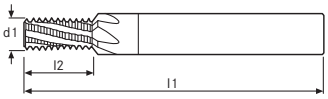
Application:
For producing metric right-hand threads and left-hand threads with countersink on CNC machines in blind holes and through holes, in steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1500 N/mm² in single-part production and series production.

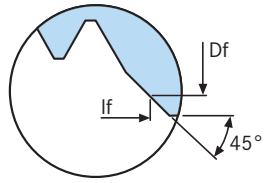
Execution:
- Precision-ground thread milling cutter with chamfer for maximum requirements in terms of process reliability and service life

Advantage:
- Innovative cutting geometry and coating technology ensure very high degree of dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge treatment for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread
- Significantly optimised process times, as bore and countersink are produced in one step

Technical data:
- Suitable for thread type: M | M-L







Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13496003-016	120	90	70	50	40	250	250	220	220	200	200	180	160	100	40	30	30		

Nominal Ø (mm)	Pitch (mm)	l1 (mm)	l2 (mm)	lf (mm)	Df (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
3	0.5	48	5.25	5.7	3.4	6	3	0.02	003	○
4	0.7	48	7.35	7.9	4.5	6	3	0.03	004	○
5	0.8	54	9.15	9.9	5.5	6	3	0.03	005	○
6	1	62	10.45	11.3	6.6	8	3	0.04	006	○
8	1.25	74	13.1	14.1	9	10	3	0.05	008	○
10	1.5	80	17.2	18.4	11	12	4	0.06	010	○
12	1.75	90	20.05	21.5	13.5	14	4	0.07	012	○
16	2	102	26.95	28.6	17.5	18	4	0.1	016	●

Prod. Gr. 132

ATORN® Solid carbide multi-range thread milling cutter with 45° countersink

For universal use up to 1500 N/mm² in female threads 2.0xD

VHM | TiAlN | ≤2xd | IK | HA

Application:
For producing metric right-hand threads and left-hand threads with countersink on CNC machines in blind holes and through holes, in steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1500 N/mm² in single-part production and series production.

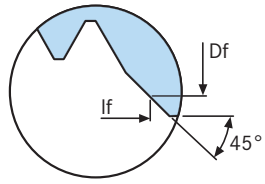
Execution:
- Precision-ground thread milling cutter with chamfer for maximum requirements in terms of process reliability and service life

Advantage:
- Innovative cutting geometry and coating technology ensure very high degree of dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge treatment for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread
- Significantly optimised process times, as bore and countersink are produced in one step

Technical data:
- Suitable for thread type: M | M-L







Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
1349603 1-162	120	90	70	50	40	250	250	220	220	200	200	180	160	100	40	30	30		

Nominal Ø (mm)	Pitch (mm)	l1 (mm)	l2 (mm)	lf (mm)	Df (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
3	0.5	48	6.73	7.2	3.2	6	3	0.02	031	●
4	0.7	48	8.73	9.3	4.5	6	3	0.03	041	●
5	0.8	54	10.77	11.5	5.5	6	3	0.03	051	○
6	1	62	13.47	14.3	6.6	8	3	0.04	066	●
8	1.25	74	18.08	19.1	9	10	3	0.05	082	●
10	1.5	80	21.7	22.9	11	12	4	0.06	110	●
12	1.75	90	25.32	26.7	13.5	14	4	0.07	112	○
16	2	102	34.93	36.6	17.5	18	4	0.1	162	○

Prod. Gr. 132

ATORN® Solid carbide multi-range thread milling cutter with 45° countersink

For universal use up to 1500 N/mm² in female threads 2.5xD

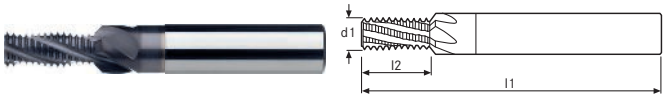
VHM | TiAlN | ≤2,5xd | IK | HA

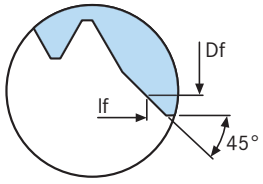
Application:
For producing metric right-hand threads and left-hand threads with countersink on CNC machines in blind holes and through holes, in steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1500 N/mm² in single-part production and series production.

Execution:
- Precision-ground thread milling cutter with chamfer for maximum requirements in terms of process reliability and service life

Advantage:
- Innovative cutting geometry and coating technology ensure very high degree of dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge treatment for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread
- Significantly optimised process times, as bore and countersink are produced in one step

Technical data:
- Suitable for thread type: M | M-L



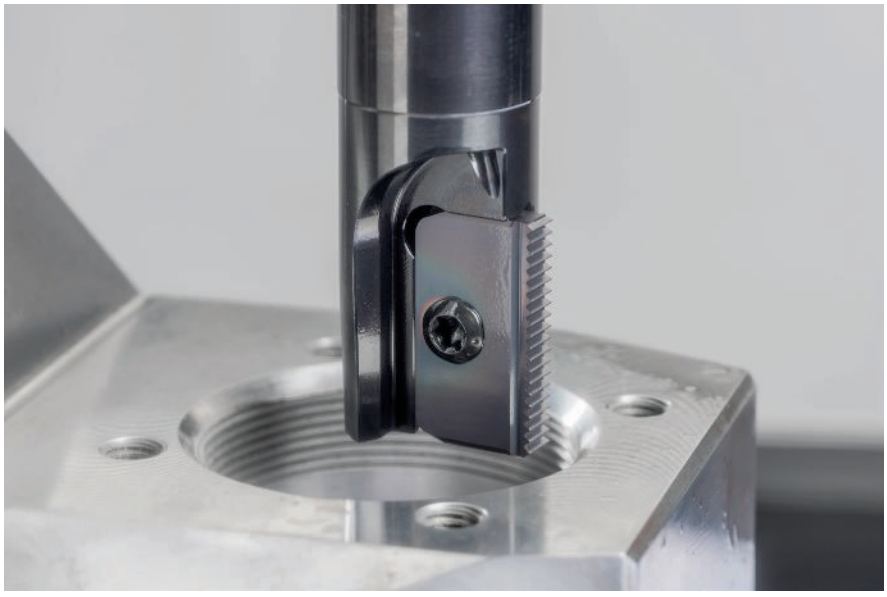


Nominal Ø (mm)	Pitch (mm)	l1 (mm)	l2 (mm)	lf (mm)	Df (mm)	Shaft Ø (mm)	Number of cutting edges (PCS)	fz steel 1000 ● (mm)	13496... Ident. No.	
4	0.7	48	10.85	11.4	4.5	6	3	0.03	240	●
5	0.8	54	13.15	13.9	5.5	6	3	0.03	250	●
6	1	62	16.45	17.3	6.6	8	3	0.04	260	●
8	1.25	74	21.85	22.8	9	10	3	0.05	280	●
10	1.5	80	26.2	27.4	11	12	4	0.06	300	●
12	1.75	90	32.3	33.7	13.5	14	4	0.07	320	●
16	2	102	42.95	44.6	17.5	18	4	0.1	360	○

Prod. Gr. 132

thread milling system with indexable insert
for universal use

- Multi-cutter attachments ensure high production rates and long service life
- Innovative coating technology and cemented carbide mixtures for high service life and wide-ranging machining applications up to a hardness of 62 HRC
- Very high surface quality of thread
- Deep threads can be reliably produced



- innovative coating technology and cemented carbide mixtures for high service life and wide-ranging machining applications up to a hardness of 62 HRC
- very high surface quality of thread
- deep threads can be reliably produced





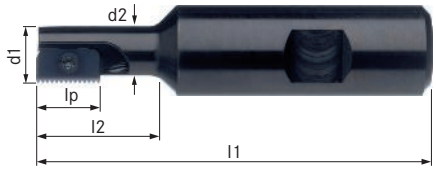
ATORN® Steel holder for single-edge thread milling cutter
For using thread milling cutter plates

HB IK

Application:
For using ground thread milling cutter inserts no. 13397.

Execution:
- Burnished steel tool holder with one insert seat

Advantage:
- High process reliability and dimensional accuracy due to precise insert seating
- High-quality carrier material for very high service life requirements



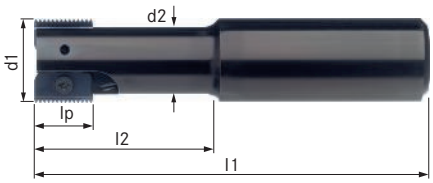
Suitable for indexable insert size	Cutting edge length (mm)	d1 (mm)	Suitable for min. Ø (mm)	Shaft Ø (mm)	l1 (mm)	l2 (mm)	13397... Ident. No.	
12	12	9.5	12.2	20	85	14	005	●
12	12	9.9	12.8	20	85	16	012	○
14	14	12	15.5	20	75	20	015	●
14	14	14.5	18.7	20	85	25	022	●
14	14	17	21.9	20	85	30	025	●
21	21	18	23.2	20	85	30	032	●
21	21	21	27.1	20	94	40	035	●
21	21	25	32.3	20	125	-	042	●
30	30	29	37.4	25	110	50	045	●
30	30	31	40	25	150	-	052	●
30	30	38	49	32	150	-	055	○
40	40	48	61.9	40	153	78	060	○

Prod. Gr. 132

ATORN® Steel holder for double-edge thread milling cutter

For using thread milling cutter plates

HB IK



Application:
For using ground thread milling cutter inserts no. 13397.

Execution:
- Burnished steel tool holder with two insert seats

Advantage:
- High process reliability and dimensional accuracy due to precise insert seating
- High-quality carrier material for very high service life requirements
- High machining speed due to two-tip geometry

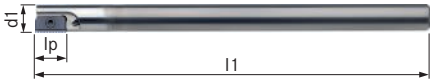
Suitable for indexable insert size		14	21	30	40
Cutting edge length (mm)		14	21	30	40
d1 (mm)		20	30	40	50
Suitable for min. Ø (mm)		26	39	52	65
Shaft Ø (mm)		20	25	32	40
l1 (mm)		93	108	130	153
l2 (mm)		41	52	70	78
13397...	Ident. No.	090	095	100	105
		○	○	○	○

Prod. Gr. 132

ATORN® Solid carbide holder for single-edge thread milling cutter

For using thread milling cutter plates

HA IK



Application:
For using ground thread milling cutter inserts no. 13397.

Execution:
- Solid carbide steel tool holder with one insert seat

Advantage:
- High process reliability and dimensional accuracy due to precise insert seating
- High quality solid carbide carrier material for very high requirements in terms of service life and low vibration

Suitable for indexable insert size	Cutting edge length (mm)	d1 (mm)	Suitable for min. Ø (mm)	Shaft Ø (mm)	l1 (mm)	13397... Ident. No.	
12	12	9.9	12.8	8	125	065	○
14	14	13.2	17.0	10	150	070	○
14	14	15.2	19.7	12	175	075	○
21	21	21	27.1	16	200	080	○
30	30	27	35	20	270	085	○

Prod. Gr. 132

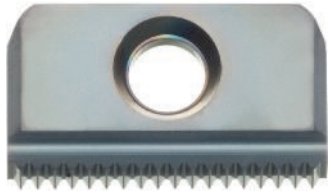
ATORN® Indexable inserts for thread milling cutter

for universal use up to 1300 N/mm²

Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloys material groups up to a strength of 1500 N/mm² in single-part production and series production.

Execution:
- **Ident. No. 200–268:** Indexable insert, solid profile 60° female, both sides precision-ground (indexable insert size 12 = one side only)
- **Ident. No. 310–368:** Indexable insert, solid profile, 60° male
- **Ident. No. 406–456:** Indexable insert, solid profile 55° male and female, both sides precision-ground (indexable insert size 12 = one side only)

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge treatment for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397200-268	140	130	100	120	100	240	240	220	220	200	200	220		90	60	50	50		
13397310-368	140	130	100	120	100	240	240	220	220	200	200	220		90	60	50	50		
13397406-456	140	130	100	120	100	240	240	220	220	200	200	220		90	60	50	50		

Machining type			Inside		Outside		Inside | Outside	
Thread type			Solid profile 60°		Solid profile 60°		Solid profile 55°	
Size of indexable insert	Pitch (mm)	Number of thread starts per inch	13397... Ident. No.		13397... Ident. No.		13397... Ident. No.	
12	0.5	-	200	○	-	-	-	-
12	0.75	-	202	●	-	-	-	-
12	1	-	204	●	-	-	-	-
12	1.25	-	206	●	-	-	-	-
14	0.5	-	208	●	-	-	-	-
14	0.75	-	210	●	310	○	-	-
14	1	-	212	●	312	○	-	-
14	1.25	-	214	●	314	○	-	-

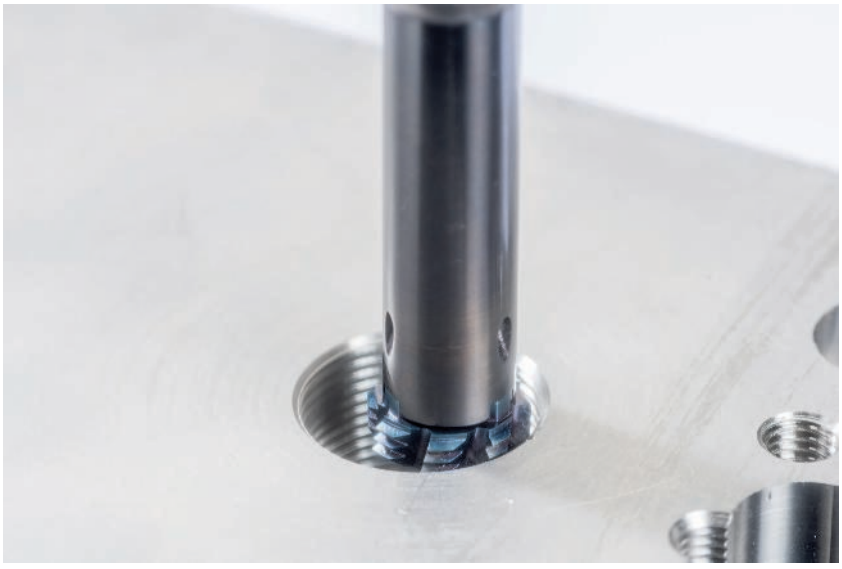
Machining type			Inside		Outside		Inside | Outside	
Thread type			Solid profile 60°		Solid profile 60°		Solid profile 55°	
Size of indexable insert	Pitch (mm)	Number of thread starts per inch	13397... Ident. No.		13397... Ident. No.		13397... Ident. No.	
14	1.5	-	216	●	316	○	-	-
14	1.75	-	218	●	318	○	-	-
14	2	-	220	●	320	○	-	-
14	2.5	-	222	●	322	○	-	-
21	1	-	224	●	324	○	-	-
21	1.5	-	226	●	326	○	-	-
21	1.75	-	228	○	-	-	-	-
21	2	-	230	●	330	○	-	-

Size of indexable insert	Pitch (mm)	Number of thread starts per inch	Machining type: Inside, Thread type: Solid profile 60°, 13397... Ident. No.		Outside, Solid profile 60°, 13397... Ident. No.		Inside | Outside, Solid profile 55°, 13397... Ident. No.	
21	2.5	-	232	○	332	○	-	-
21	3	-	234	●	334	○	-	-
21	3.5	-	236	●	-	-	-	-
30	1.5	-	238	●	338	○	-	-
30	2	-	240	●	340	○	-	-
30	3	-	242	○	342	○	-	-
30	3.5	-	244	○	344	○	-	-
30	4	-	246	●	346	○	-	-
30	4.5	-	248	●	-	-	-	-
30	5	-	250	●	-	-	-	-
40	1.5	-	252	○	352	○	-	-
40	2	-	254	○	354	○	-	-
40	3.5	-	258	○	-	-	-	-
40	4	-	260	○	360	○	-	-
40	4.5	-	262	○	-	-	-	-
40	5	-	264	○	364	○	-	-
40	5.5	-	266	○	-	-	-	-
40	6	-	268	○	368	○	-	-

Size of indexable insert	Pitch (mm)	Number of thread starts per inch	Machining type: Inside, Thread type: Solid profile 60°, 13397... Ident. No.		Outside, Solid profile 60°, 13397... Ident. No.		Inside | Outside, Solid profile 55°, 13397... Ident. No.	
40	3	-	-	-	356	○	-	-
12	-	19	-	-	-	-	406	○
14	-	24	-	-	-	-	412	○
14	-	20	-	-	-	-	414	○
14	-	19	-	-	-	-	416	○
14	-	16	-	-	-	-	418	○
14	-	14	-	-	-	-	420	○
21	-	20	-	-	-	-	424	○
21	-	19	-	-	-	-	426	○
21	-	16	-	-	-	-	428	○
21	-	14	-	-	-	-	430	○
21	-	11	-	-	-	-	432	○
30	-	16	-	-	-	-	438	○
30	-	14	-	-	-	-	440	○
30	-	11	-	-	-	-	442	○
40	-	11	-	-	-	-	454	○
40	-	8	-	-	-	-	456	○

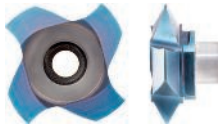
Prod. Gr. 132

Thread milling system with front insert
For universal use









- multi-cutter attachments ensure high production rates and long service life
- innovative coating technology and cemented carbide mixtures for high service life and wide-ranging machining applications up to a hardness of 62 HRC
- very high surface quality of thread
- deep threads can be reliably produced

ATORN® Steel holder for thread milling cutter
For front-face cutting attachment

HB IK

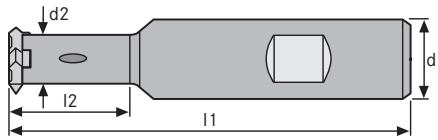
Application:
For using ground thread milling cutter inserts no. 13397.

Execution:
- Burnished steel tool holder

Advantage:
- High process reliability and dimensional accuracy due to precise insert seating
- High-quality carrier material for very high service life requirements

Technical data:
- Tool holding device: HB parallel shank





Suitable for indexable inserts type	Holder type	l2 (mm)	l1 (mm)	d2 (mm)	d (mm)	Suitable for screw	13397... Ident. No.	
A10	A1	19	70	7.3	12	S5	500	●
A10	A2	19	90	7.3	16	S5	502	●
A12	A3	25	70	9	12	S10	504	●
A12	A4	25	90	9	16	S10	506	●
A12	A5	35	100	9	16	S10	508	●
A18	A6	48	100	13.8	16	S16	510	●
A18	A7	32	100	13.8	20	S16	512	●
A18	A8	48	110	13.8	20	S16	514	●
A18	A9	74	140	13.8	20	S16	516	●
A25	A10	45	115	17.5	25	S27	518	●
A25	A11	80	150	17.5	25	S27	520	●

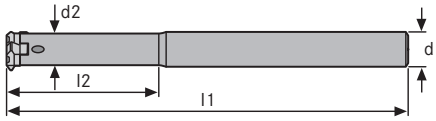
Prod. Gr. 1FD

ATORN® Solid carbide holder for thread milling cutter

For front-face cutting attachment

HA IK





Application:
For using ground thread milling cutter inserts no. 13397.

Execution:
- Solid carbide steel tool holder with one insert seat

Advantage:
- High process reliability and dimensional accuracy due to precise insert seating
- High quality solid carbide carrier material for very high requirements in terms of service life and low vibration

Technical data:
- Tool holding device: HA parallel shank

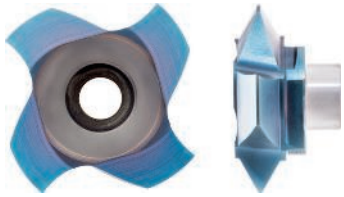
Suitable for indexable inserts type	Holder type	l2 (mm)	l1 (mm)	d2 (mm)	d (mm)	Suitable for screw	13397... Ident. No.	
A10	A12	35	125	7.3	8	S5	522	●
A10	A13	-	125	8	8	S5	524	●
A12	A14	-	150	10	10	S10	526	●
A18	A15	-	170	12	12	S16	528	●
A25	A16	-	205	16	16	S27	530	●
A25	A17	85	250	17.5	20	S27	532	●

Prod. Gr. 1FD

ATORN® Cutting insert, multi-flute cutter, 60° partial profile

For universal use up to 1500 N/mm² in male and female threads





Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Multiple-edge cutter in sub-profile design

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread

						Machining type	Outside | Inside	
Indexable insert type	Suitable for holder	Min./ max. pitch internal	Min./max. number of thread starts per inch internal	Suitable for metric threads from	Number of cutting edges (PCS)	fz steel 1300 ● (mm)	13397... Ident. No.	
A18	A6 | A7 | A8 | A9 | A15	1.5-2.5 mm	16-10	M23	6	0.16	650	●
A18	A16	3.0-5.0 mm	28-13	M25	4	0.16	652	●

Prod. Gr. 1FE

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397650-652	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

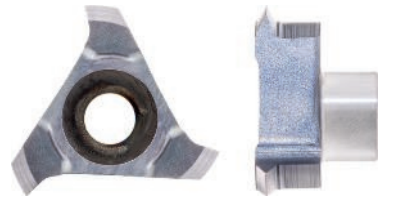
ATORN® Cutting insert, triple cutter, 60° partial profile

For universal use up to 1500 N/mm² in male and female threads

Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Three-flute cutter in sub-profile design (indexable inserts type A25 in four-flute cutter design)

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397550-568	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

Indexable insert type	Suitable for holder	Min./max. pitch internal	Min./ max. pitch external	Min./max. number of thread starts per inch internal	Min./max. number of thread starts per inch external	Cutting edge Ø (mm)	Suitable for metric threads from	Suitable for metric fine threads from	fz steel 1300 ● (mm)	13397... Ident. No.	
A10	A1 | A2 | A12 | A13	0.5-0.8 mm	0.4-0.8 mm	56-28	64-32	10	M11	MF12	0.10	550	●
A10	A1 | A2 | A12	1-2 mm	0.8-1.75 mm	28-13	32-15	10	M12	MF14	0.10	552	●
A12	A3 | A4 | A5 | A14	0.5-0.8 mm	0.4-0.8 mm	56-28	64-32	12	M13	MF14	0.12	554	●
A12	A3 | A4 | A5 | A14	1-2 mm	0.8-1.75 mm	28-13	32-15	12	M14	MF16	0.12	556	●
A18	A6 | A7 | A8 | A9 | A15	0.5-0.8 mm	0.4-0.8 mm	56-28	64-32	18	M19	MF19	0.16	558	●
A18	A6 | A7 | A8 | A9 | A15	1-1.75 mm	0.8-1.5 mm	28-14	32-16	18	M20	MF21	0.16	560	●
A18	A6 | A7 | A8 | A9 | A15	2-3 mm	1.75-2.5 mm	13-8	15-10	18	M21	MF23	0.16	562	●
A25	A10 | A11 | A16 | A17	1.5-2.5 mm	1-2 mm	16-10	28-13	25	M28	MF30	0.18	564	●
A25	A10 | A11 | A16 | A17	3-5 mm	2.5-4.5 mm	8-5	10-6	25	M30	MF34	0.18	566	●
A25	A10 | A11 | A16 | A17	5-6 mm	4.5-5 mm	5-4	6-5	25	M34	MF35	0.18	568	●

Prod. Gr. 1FE

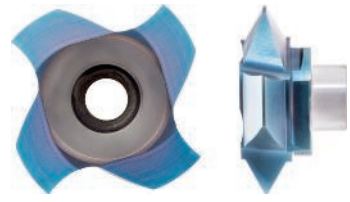
ATORN® Cutting insert, multi-flute cutter, 55° partial profile

For universal use up to 1500 N/mm² in male and female threads

Application:
For producing imperial right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Multiple-edge cutter in sub-profile design

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread



Indexable insert type	Suitable for holder	Max. number of thread starts per inch	Suitable for min. Ø (mm)	Number of cutting edges (PCS)	fz steel 1300 ● (mm)	13397... Ident. No.	
A18	A6 | A7 | A8 | A9 | A16	14	23	6	0.16	654	●
A18	A16	8	24	4	0.16	656	●

Prod. Gr. 1FE

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397654-656	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

ATORN® Cutting insert, triple cutter, 55° partial profile

For universal use up to 1500 N/mm² in male and female threads

Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Three-flute cutter in sub-profile design (indexable inserts type A25 in four-flute cutter design)

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Low tool costs thanks to high variability in the thread diameter, just one tool required for right-hand thread and left-hand thread



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397570-578	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

Indexable insert type	Suitable for holder	Min./max. number of thread starts per inch	Cutting edge Ø (mm)	Suitable for min. Ø (mm)	fz steel 1300 ● (mm)	13397... Ident. No.	
A10	A1 | A2 | A12	19-14	10	13	0.10	570	●
A12	A3 | A4 | A5 | A14	28-19	12	14	0.12	572	●
A12	A3 | A4 | A5	14-11	12.2	16	0.12	574	●
A18	A6 | A7 | A8 | A9 | A15	14-8	18	23	0.16	576	●
A25	A10 | A11 | A16 | A17	7-5	25	31	0.18	578	●

Prod. Gr. 1FE

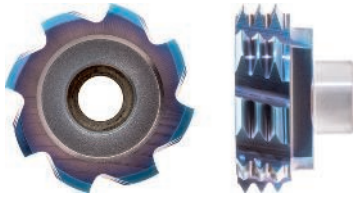
ATORN® Cutting insert, multi-flute cutter, 60° full profile

for universal use up to 1500 N/mm²

Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Multiple-edge cutter in full-profile design

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Precise thread milling of profiles



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397658-674	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

Indexable insert type	Suitable for holder	Pitch (mm)	Suitable for metric threads from	Suitable for metric fine threads from	Number of cutting edges (PCS)	Number of teeth (PCS)	Cutting edge Ø (mm)	fz steel 1300 ● (mm)	13397... Ident. No.	
A18	A6 | A7 | A8 | A9 | A15	1	-	MF18	8	5	16.3	0.14	658	●
A18	A6 | A7 | A8 | A9 | A15	1.5	-	MF20	8	3	17.5	0.16	660	●
A18	A6 | A7 | A8 | A9 | A15	2	-	MF22	6	2	18.6	0.16	662	●
A18	A6 | A7 | A8 | A9 | A15	2.5	M22	MF22	6	2	17.8	0.16	664	●
A18	A6 | A7 | A8 | A9 | A15	3	M24 | M27	MF24	6	1	18.9	0.16	666	●
A18	A6 | A7 | A8 | A9 | A15	3.5	M30 | M33	MF26	6	1	20	0.20	668	●
A18	A6 | A7 | A8 | A9 | A15	4	M36 | M39	MF27	6	1	20	0.20	670	●
A18	A6 | A7 | A8 | A9 | A15	4.5	M42 | M45	MF28	5	1	20	0.20	672	●
A18	A15	5	M48 | M52	MF29	4	1	20	0.20	674	●

Prod. Gr. 1FE

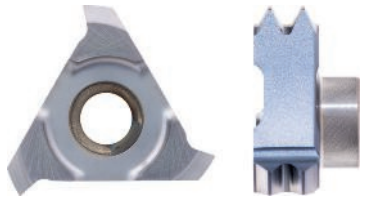
ATORN® Cutting insert, triple cutter, 60° full profile

for universal use up to 1500 N/mm²

Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Three-flute cutter in full profile design (indexable inserts type A25 in four-flute cutter design)

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Precise thread milling of profiles



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397580-630	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

Indexable insert type	Suitable for holder	Pitch (mm)	Suitable for metric threads from	Suitable for metric fine threads from	Number of teeth (PCS)	Cutting edge Ø (mm)	fz steel 1300 ● (mm)	13397... Ident. No.	
A10	A1 | A2 | A12 | A13	0.5	-	MF10	6	9	0.10	580	●
A10	A1 | A2 | A12 | A13	1.0	-	MF12	3	10	0.10	582	●
A10	A1 | A2 | A12 | A13	1.5	-	MF13	2	10	0.10	584	●
A10	A1 | A2 | A12 | A13	1.75	M12	MF13	1	9.6	0.10	586	●
A10	A1 | A2 | A12	2.0	M14	MF14	1	10	0.10	588	●
A12	A3 | A4 | A5 | A14	0.5	-	MF13	6	12	0.12	590	●
A12	A3 | A4 | A5 | A14	0.75	-	MF13	4	12	0.12	592	●
A12	A3 | A4 | A5 | A14	1.0	-	MF14	3	12	0.12	594	●
A12	A3 | A4 | A5 | A14	1.5	-	MF15	2	12	0.12	596	●
A12	A3 | A4 | A5 | A14	2.0	M16	MF16	1	12.4	0.12	598	●
A12	A3 | A4 | A5	2.5	M18 | M20	MF17	1	12	0.12	600	●
A12	A3 | A4 | A5	3.0	-	MF17	1	12.4	0.16	602	●
A18	A6 | A7 | A8 | A9 | A15	0.5	-	MF19	9	17.8	0.16	604	●
A18	A6 | A7 | A8 | A9 | A15	0.75	-	MF19	6	17.8	0.16	606	●
A18	A6 | A7 | A8 | A9 | A15	1.0	-	MF20	5	17.8	0.16	608	●
A18	A6 | A7 | A8 | A9 | A15	1.5	-	MF20	3	17.8	0.16	610	●
A18	A6 | A7 | A8 | A9 | A15	2.0	-	MF21	2	17.8	0.16	612	●
A18	A6 | A7 | A8 | A9 | A15	2.5	M22	MF22	2	17.8	0.16	614	●
A18	A6 | A7 | A8 | A9 | A15	3.0	M24 | M27	MF23	1	17.8	0.16	616	●
A18	A6 | A7 | A8 | A9 | A15	3.5	M30 | M33	MF24	1	17.8	0.16	618	●
A25	A10 | A11 | A16 | A17	3.0	M32 | M33	MF30	2	25	0.18	620	●
A25	A10 | A11 | A16 | A17	4.0	M36 | M39	MF32	1	25	0.18	622	●
A25	A10 | A11 | A16 | A17	4.5	M45	MF33	1	25	0.18	624	●
A25	A10 | A11 | A16 | A17	5.0	M48 | M52	MF34	1	25	0.18	626	●
A25	A10 | A11 | A16 | A17	5.5	M60	MF35	1	25	0.18	628	●
A25	A10 | A11 | A16 | A17	6.0	M64 | M68	MF36	1	25	0.18	630	●

Prod. Gr. 1FE

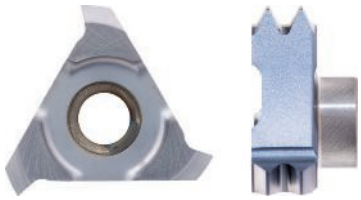
ATORN® Cutting insert, triple cutter, 55° full profile

for universal use up to 1500 N/mm²

Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Triple-edge cutter in full-profile design

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Precise thread milling of profiles



Indexable insert type	Suitable for holder	Number of thread starts per inch	Suitable from thread size	Number of teeth (PCS)	Cutting edge Ø (mm)	fz steel 1300 ● (mm)	13397... Ident. No.	
A10	A1 | A2 | A12 | A13	19	G 1/4 inch	2	10	0.10	632	●
A12	A3 | A4 | A5 | A14	19	G 3/8 inch	2	12	0.12	634	●
A18	A6 | A7 | A8 | A9 | A15	14	G 7/8 inch	2	17.8	0.16	636	●
A18	A6 | A7 | A8 | A9 | A16	11	G 1 inch	2	17.8	0.16	638	●

Prod. Gr. 1FE

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397632-638	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

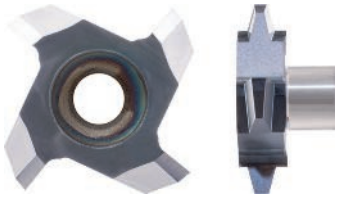
ATORN® Cutting insert, triple cutter, full profile, trapezoidal thread

for universal use up to 1500 N/mm²

Application:
For producing metric right-hand and left-hand threads on CNC machines, in steel, stainless steel, non-ferrous metals, cast iron and special alloy material groups up to a strength of 1500 N/mm².

Execution:
- Three-flute cutter in full profile design (indexable inserts type A25 in four-flute cutter design)

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- High-quality cutting material and cutting edge finish for very high service life requirements
- Precise thread milling of profiles



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13397640-648	100	80	60	80	60	120	180	100	160	80	140	140		60	30	30	30	60	

Indexable insert type	Suitable for holder	Pitch (mm)	Suitable for min. Ø (mm)	Number of teeth (PCS)	Cutting edge Ø (mm)	fz steel 1300 ● (mm)	13397... Ident. No.	
A10	A1 | A2 | A12	2	16	1	10	0.10	640	●
A18	A6 | A7 | A8 | A9 | A15	3	24	1	17.8	0.16	642	●
A18	A15	4	26	1	17.8	0.16	644	●
A18	A15	5	28	1	17.8	0.16	646	●
A25	A10 | A11 | A16 | A17	6	36	1	25	0.18	648	●

Prod. Gr. 1FE

ATORN® HSS hand tap set in box (DIN 352)

for use in high-tensile steel up to 1300 N/mm²

M | ≤1xd | HSS | HSSE | HSSE-PM



Application:
Ident. No. 010: For producing metric threads by hand in through holes and blind holes, in steel, non-ferrous metals and (cast iron) material groups up to a strength of **1000 N/mm²**.

Ident. No. 012–016: For producing metric threads by hand in through holes and blind holes, in the high-strength steel material group up to a strength of **1300 N/mm²**.

Execution:
- **Ident. No. 010:** Hand tap set, HSS, comprising taper tap with one ring (Type A), second tap with two rings (Type D) and third tap (plug) (Type C) for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 012:** Hand tap set, HSSE, comprising taper tap with one ring (Type A), second tap with two rings (Type D) and third tap (plug) (Type C) for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 016:** Hand tap set, HSSE-PM, comprising taper tap with one ring (Type A), second tap with two rings (Type D) and third tap (plug) (Type C) for M3, M4, M5, M6, M8, M10, M12

Advantage:
- Innovative cutting geometry ensures very high dimensional accuracy, process reliability and chip removal
- Robust metal box protects the tool from damage and contamination
- **Ident. No. 010:** Universal use for maximum application flexibility
- **Ident. No. 012–016:** Specialised use with optimised chip geometry for use in hardened steel

Cutting material		HSS	HSSE	HSSE-PM
Composition of set		3 hand taps for each size (taper tap/second tap/third tap (plug)) M3/M4/M5/M6/M8/M10/M12	3 hand taps for each size (taper tap/second tap/third tap (plug)) M3/M4/M5/M6/M8/M10/M12	3 hand taps for each size (taper tap/second tap/third tap (plug)) M3/M4/M5/M6/M8/M10/M12
Colour ring system		Steels	Steels	Steels
13395...	Ident. No.	010	012	016
		●	●	●

Prod. Gr. 1KB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13395010	●	●					●	●	●	●	●	●							
13395012			●											●					
13395016			●											●					

ATORN® Box for hand tap set



Application:
For storing M3 to M12 hand taps.

Execution:
- Empty steel metal box for hand taps

Advantage:
- Robust metal box made from high-quality steel

Composition of set		Can hold 3 hand taps for each size (taper tap/second tap/third tap (plug)) M3/M4/M5/M6/M8/M10/M12
13395...	Ident. No.	020
		●

Prod. Gr. 1KB

ATORN® Machine tap + core drill set

In blind holes

M | HSSE | ≤2,5xd

Application:

Ident. No. 015: For producing metric threads on CNC machines or conventional machines in blind holes, in steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of **1000 N/mm²**.

Ident. No. 025: For producing metric threads on CNC machines or conventional machines in blind holes, in the high-strength steel material group up to a strength of **1300 N/mm²**.

Ident. No. 035: For producing metric threads on CNC machines or conventional machines in blind holes, in steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of **1300 N/mm²**.

Ident. No. 060: For producing metric threads on CNC machines or conventional machines in blind holes, in steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of **1000 N/mm²**.

Execution:

- **Ident. No. 015:** Machine tap set, comprising HSSE 13281 and core drills 11020 for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 025:** Machine tap set, comprising HSSE 13306 and core drills 11020 for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 035:** Machine tap set, comprising HSSE 13052 and core drills 11020 for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 060:** Machine tap set, comprising HSSE 13121 and core drills 11020 for M3, M4, M5, M6, M8, M10, M12

Advantage:

- Robust metal box protects the tool from damage and contamination
- **Ident. No. 015, 035–060:** Universal use for maximum application flexibility
- **Ident. No. 015–035:** Innovative cutting geometry and coating ensure high process reliability
- **Ident. No. 025:** Specialised use with optimised chip geometry for use in high-strength steel
- **Ident. No. 060:** Innovative cutter geometry and coating ensure high process reliability



Ident. No. 015–035



Ident. No. 060

Composition of set		1 of each HSSE 13281 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13306 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13052 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13125 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2
Cutting material		HSSE	HSSE	HSSE	HSSE
Colour ring system		Steels	Steels	UNI	UNI
13400...	Ident. No.	015	025	035	060
		●	●	●	●

Prod. Gr. 1KB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13400015	16	11		9		18	18	15	18	15	15	13		16					
13400025	15	10	9																
13400035	17	11	10	9	11	19	19	17	19	17	17	15	16	18					

ATORN® Machine tap set

In through holes and blind holes

M | ≤2,5xd | ≤2,5xd | HSSE

Application:

No. 13400: For manufacturing metric threads in through and blind holes on CNC or conventional machines in the steel, stainless steel, NF metals and cast material groups up to a strength of **1000 N/mm²**.

No. 13401 015: For producing metric threads on CNC machines or conventional machines in blind holes and through holes, in steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of **1000 N/mm²**.

No. 13401 045: For producing metric threads on CNC machines or conventional machines in through holes, in steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of **1300 N/mm²**.

No. 13401 080: For manufacturing fine metric threads in through and blind holes on CNC or conventional machines in the steel, stainless steel, NF metals and cast material groups up to a strength of **1000 N/mm²**.

Execution:

- **No. 13400:** machine tap set consisting of **HSSE 13121 + 13125**
- **No. 13401 015:** Machine tap set, comprising **HSSE 13113 + 13117 + 13281** for M3, M4, M5, M6, M8, M10, M12
- **No. 13401 045:** Machine tap set, comprising **HSSE-TiN 13246 + 13052** for M3, M4, M5, M6, M8, M10, M12
- **No. 13401 080:** machine tap set, comprising **HSSE 13121 + 13125** for M3, M4, M5, M6, M8, M10, M12

Advantage:

- Universal use for maximum application flexibility
- Robust metal box protects the tool from damage and contamination
- **No. 13400 100, 13401 080:** Innovative cutter geometry and coating ensure high process reliability
- **No. 13401 015–13401 045:** Innovative cutting geometry and coating ensure high process reliability



No. 13400



No. 13401 015–13401 045



No. 13401 080

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13401015	14	10		8		18	18	15	18	15	15	13		16					
13401045	17	11	10	9	11	19	19	17	19	17	17	15	16	18					

Composition of set		1 of each machine tap M3/M4/M5/M6/M8/M10/M12 for through holes and blind holes	1 of each machine tap M3/M4/M5/M6/M8/M10/M12 for through holes and blind holes	1 of each HSSE 13121 + 13125 machine tap M3/M4/M5/M6/M8/M10/M12 for through hole and blind hole	5 of each HSSE 13121 + 13125 machine tap M3/M4/M5/M6/M8/M10/M12 for through hole and blind hole
Cutting material		HSSE	HSSE	HSSE	HSSE
Colour ring system		Steels	UNI	UNI	UNI
13401...	Ident. No.	015 ●	045 ●	080 ●	-
13400...	Ident. No.	-	-	-	100 ●

Prod. Gr. 1KB

ATORN® Machine tap + core drill set

In through holes and blind holes

M | HSSE | ≤2,5xd | ≤2,5xd

Application:

Ident. No. 025: For producing metric threads on CNC machines or conventional machines in blind holes and through holes, in steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of **1000 N/mm²**.

Ident. No. 035: For producing metric threads on CNC machines or conventional machines in blind holes and through holes, in the high-strength steel material group up to a strength of **1300 N/mm²**.

Ident. No. 060: For manufacturing metric threads in through and blind holes on CNC or conventional machines in the steel, stainless steel, NF metals and cast material groups up to a strength of **1000 N/mm²**.

Execution:

- **Ident. No. 025:** Machine tap set, comprising HSSE 13113 + 13117 + 13281 and core drill no. 11020 for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 035:** Machine tap set, comprising HSSE 13130 + 13306 and core drill no. 11029 for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 060:** Machine tap set, comprising **HSSE 13121 + 13125** and core drill 11020 for M3, M4, M5, M6, M8, M10, M12

Advantage:

- Robust metal box protects the tool from damage and contamination
- **Ident. No. 025, 060:** Universal use for maximum application flexibility
- **Ident. No. 025–035:** Innovative cutting geometry and coating ensure high process reliability
- **Ident. No. 035:** Specialised use with optimised chip geometry for use in high-strength steel
- **Ident. No. 060:** Innovative cutter geometry and coating ensure high process reliability



Ident. No. 060

Composition of set		1 of each HSSE 13113 + 13117 + 13281 machine tap M3/M4/M5/M6/M8/M10/M12 for through holes and blind holes, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13130 + 13306 machine tap M3/M4/M5/M6/M8/M10/M12 for through holes and blind holes, 1 of each core drill no. 11029 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13121 + 13125 machine tap M3/M4/M5/M6/M8/M10/M12 for through holes and blind holes, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2
Cutting material		HSSE	HSSE	HSSE
Colour ring system		Steels	High-strength steels	UNI
13401...	Ident. No.	025 ●	035 ●	060 ●

Prod. Gr. 1KB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13401025	14	10		8		18	18	15	18	15	15	13		16					
13401035	15	10	9																

ATORN® Machine tap set, empty

For screw taps and core drills

Application:
For storing M3 to M12 machine taps and core drills.

Execution:

- Empty steel metal box for screw taps and core drills

Advantage:

- Robust metal box protects the tool from damage and contamination



Composition of set		1 of each machine tap M3/M4/M5/M6/M8/M10/M12 for through holes and blind holes, 1 of each core drill with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2
13401...	Ident. No.	050 ●

Prod. Gr. 1KB

ATORN® Machine tap set + core drill

In through holes

M | HSSE | HSSE-PM | ≤3xd

Application:

Ident. No. 015: For producing metric threads on CNC machines or conventional machines in through holes, in steel, (stainless steel), non-ferrous metals and (cast iron) material groups up to a strength of **1000 N/mm²**.

Ident. No. 035: For producing metric threads on CNC machines or conventional machines in blind holes and through holes, in the high-strength steel material group up to a strength of **1300 N/mm²**.

Ident. No. 045: For producing metric threads on CNC machines or conventional machines in through holes, in steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of **1300 N/mm²**.

Ident. No. 060: For producing metric threads on CNC machines or conventional machines in through holes, in steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of **1000 N/mm²**.

Execution:

- **Ident. No. 015:** Machine tap set, comprising **HSSE 13113 + 13117 and core drill no. 11020** for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 035:** Machine tap set, comprising **HSSE 13130 and core drill no. 11029** for M3, M4, M5, M6, M8, M10, M12 for the highest requirements in terms of process reliability and service life
- **Ident. No. 045:** Machine tap set, comprising **HSSE-TiN 13246 and core drill no. 11020**, for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 060:** Machine tap set, comprising HSSE 13125 and core drills 11020 for M3, M4, M5, M6, M8, M10, M12

Advantage:

- Robust metal box protects the tool from damage and contamination
- **Ident. No. 015, 045–060:** Universal use for maximum application flexibility
- **Ident. No. 015–045:** Innovative cutting geometry and coating ensure high process reliability
- **Ident. No. 035:** Specialised use with optimised chip geometry for use in high-strength steel
- **Ident. No. 060:** Innovative cutter geometry and coating ensure high process reliability



Ident. No. 015–045



Ident. No. 060

Composition of set		1 of each HSSE 13113 + 13117 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13130 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11029 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE-TiN 13246 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13121 machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill no. 11020 with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2
Cutting material		HSSE	HSSE	HSSE-PM	HSSE
Colour ring system		Steels	Steels	UNI	UNI
13402...	Ident. No.	015	035	045	060
		●	●	●	●

Prod. Gr. 1KB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13402015	14	10		8		18	18	15	18	15	15	13		16					
13402035	15	10	9																
13402045	18	13	10	10	10	19	19	17	19	17	17	15		18					

ATORN® Machine tap set

For universal use up to 1000 N/mm² in through holes

M | HSSE | ≤3xd

Application:

Ident. No. 025–045: For producing metric threads on CNC machines or conventional machines or cutting by hand in **through holes**, in steel, (stainless steel), non-ferrous metals and cast iron material groups up to a strength of **1000 N/mm²**.

Ident. No. 090: For producing metric threads in through holes on CNC machines or conventional machines in the steel, stainless steel, non-ferrous metals and cast iron material groups up to a strength of **1000 N/mm²**.

Execution:

- **Ident. No. 025:** Machine tap set, short, comprising **HSSE 13063** for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 045:** Machine tap set, short, comprising **HSSE 13063 and core drill no. 11020** for M3, M4, M5, M6, M8, M10, M12
- **Ident. No. 090:** machine tap set, comprising **HSSE 13121** for M3, M4, M5, M6, M8, M10, M12

Advantage:

- Universal use for maximum application flexibility
- Robust metal box protects the tool from damage and contamination
- **Ident. No. 025:** Innovative cutting geometry ensures high process reliability
- **Ident. No. 045–090:** Innovative cutter geometry and coating ensure high process reliability



Ident. No. 025–045



Ident. No. 090

Composition of set		1 of each machine tap M3/M4/M5/M6/M8/M10/M12	1 of each machine tap M3/M4/M5/M6/M8/M10/M12, 1 of each core drill with diameter 2.5/3.3/4.2/5.0/6.8/8.5/10.2	1 of each HSSE 13121 machine tap M3/M4/M5/M6/M8/M10/M12 for through hole
Cutting material		HSSE	HSSE	HSSE
Colour ring system		Steels	Steels	UNI
13403...	Ident. No.	025	045	090
		●	●	●

Prod. Gr. 1KB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13403025	15	10		9		18	18	15	18	15	15	13		16					
13403045	15	10		9		18	18	15	18	15	15	13		16					

ATORN® Drill extractor for machine tap

For use in hardened steels to 63HRC

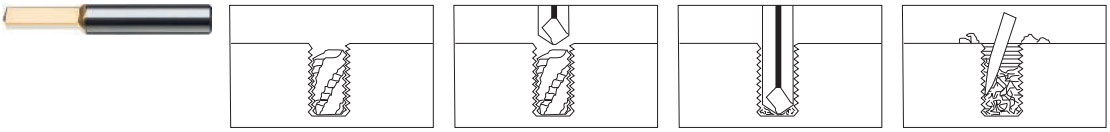
(DIN 374)

VHM

Application:
For drilling out broken-off screw taps (HSS, HSSE, HSSE PM) up to a hardness of 65 HRC using bench-type or column-type drills, wet or dry machining at a rotation speed of 1000-2000 rpm in hand-feed or for wet machining on CNC machines at a rotation speed of 1400-2400 rpm and a feed rate of 0.03-0.06 per revolution. The drill bit has a service life of 3 to 5 screw taps.

Execution:
- Solid carbide-TiN drill bit, with three cutting edges

Advantage:
- User-friendly and efficient removal of screw taps saves time and money.
- Innovative cutting geometry ensures high process reliability and a long service life.



Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13521																		●	●

Suitable for screw thread	Cutting edge Ø (mm)	Chip flute length (mm)	Length (mm)	Shaft Ø (mm)	13521... Ident. No.	
M3	2.5	10	38	3	030	●
M4	3.3	14	46	4	040	●
M5	4.2	19	50	5	050	●
M6	5	23	50	6	060	●
M8	6.8	23	60	7	080	●
M10	8.5	25	80	9	100	●
M12	10.2	35	80	11	120	●

Prod. Gr. 139

ATORN® Drill extractor for machine tap set (DIN 374)

For use in hardened steels to 63HRC

Application:
For drilling out broken-off M3, M4, M5, M6, M8, M10 and M12 screw taps (HSS, HSSE, HSSE PM) up to a hardness of 65 HRC using bench-type or column-type drills, wet or dry machining at a rotation speed of 1000-2000 rpm in hand-feed or for wet machining on CNC machines at a rotation speed of 1400-2400 rpm and a feed rate of 0.03 - 0.06 per revolution. The drill bit has a service life of 3 to 5 screw taps.

Execution:
- Precision-ground drill bit for screw taps, solid carbide-TiN, with three cutting edges for M3, M4, M5, M6, M8, M10 and M12 for extremely high requirements for process reliability and service life.

Advantage:
- User-friendly and efficient removal of screw taps saves time and money.
- Innovative cutting geometry ensures high process reliability and a long service life.
- Sturdy plastic tool box protects the tools from dirt and damage.

Technical data:
- Suitable for screw thread: M3 | M4 | M5 | M6 | M8 | M10 | M12



13521...	Ident. No.	300
		●

Prod. Gr. 139

overview: threading dies



	Ø	P 700	P 1000	P 1300	M	N	K	S	
13410	M1-M36	●				○			
13412	M3 L-M24 L	●				○			
13418	M2-M24		●	●	●			●	
13421	M3-M20	●				○			
13440	MF2-MF63	●				○			
13442	MF8 L-MF24 L	●				○			
13446	MF5-MF30		●	●	●			●	
13450	UNC Nr.2-UNC 1 inch	●				○			
13460	UNF Nr.4-UNF 3/4 inch	●				○			
13466	NPT 1/8-NPT 3/4 inch	●				○			
13470	BSW 1/8-BSW 5/8 inch	●				○			
13480	G 1/8-G 2 inch	●				○			
13484	G 1/8-G 1 inch		●	●	●			●	

	Ø	P 700	P 1000	P 1300	M	N	K	S	
13487	G 1/8-G 1 1/4 inch	●				○			
13491	PG 7-PG 29	●							
13434	M3-M30	●				○			

ATORN® ORION® HSS threading die (EN standard 24231)

for universal use up to 700 N/mm²

G | HSS | A

Application:
For cutting G (pipe) threads externally in the material groups of steel and non-ferrous metals up to a strength of 700 N/mm².

Execution:
- right die. tol. A with spiral point and 1.75 pitch

Advantage:
- **No. 13480:**
  - universal use for maximum flexibility during application
  - micro cut edge treatment and special lapping method for excellent process reliability and long service life
- **No. 13487:** standard geometry with excellent price/performance ratio



No. 13480



No. 13487

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13480	●					●					●	●							
13487	●					●					●	●							

				ATORN		ORION	
			Cutting direction	Right-hand cutting		Right-hand cutting	
Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	13480... Ident. No.		13487... Ident. No.	
G 1/8 in	28	30	11	010	●	010	●
G 1/4 in	19	38	10	020	●	020	●
G 3/8 in	19	45	14	030	●	030	●
G 1/2 in	14	45	14	040	●	040	●
G 3/4 in	14	55	16	060	●	060	●

				ATORN		ORION	
			Cutting direction	Right-hand cutting		Right-hand cutting	
Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	13480... Ident. No.		13487... Ident. No.	
G 5/8 in	14	55	16	-	-	050	●
G 1 in	11	65	18	080	●	080	●
G 7/8 in	14	65	18	-	-	070	●
G 1-1/4 in	11	75	20	-	-	100	●
G 1-1/2 in	11	90	22	120	●	-	-
G 2 in	11	105	22	140	●	-	-

ORION = Prod. Gr. 1DC
ATORN = Prod. Gr. 1KJ

ATORN® ORION® HSS threading die (EN standard 24231)

For use in steel up to 1300 N/mm², stainless steel and special alloys

G | HSSE | A

Application:
No. 13484: For cutting G (pipe) threads externally in the material groups of steel, stainless steel, non-ferrous metals and special alloys up to a strength of 1300 N/mm².
No. 13488: For tapping male (pipe) threads in the steel, stainless steel, NF metal and special alloy material groups up to a strength of 1300 N/mm².

Execution:
- **No. 13484:** right die. tol. A with spiral point, nitrided, pre-slotted and 2.0 pitch
- **No. 13488:** Right-handed die, tol. A with spiral point, pre-slotted, 2.0-threaded chamfer

Advantage:
- **No. 13484:**
  - specialised application with optimised cutting geometry for use in difficult-to-machine materials
  - micro cut edge treatment and special lapping method for excellent process reliability and long service life
- **No. 13488:** Standard geometry with a very good price-performance ratio



No. 13484



No. 13488

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13484		●	●	●	●	●					●				●	●	●		
13488		●	●	●	●	●					●				●	●	●		

				ATORN®		ORION®	
			Cutting direction	Right-hand cutting		Right-hand cutting	
Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	13484... Ident. No.		13488... Ident. No.	
G 1/8 in	28	30	11	010	●	010	●
G 1/4 in	19	38	10	020	●	020	●
G 3/8 in	19	45	14	030	●	030	●
G 1/2 in	14	45	14	040	●	040	●
G 3/4 in	14	55	16	060	●	060	●
G 1 in	11	65	18	080	●	080	●

ORION = Prod. Gr. 1DC
ATORN® = Prod. Gr. 1KJ

ATORN® ORION® HSS threading die (EN standard 22568)

For universal use up to 700 N/mm²

MF | HSS | DIN 13 6g

Application:
No. 13440: For tapping fine metric male threads in the steel and NF metal material groups up to a strength of 700 N/mm².
No. 13442–13445: For cutting fine metric threads externally in the material groups of steel and non-ferrous metals up to a strength of 700 N/mm².

Execution:
- **No. 13440: Right-handed** die, MF2 = tol. 6h, MF2.6 to MF50 = tol. 6g, MF63 = tol. 8g with spiral point, pre-slotted, 1.75-threaded chamfer
- **No. 13442: left** die, tol. 6 g with spiral point, pre-slotted and 1.75 pitch
- **No. 13445: right** die, tol. 6 g with spiral point, pre-slotted and 1.75 pitch

Advantage:
- **No. 13440:**
  - Universal use for maximum flexibility
  - Micro-cutting edge treatment and special lapping process for high process reliability and a long service life
- **No. 13442:**
  - universal use for maximum flexibility during application
  - micro cut edge treatment and special lapping method for excellent process reliability and long service life
- **No. 13445:** standard geometry with excellent price/performance ratio



No. 13440



No. 13442



No. 13445

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13440	●					●					●	●							
13442	●					●					●	●							
13445	●					●					●	●							

				ATORN®		ORION®		ATORN®	
			Cutting direction	Right-hand cutting		Right-hand cutting		Left-hand cutting	
Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	13440... Ident. No.		13445... Ident. No.		13442... Ident. No.	
MF2	0.25	16	5	020	●	-	-	-	-
MF2.6	0.35	16	5	026	○	-	-	-	-
MF3	0.35	20	5	030	●	030	●	-	-
MF4	0.35	20	5	040	●	-	-	-	-
MF4	0.5	20	5	045	●	045	●	-	-
MF5	0.5	20	5	050	●	050	●	-	-
MF6	0.5	20	5	060	●	060	●	-	-
MF6	0.75	20	7	065	●	065	●	-	-
MF7	0.75	25	9	070	●	-	-	-	-
MF8	0.5	25	9	080	●	080	●	-	-
MF8	0.75	25	9	083	●	083	●	083	●
MF8	1	25	9	086	●	086	●	086	●
MF9	1	25	9	090	●	-	-	-	-
MF10	0.75	30	11	100	●	-	-	-	-
MF10	1	30	11	103	●	103	●	103	●
MF10	1.25	30	11	106	●	106	●	-	-
MF11	1	30	11	110	●	-	-	-	-
MF12	1	38	10	120	●	120	●	120	●
MF12	1.25	38	10	123	●	123	●	-	-
MF12	1.5	38	10	126	●	126	●	126	●
MF14	1	38	10	140	●	140	●	-	-
MF14	1.25	38	10	143	●	143	●	-	-
MF14	1.5	38	10	146	●	146	●	146	●
MF15	1	38	10	150	●	-	-	-	-
MF16	1	45	14	160	●	160	●	-	-
MF16	1.5	45	14	165	●	165	●	165	●
MF18	1	45	14	180	●	180	●	-	-
MF18	1.5	45	14	183	●	183	●	183	●
MF20	1	45	14	200	●	200	●	-	-
MF20	1.5	45	14	203	●	203	●	203	●

				ATORN®		ORION®		ATORN®	
			Cutting direction	Right-hand cutting		Right-hand cutting		Left-hand cutting	
Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	13440... Ident. No.		13445... Ident. No.		13442... Ident. No.	
MF20	2	45	14	206	●	206	●	-	-
MF22	1	55	16	220	●	-	-	-	-
MF22	1.5	55	16	223	●	223	●	-	-
MF22	2	55	16	226	●	-	-	-	-
MF24	1	55	16	240	●	-	-	-	-
MF24	1.5	55	16	243	●	243	●	243	○
MF24	2	55	16	246	●	246	●	-	-
MF25	1.5	55	16	250	●	255	●	-	-
MF26	1.5	55	16	260	●	-	-	-	-
MF27	2	65	18	275	●	275	●	-	-
MF27	1.5	65	18	-	-	270	●	-	-
MF28	1.5	65	18	280	●	-	-	-	-
MF30	1.5	65	18	303	●	303	●	-	-
MF30	2	65	18	306	●	306	●	-	-
MF32	1.5	65	18	320	●	320	●	-	-
MF33	1.5	65	18	330	●	-	-	-	-
MF33	2	65	18	335	●	-	-	-	-
MF34	1.5	65	18	340	●	-	-	-	-
MF35	1.5	65	18	350	●	-	-	-	-
MF36	1.5	65	18	360	●	-	-	-	-
MF36	2	65	18	363	●	-	-	-	-
MF36	3	65	25	366	●	-	-	-	-
MF40	1.5	75	20	400	●	405	●	-	-
MF42	1.5	75	20	420	●	-	-	-	-
MF42	2	75	20	423	●	-	-	-	-
MF45	1.5	90	22	450	●	-	-	-	-
MF48	1.5	90	22	480	●	-	-	-	-
MF50	1.5	90	22	500	●	505	●	-	-
MF63	1.5	105	22	630	○	-	-	-	-

ORION = Prod. Gr. 1DC
ATORN® = Prod. Gr. 1KJ

ATORN® ORION® HSS threading die (EN standard 22568)

For universal use and stainless steel

MF | HSSE | DIN 13 6g

Application:
For cutting fine metric threads externally in the material groups of steel, stainless steel, non-ferrous metals and special alloys up to a strength of 1300 N/mm².

Execution:
- right die. tol. 6 g with spiral point, nitrided, pre-slotted and 2.0 pitch

Advantage:
- **No. 13446:**
  - specialised application with optimised cutting geometry for use in difficult-to-machine materials
  - micro cut edge treatment and special lapping method for excellent process reliability and long service life
- **No. 13447:** standard geometry with excellent price/performance ratio



No. 13446



No. 13447

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13446		●	●	●	●	●					●				●	●	●		
13447		●	●	●	●	●					●				●	●	●		

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	ATORN® Right-hand cutting 13446... Ident. No.		ORION® Right-hand cutting 13447... Ident. No.	
MF5	0.5	20	5	050	●	-	-
MF6	0.75	20	7	065	●	-	-
MF8	0.75	25	9	083	●	-	-
MF8	1	25	9	086	●	086	●
MF10	1	30	11	103	●	103	●
MF12	1	38	10	120	●	120	●
MF12	1.5	38	10	126	●	126	●

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	ATORN® Right-hand cutting 13446... Ident. No.		ORION® Right-hand cutting 13447... Ident. No.	
MF14	1.5	38	10	146	●	146	●
MF16	1.5	45	14	165	●	165	●
MF18	1.5	45	14	183	●	183	●
MF20	1.5	45	14	203	●	203	●
MF22	1.5	55	16	223	●	-	-
MF24	1.5	55	16	243	●	-	-
MF30	1.5	65	18	303	●	-	-

ORION = Prod. Gr. 1DC
ATORN® = Prod. Gr. 1KJ

ATORN® Thread-cutting die HSS (EN standard 22568)

for universal use up to 700 N/mm²

UNC | HSS | 2A



Application:
For cutting UNC (Unified Coarse) threads externally in the material groups of steel and non-ferrous metals up to a strength of 700 N/mm².

Execution:
- right die. tol. 2A with spiral point and 1.75 pitch

Advantage:
- universal use for maximum flexibility during application
- micro cut edge treatment and special lapping method for excellent process reliability and long service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13450	●						●			●		●							

Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	Cutting direction Right-hand cutting 13450... Ident. No.	
UNC 2 in	56	16	5	020	●
UNC 4 in	40	16	5	040	●
UNC 6 in	32	20	7	060	●
UNC 8 in	32	20	7	070	●
UNC 10 in	24	20	7	080	●
UNC 1/4 in	20	20	7	100	●
UNC 5/16 in	18	25	9	110	●

Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	Cutting direction Right-hand cutting 13450... Ident. No.	
UNC 3/8 in	16	30	11	120	●
UNC 7/16 in	14	30	11	130	●
UNC 1/2 in	13	38	14	140	●
UNC 9/16 in	12	38	14	150	●
UNC 5/8 in	11	45	18	160	●
UNC 3/4 in	10	45	18	170	●
UNC 1 in	8	55	22	190	●

Prod. Gr. 1KJ

ATORN® Thread-cutting die HSS (EN standard 22568)

for universal use up to 700 N/mm²

UNF | HSS | 2A



Application:
For cutting UNF (Unified Fine) threads externally in the material groups of steel and non-ferrous metals up to a strength of 700 N/mm².

Execution:
- right die. tol. 2A with spiral point and 1.75 pitch

Advantage:
- universal use for maximum flexibility during application
- micro cut edge treatment and special lapping method for excellent process reliability and long service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13460	●						●			●		●							

Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	Cutting direction Right-hand cutting 13460... Ident. No.	
UNF 4 in	48	16	5	050	○
UNF 6 in	40	20	5	070	●
UNF 8 in	36	20	7	080	●
UNF 10 in	32	20	7	090	●
UNF 12 in	28	20	7	100	●
UNF 1/4 in	28	20	7	110	●

Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	Cutting direction Right-hand cutting 13460... Ident. No.	
UNF 5/16 in	24	25	9	120	●
UNF 3/8 in	24	30	11	130	●
UNF 7/16 in	20	30	11	140	●
UNF 1/2 in	20	38	10	150	●
UNF 9/16 in	18	38	10	160	●
UNF 5/8 in	18	45	14	170	●
UNF 3/4 in	16	45	14	180	●

Prod. Gr. 1KJ

ATORN® Thread-cutting die HSS (EN standard 24230)

for universal use up to 700 N/mm²

NPT | HSS



Application:
For cutting tapered 1: 16 NPT (National Pipe Taper) threads externally in the material groups of steel and non-ferrous metals up to a strength of 700 N/mm².

Execution:
- right die with spiral point and 1.75 pitch

Advantage:
- universal use for maximum flexibility during application
- micro cut edge treatment and special lapping method for excellent process reliability and long service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13466	●						●			●		●							

Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	Cutting direction: Right-hand cutting 13466... Ident. No.	
NPT 1/8 in	27	30	11	010	●
NPT 1/4 in	18	38	14	020	●
NPT 3/8 in	18	45	14	030	●
NPT 1/2 in	14	45	18	040	●
NPT 3/4 in	14	55	22	050	●

Prod. Gr. 1KJ

ATORN® Thread-cutting die HSS (EN standard 22568)

for universal use up to 700 N/mm²

BSW | HSS



Application:
For cutting BSW (British Whitworth) threads externally in the material groups of steel and non-ferrous metals up to a strength of 700 N/mm².

Execution:
- right die with spiral point and 1.75 pitch

Advantage:
- universal use for maximum flexibility during application
- micro cut edge treatment and special lapping method for excellent process reliability and long service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13470	●						●			●		●							

Thread type x nominal Ø in inches	Number of thread starts per inch	Outer Ø (mm)	Height (mm)	Cutting direction: Right-hand cutting 13470... Ident. No.	
BSW 1/8 in	40	20	5	030	●
BSW 5/32 in	32	20	7	040	○
BSW 7/32 in	24	20	7	060	○
BSW 1/4 in	20	20	7	070	●
BSW 5/16 in	18	25	9	080	●
BSW 3/8 in	16	30	11	090	●
BSW 1/2 in	12	38	14	110	●
BSW 5/8 in	11	45	18	130	●

Prod. Gr. 1KJ

ATORN® HSS threading die (EN standard 22568)

for universal use up to 700 N/mm²

M | HSS | DIN 13 6g

Application:

No. 13410: For tapping metric male threads in the steel and NF metal material groups up to a strength of 700 N/mm².

No. 13412: For producing **left-hand metric male threads** in the steel and non-ferrous metals material groups up to a strength of 700 N/mm².

Execution:

- **No. 13410:** Right-handed die, M1 to M1.4 = tol. 6h, M1.6 to M36 = tol. 6g with spiral point (from M3), pre-slotted, 1.75-threaded chamfer
- **No. 13412:** Left-handed die M3 to M24 = tol. 6g with spiral point, pre-slotted, 1.75-threaded chamfer

Advantage:

- Universal use for maximum flexibility
- Micro-cutting edge treatment and special lapping process for high process reliability and a long service life



No. 13410



No. 13412

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13410	●					●					●	●							
13412	●					●					●	●							

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	Cutting direction: Right-hand cutting 13410... Ident. No.		Left-hand cutting 13412... Ident. No.	
M1	0.25	16	5	010	●	-	-
M1.2	0.25	16	5	012	●	-	-
M1.4	0.3	16	5	014	●	-	-
M1.6	0.35	16	5	016	●	-	-
M1.7	0.35	16	5	017	●	-	-
M1.8	0.35	16	5	018	●	-	-
M2	0.4	16	5	020	●	-	-
M2.2	0.45	16	5	022	●	-	-
M2.3	0.4	16	5	023	●	-	-
M2.5	0.45	16	5	025	●	-	-
M2.6	0.45	16	5	026	●	-	-
M3	0.5	20	5	030	●	030	●

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	Cutting direction: Right-hand cutting 13410... Ident. No.		Left-hand cutting 13412... Ident. No.	
M3.5	0.6	20	5	035	●	-	-
M4	0.7	20	5	040	●	040	●
M4.5	0.75	20	7	045	●	-	-
M5	0.8	20	7	050	●	050	●
M6	1	20	7	060	●	060	●
M7	1	25	9	070	●	-	-
M8	1.25	25	9	080	●	080	●
M9	1.25	25	9	090	●	-	-
M10	1.5	30	11	100	●	100	●
M11	1.5	30	11	110	●	-	-
M12	1.75	38	14	120	●	120	●
M14	2	38	14	140	●	140	●

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	Cutting direction: Right-hand cutting 13410... Ident. No.		Left-hand cutting 13412... Ident. No.	
M16	2	45	18	160	●	160	●
M18	2.5	45	18	180	●	-	-
M20	2.5	45	18	200	●	200	●
M22	2.5	55	22	220	●	-	-
M24	3	55	22	240	●	240	●

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	Cutting direction: Right-hand cutting 13410... Ident. No.		Left-hand cutting 13412... Ident. No.	
M27	3	65	25	270	●	-	-
M30	3.5	65	25	300	●	-	-
M33	3.5	65	25	330	●	-	-
M36	4	65	25	360	●	-	-

Prod. Gr. 1KI

ATORN® Thread-cutting die HSSE (EN standard 22568)

For universal use up to 1300 N/mm²

M | HSSE | DIN 13 6g



Application:
For tapping metric male threads in the steel, stainless steel, NF metal and special alloy material groups up to a strength of 1300 N/mm².

Execution:
- Right-handed die, tol. 6g with spiral point (from M2) and nitrided, pre-slotted, 2.0-threaded chamfer

Advantage:
- Specialised insert with optimised chipping geometry for use in materials that are difficult to machine
- Micro-cutting edge treatment and special lapping process for high process reliability and a long service life

p. 316 p. 310

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13418		●	●	●	●	●					●				●	●	●		

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	Cutting direction 13418... Ident. No.	Right-hand cutting
M2	0.4	16	3.5	020	●
M2.5	0.45	16	5	025	●
M2.6	0.45	16	5	026	○
M3	0.5	20	5	030	●
M3.5	0.6	20	5	035	●
M4	0.7	20	5	040	●
M5	0.8	20	7	050	●
M6	1	20	7	060	●

Thread type x nominal Ø	Pitch (mm)	Outer Ø (mm)	Height (mm)	Cutting direction 13418... Ident. No.	Right-hand cutting
M8	1.25	25	9	080	●
M10	1.5	30	11	100	●
M12	1.75	38	14	120	●
M14	2	38	14	140	●
M16	2	45	18	160	●
M18	2.5	45	18	180	●
M20	2.5	45	18	200	●
M24	3	55	22	240	●

Prod. Gr. 1KI

ATORN® Hexagonal thread-cutting die HSS (DIN 382)

for universal use up to 700 N/mm²

M | HSS | DIN 13 6g



Application:
For retapping and repairing damaged metric male threads in the steel and NF metal material groups up to a strength of 700 N/mm².

Execution:
- Right-handed hexagonal die with tol. 6g

Advantage:
- Hexagonal design for tapping difficult to reach threads
- Micro-cutting edge treatment and special lapping process for high process reliability and a long service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13434	●					●					●	●							

Thread type x nominal Ø	Pitch (mm)	Width across flats	Height (mm)	13434... Ident. No.	
M3	0.5	18 mm	5	030	○
M4	0.7	18 mm	5	040	●
M5	0.8	18 mm	7	050	●
M6	1	18 mm	7	060	●
M8	1.25	21 mm	9	080	●
M10	1.5	27 mm	11	100	●

Thread type x nominal Ø	Pitch (mm)	Width across flats	Height (mm)	13434... Ident. No.	
M12	1.75	36 mm	14	120	●
M14	2	36 mm	14	140	●
M16	2	41 mm	18	160	●
M20	2.5	41 mm	18	200	●
M24	3	50 mm	22	240	●
M30	3.5	60 mm	25	300	●

Prod. Gr. 1KI

ATORN® Thread-cutting die set, hexagonal, HSS (DIN 382)

for universal use up to 700 N/mm²

M | HSS | DIN 13 6g



Application:
For retapping and repairing damaged metric male threads in the steel and NF metal material groups up to a strength of 700 N/mm².

Execution:
- Right-handed die set, hexagonal, for M3, M4, M5, M6, M8, M10 and M12, tol. 6g

Advantage:
- Innovative cutting geometry for high process reliability
- Micro-cutting edge treatment and special lapping process for high process reliability and a long service life
- Hexagonal design for tapping difficult to reach threads
- Sturdy metal case protects the tool from dirt and damage

Min./max. thread-cutting area, metric		3-12 mm
Number of pieces in assortment/set (PCS)		7
13434...	Ident. No.	500

Prod. Gr. 1KI

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
13434500	●					●					●	●							

core hole diameter for thread cutting and thread milling
standard metric ISO thread DIN 13

nominal dia.	pitch P	core hole (drill) Ø DIN 336	core dia. female thread 6H*	
	mm	mm	min. mm	max. mm
M 1	0,25	0,75	0,729	0,785
M 1.1	0,25	0,85	0,829	0,885
M 1.2	0,25	0,95	0,929	0,985
M 1.4	0,30	1,10	1,075	1,142
M 1.6	0,35	1,25	1,221	1,321
M 1.8	0,35	1,45	1,421	1,521
M 2	0,40	1,60	1,567	1,679
M 2.2	0,45	1,75	1,713	1,838
M 2.5	0,45	2,05	2,013	2,138
M 3	0,50	2,50	2,459	2,599
M 3.5	0,60	2,90	2,850	3,010
M 4	0,70	3,30	3,242	3,422
M 4.5	0,75	3,70	3,688	3,878
M 5	0,80	4,20	4,134	4,334
M 6	1,00	5,00	4,917	5,153
M 7	1,00	6,00	5,917	6,153
M 8	1,25	6,80	6,647	6,912
M 9	1,25	7,80	7,647	7,912
M 10	1,50	8,50	8,376	8,676

nominal dia.	pitch P	core hole (drill) Ø DIN 336	core dia. female thread 6H*	
	mm	mm	min. mm	max. mm
M 11	1,50	9,50	9,376	9,676
M 12	1,75	10,20	10,106	10,441
M 14	2,00	12,00	11,835	12,210
M 16	2,00	14,00	13,835	14,210
M 18	2,50	15,50	15,294	15,744
M 20	2,50	17,50	17,294	17,744
M 22	2,50	19,50	19,294	19,744
M 24	3,00	21,00	20,752	21,252
M 27	3,00	24,00	23,752	24,252
M 30	3,50	26,50	26,211	26,771
M 33	3,50	29,50	29,211	29,771
M 36	4,00	32,00	31,670	32,270
M 39	4,00	35,00	34,670	35,270
M 42	4,50	37,50	37,129	37,799
M 45	4,50	40,50	40,129	40,799
M 48	5,00	43,00	42,587	43,297
M 52	5,00	47,00	46,587	47,297
M 56	5,50	50,50	50,046	50,796

* M 1.1 to M 1.4 core dia. female thread 5H

core hole diameter for thread cutting and thread milling
metric ISO fine thread DIN 13

nominal dia. x pitch P	core hole (drill) Ø DIN 336	core dia. female thread 6H	
mm	mm	min. mm	max. mm
M 2.5 x 0.35	2,15	2,121	2,221
M 3.0 x 0.35	2,65	2,621	2,721
M 3.5 x 0.35	3,15	3,121	3,221
M 4.0 x 0.50	3,50	3,459	3,599
M 4.5 x 0.50	4,00	3,959	4,099
M 5.0 x 0.50	4,50	4,459	4,599
M 5.5 x 0.50	5,00	4,959	5,099
M 6.0 x 0.75	5,20	5,188	5,378
M 7.0 x 0.75	6,20	6,188	6,378
M 8.0 x 0.50	7,50	7,459	7,599
M 8.0 x 0.75	7,20	7,188	7,378
M 8.0 x 1.00	7,00	6,917	7,153
M 9.0 x 0.75	8,20	8,188	8,378
M 9.0 x 1.00	8,00	7,917	8,153
M 10 x 0.75	9,20	9,188	9,378
M 10 x 1.00	9,00	8,917	9,153
M 10 x 1.25	8,80	8,647	8,912
M 11 x 0.75	10,20	10,188	10,378
M 11 x 1.00	10,00	9,917	10,153
M 12 x 1.00	11,00	10,917	11,153
M 12 x 1.25	10,80	10,647	10,912
M 12 x 1.50	10,50	10,376	10,676

nominal dia. x pitch P	core hole (drill) Ø DIN 336	core dia. female thread 6H	
mm	mm	min. mm	max. mm
M 18 x 1.00	17,00	16,917	17,153
M 18 x 1.50	16,50	16,376	16,676
M 20 x 1.00	19,00	18,917	19,153
M 20 x 1.50	18,50	18,376	18,676
M 20 x 2.00	18,00	17,835	18,210
M 22 x 1.00	21,00	20,917	21,153
M 22 x 1.50	20,50	20,376	20,676
M 22 x 2.00	20,00	19,835	20,210
M 24 x 1.00	23,00	22,917	23,153
M 24 x 1.50	22,50	22,376	22,676
M 24 x 2.00	22,00	21,835	22,210
M 25 x 1.00	24,00	23,917	24,153
M 25 x 1.50	23,50	23,376	23,676
M 25 x 2.00	23,00	22,835	23,210
M 27 x 1.00	26,00	25,917	26,153
M 27 x 1.50	25,50	25,376	25,676
M 27 x 2.00	25,00	24,835	25,210
M 28 x 1.00	27,00	26,917	27,153
M 28 x 1.50	26,50	26,376	26,676
M 28 x 2.00	26,00	25,835	26,210
M 30 x 1.00	29,00	28,917	29,153
M 30 x 1.50	28,50	28,376	28,676

nominal dia. x pitch P	core hole (drill) Ø DIN 336	core dia. female thread 6H	
mm	mm	min. mm	max. mm
M 14 x 1.00	13,00	12,917	13,153
M 14 x 1.25	12,80	12,647	12,912
M 14 x 1.50	12,50	12,376	12,676
M 15 x 1.00	14,00	13,917	14,153
M 15 x 1.50	13,50	13,376	13,676
M 16 x 1.00	15,00	14,917	15,153
M 16 x 1.25	14,80	14,647	14,912
M 16 x 1.50	14,50	14,376	14,676
M 17 x 1.00	16,00	15,917	16,153
M 17 x 1.50	15,50	15,376	15,676

nominal dia. x pitch P	core hole (drill) Ø DIN 336	core dia. female thread 6H	
mm	mm	min. mm	max. mm
M 30 x 2.00	28,00	27,835	28,210
M 30 x 3.00	27,00	26,752	27,252
M 32 x 1.50	30,50	30,376	30,676
M 32 x 2.00	30,00	29,835	30,210
M 33 x 1.50	31,50	31,376	31,676
M 33 x 2.00	31,00	30,835	31,210
M 33 x 3.00	30,00	29,752	30,252
M 35 x 1.50	33,50	33,376	33,676
M 36 x 1.50	34,50	34,376	34,676

core hole diameter for thread cutting and thread milling
UNC thread ASME B1.1

nominal dia.	gear	core hole (drill) Ø DIN 336	core dia. female thread 2B	
	per inch	mm	min. mm	max. mm
No. 1-64		1,55	1,425	1,580
No. 2-56		1,85	1,694	1,872
No. 3-48		2,10	1,941	2,146
No. 4-40		2,35	2,157	2,385
No. 5-40		2,65	2,487	2,698
No. 6-32		2,85	2,642	2,896
No. 8-32		3,50	3,302	3,531
No. 10-24		3,90	3,683	3,937
No. 12-24		4,50	4,343	4,597
1/4-20		5,10	4,978	5,258
5/16-18		6,60	6,401	6,731
3/8-16		8,00	7,798	8,153
7/16-14		9,40	9,144	9,550

nominal dia.	gear	core hole (drill) Ø DIN 336	core dia. female thread 2B	
	per inch	mm	min. mm	max. mm
1/2-13		10,80	10,592	11,024
9/16-12		12,20	11,989	12,446
5/8-11		13,50	13,386	13,868
3/4-10		16,50	16,307	16,840
7/8-9		19,50	19,177	19,761
1-8		22,25	21,971	22,606
1 1/8-7		25,00	24,638	25,349
1 1/4-7		28,00	27,813	28,524
1 3/8-6		30,75	30,353	31,115
1 1/2-6		34,00	33,528	34,290
1 3/4-5		39,50	38,938	39,802
2-4.5		45,00	44,679	45,593

core hole diameter for thread cutting and thread milling
MJ thread DIN ISO 5855

nominal dia. x pitch P	core hole (drill) dia.	core dia. female thread 5H*	
mm	mm	min. mm	max. mm
MJ 3 x 0.50	2,60	2,513	2,653
MJ 4 x 0.70	3,40	3,318	3,498
MJ 5 x 0.80	4,30	4,221	4,421
MJ 6 x 0.50	5,55	5,513	5,625
MJ 6 x 0.75	5,35	5,269	5,419
MJ 6 x 1.00	5,10	5,026	5,216
MJ 8 x 0.50	7,55	7,513	7,625
MJ 8 x 0.75	7,35	7,269	7,419

nominal dia. x pitch P	core hole (drill) dia.	core dia. female thread 5H*	
mm	mm	min. mm	max. mm
MJ 8 x 1.00	7,10	7,026	7,216
MJ 8 x 1.25	6,90	6,782	6,994
MJ 10 x 1.00	9,10	9,026	9,216
MJ 10 x 1.25	8,90	8,782	8,994
MJ 10 x 1.50	8,60	8,539	8,775
MJ 12 x 1.75	10,40	10,295	10,560
MJ 16 x 2.00	14,20	14,051	14,351

* MJ 3 x 0.50 to MJ 5 x 0.80 core dia. female thread 6H

core hole diameter for thread cutting and thread milling
UNJC thread ISO 3161

nominal dia.	gear	core hole (drill) dia.	core dia. female thread 3B	
	per inch	mm	min. mm	max. mm
No. 6-32		2,85	2,733	2,939
No. 8-32		3,55	3,393	3,599
No. 10-24		4,00	3,795	4,064
No. 12-24		4,60	4,455	4,704
No. 1/4-20		5,30	5,113	5,387
5/16-18		6,75	6,563	6,833

nominal dia.	gear	core hole (drill) dia.	core dia. female thread 3B	
	per inch	mm	min. mm	max. mm
3/8-16		8,20	7,978	8,255
7/16-14		9,60	9,346	9,639
1/2-13		11,00	10,798	11,095
9/16-12		12,40	12,228	12,482
5/8-11		13,80	13,627	13,904

core hole diameter for thread cutting and thread milling
UNJF thread ISO 3161

nominal dia.	gear	core hole (drill) dia.	core dia. female thread 3B	
	per inch	mm	min. mm	max. mm
No. 6-40		3,00	2,888	3,053
No. 8-36		3,60	3,480	3,663

nominal dia.	gear	core hole (drill) dia.	core dia. female thread 3B	
	per inch	mm	min. mm	max. mm
3/8-24		8,60	8,494	8,679
7/16-20		10,00	9,876	10,084

nominal dia.	gear	core hole (drill) dia.	core dia. female thread 3B	
	per inch	mm	min. mm	max. mm
No. 10-32		4,20	4,054	4,255
No. 12-28		4,75	4,602	4,816
No. 1/4-28		5,60	5,466	5,662
5/16-24		7,00	6,906	7,109

nominal dia.	gear	core hole (drill) dia.	core dia. female thread 3B	
	per inch	mm	min. mm	max. mm
1/2-20		11,60	11,463	11,661
9/16-18		13,00	12,913	13,122
5/8-18		14,60	14,501	14,702

core hole diameter for thread cutting and thread milling
UNF thread ASME B1.1

nominal dia.	gear	core hole (drill) Ø DIN 336	core dia. female thread 2B	
	per inch	mm	min. mm	max. mm
No. 1-72		1,55	1,473	1,610
No. 2-64		1,85	1,755	1,910
No. 3-56		2,15	2,024	2,197
No. 4-48		2,40	2,271	2,459
No. 5-44		2,70	2,550	2,741
No. 6-40		2,95	2,819	3,023
No. 8-36		3,50	3,404	3,607
No. 10-32		4,10	3,962	4,166
No. 12-28		4,60	4,496	4,724
1/4-28		5,50	5,359	5,588
5/16-24		6,90	6,782	7,036
3/8-24		8,50	8,382	8,636

nominal dia.	gear	core hole (drill) Ø DIN 336	core dia. female thread 2B	
	per inch	mm	min. mm	max. mm
7/16-20		9,90	9,728	10,033
1/2-20		11,50	11,328	11,608
9/16-18		12,90	12,751	13,081
5/8-18		14,50	14,351	14,681
3/4-16		17,50	17,323	17,678
7/8-14		20,40	20,269	20,650
1-12		23,25	23,114	23,571
1 1/8-12		26,50	26,289	26,746
1 1/4-12		29,50	29,464	29,921
1 3/8-12		32,75	32,639	33,096
1 1/2-12		36,00	35,814	36,271

core hole diameter for thread cutting and thread milling
BSW (Whitworth) thread BS84

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
W 1/16	60	1,20	1,045	1,230
W 3/32	48	1,80	1,704	1,912
W 1/8	40	2,50	2,362	2,591
W 5/32	32	3,20	2,952	3,214
W 3/16	24	3,60	3,407	3,745
W 7/32	24	4,50	4,201	4,539
W 1/4	20	5,10	4,724	5,156
W 5/16	18	6,50	6,130	6,590
W 3/8	16	7,90	7,492	7,987
W 7/16	14	9,20	8,789	9,330
W 1/2	12	10,50	9,989	10,591
W 9/16	12	12,00	11,577	12,179

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
W 5/8	11	13,50	12,918	13,558
W 3/4	10	16,25	15,797	16,483
W 7/8	9	19,25	18,611	19,353
W 1	8	22,00	21,334	22,147
W 1 1/8	7	24,50	23,928	24,832
W 1 1/4	7	27,75	27,103	28,007
W 1 3/8	6	30,50	29,504	30,528
W 1 1/2	6	33,50	32,679	33,703
W 1 5/8	5	35,50	34,769	35,963
W 1 3/4	5	39,00	37,944	39,138
W 2	4,5	44,50	43,571	44,877

core hole diameter for thread cutting and thread milling
(Whitworth) pipe thread (in accordance with DIN ISO 228-1)

nominal dia.	gear	core hole (drill) Ø DIN 336	core dia. female thread	
	per inch	mm	min. mm	max. mm
G 1/16	28	6,80	6,561	6,843
G 1/8	28	8,80	8,566	8,848
G 1/4	19	11,80	11,445	11,890
G 3/8	19	15,25	14,950	15,395
G 1/2	14	19,00	18,631	19,172
G 5/8	14	21,00	20,587	21,128
G 3/4	14	24,50	24,117	24,658

nominal dia.	gear	core hole (drill) Ø DIN 336	core dia. female thread	
	per inch	mm	min. mm	max. mm
G 7/8	14	28,25	27,877	28,418
G 1	11	30,75	30,291	30,931
G 1 1/8	11	35,50	34,939	35,579
G 1 1/4	11	39,50	38,952	39,592
G 1 1/2	11	45,25	44,845	45,485
G 1 3/4	11	51,00	50,788	51,428
G 2	11	57,00	56,656	57,296

core hole diameter for thread cutting and thread milling
steel-armoured pipe thread according to DIN 40430

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
Pg 7	20	11,40	11,280	11,430
Pg 9	18	14,00	13,860	14,010
Pg 11	18	17,30	17,260	17,410
Pg 13.5	18	19,00	19,060	19,210
Pg 16	18	21,30	21,160	21,310

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
Pg 21	16	26,90	26,780	27,030
Pg 29	16	35,50	35,480	35,730
Pg 36	16	45,50	45,480	45,730
Pg 42	16	52,50	52,480	52,730
Pg 48	16	57,80	57,780	58,030

core hole diameter for thread cutting and thread milling
EG thread metr./metr. fine (EG M 14 x 1.25) for thread inserts DIN 8140

nominal dia.	pitch P	core hole (drill) dia.	core dia. female thread	
	mm	mm	min. mm	max. mm
EG M 4	0,70	4,20	4,152	4,292
EG M 5	0,80	5,25	5,174	5,334
EG M 6	1,00	6,30	6,217	6,407
EG M 8	1,25	8,40	8,271	8,483

nominal dia.	pitch P	core hole (drill) dia.	core dia. female thread	
	mm	mm	min. mm	max. mm
EG M 10	1,50	10,50	10,324	10,560
EG M 12	1,75	12,50	12,379	12,644
EG M 14	1,25	14,40	14,271	14,483
EG M 16	2,00	16,50	16,433	16,733

core hole diameter for thread cutting and thread milling
EG UNC (UNC-STI) thread for threaded wire inserts ASME B18.29.1

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
EG no. 6-32		3,80	3,678	3,879
EG no. 8-32		4,40	4,338	4,524
EG no. 10-24		5,20	5,055	5,283
EG no. 12-24		5,80	5,715	5,944
EG 1/4-20		6,70	6,624	6,868
EG 5/16-18		8,40	8,242	8,489

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
EG 3/8-16		10,00	9,868	10,127
EG 7/16-14		11,60	11,506	11,783
EG 1/2-13		13,30	13,122	13,393
EG 9/16-12		14,90	14,747	15,032
EG 5/8-11		16,50	16,375	16,673

core hole diameter for thread cutting and thread milling
EG UNF (UNF-STI) thread for thread wire inserts ASME B18.29.1

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
EG no. 6-40		3,70	3,644	3,818
EG no. 8-36		4,40	4,321	4,498
EG no. 10-32		5,10	4,999	5,184
EG no. 12-28		5,70	5,682	5,809
EG 1/4-28		6,60	6,546	6,721
EG 5/16-24		8,25	8,166	8,352

nominal dia.	gear	core hole (drill) dia.	core dia. female thread	
	per inch	mm	min. mm	max. mm
EG 3/8-24		9,80	9,754	9,931
EG 7/16-20		11,50	11,389	11,585
EG 1/2-20		13,10	12,974	13,172
EG 9/16-18		14,70	14,592	14,798
EG 5/8-18		16,25	16,180	16,386

core hole diameter for thread cutting and thread milling
NPT ANSI B 2.1 Americ. tapered pipe thread, taper 1:16

nominal dia.	gear	core hole dia. cylindr. (A)	core hole dia. conical (B)	incision depth ET	drilling depth BT
	per inch	d_1	D_1	mm	min. mm
1/16-27		6,15	6,39	9,29	10,7
1/8-27		8,40	8,74	9,32	10,8
1/4-18		11,10	11,36	13,52	15,6
3/8-18		14,30	14,80	13,83	16,0
1/2-14		17,90	18,32	18,07	20,8
3/4-14		23,30	23,67	18,55	21,3

nominal dia.	gear	core hole dia. cylindr. (A)	core hole dia. conical (B)	incision depth ET	drilling depth BT
	per inch	d_1	D_1	mm	min. mm
1-11.5		29,00	29,69	22,29	25,6
1 1/4-11.5		37,70	38,45	22,80	26,1
1 1/2-11.5		43,70	44,52	22,80	26,1
2-11.5		55,60	56,56	23,20	26,5
2 1/2-8		66,30	67,62	31,75	36,3
3-8		82,30	83,52	33,74	38,5

recommended drill diameter for thread forming
metric ISO thread DIN 13

nominal dia.	pitch P	drilling dia.	drilling dia.		core dia. female thread 7H*	
	mm	mm	min. mm	max. mm	min. mm	max. mm
M 1	0,25	0,90	0,89	0,92	0,729	0,819
M 1.2	0,25	1,10	1,09	1,12	0,929	1,019
M 1.4	0,30	1,28	1,27	1,30	1,075	1,181
M 1.6	0,35	1,46	1,45	1,48	1,221	1,346
M 1.7	0,35	1,56	1,55	1,58	1,321	1,446
M 1.8	0,35	1,66	1,65	1,68	1,421	1,546
M 2	0,40	1,85	1,84	1,88	1,567	1,679
M 2.2	0,45	2,00	2,01	2,05	1,713	1,838
M 2.5	0,45	2,30	2,28	2,32	2,013	2,138
M 3	0,50	2,80	2,78	2,85	2,459	2,639
M 3.5	0,60	3,25	3,23	3,30	2,850	3,050
M 4	0,70	3,70	3,68	3,76	3,242	3,466
M 4.5	0,75	4,20				
M 5	0,80	4,65	4,62	4,71	4,134	4,384

nominal dia.	pitch P	drilling dia.	drilling dia.		core dia. female thread 7H*	
	mm	mm	min. mm	max. mm	min. mm	max. mm
M 9	1,25	8,40	8,36	8,47	7,647	7,982
M 10	1,50	9,30	9,26	9,38	8,376	8,751
M 11	1,50	10,30	10,26	10,38	9,376	9,751
M 12	1,75	11,20	11,15	11,29	10,106	10,531
M 14	2,00	13,10	13,05	13,20	11,835	12,310
M 16	2,00	15,10	15,05	15,20	13,835	14,310
M 18	2,50	16,90	16,83	17,02	15,294	15,854
M 20	2,50	18,90	18,83	19,02	17,294	17,854
M 22	2,50	20,90	20,83	21,02	19,294	19,854
M 24	3,00	22,70	22,62	22,80	20,752	21,382
M 27	3,00	25,70	25,62	25,80	23,752	24,382
M 30	3,50	28,50	28,40	28,60	26,211	26,921
M 33	3,50	31,50	31,40	31,60	29,211	29,921
M 36	4,00	34,30	34,17	34,40	31,670	32,420

nominal dia.	pitch P	drilling dia.	drilling dia.		core dia. female thread 7H*	
	mm	mm	min. mm	max. mm	min. mm	max. mm
M 6	1,00	5,55	5,52	5,62	4,917	5,217
M 7	1,00	6,55	6,52	6,62	5,917	6,217
M 8	1,25	7,40	7,36	7,47	6,647	6,982

* M 2 to M 2.5 core dia. female thread 6H

nominal dia.	pitch P	drilling dia.	drilling dia.		core dia. female thread 7H*	
	mm	mm	min. mm	max. mm	min. mm	max. mm
M 39	4,00	37,30	37,17	37,40	34,670	35,420
M 42	4,50	40,10	39,95	40,20	37,129	37,979

recommended drill diameter for thread forming
metric ISO fine thread DIN 13

nominal dia. x pitch P	drilling dia.	drilling dia.		core dia. female thread 7H*	
mm	mm	min. mm	max. mm	min. mm	max. mm
M 2.5 x 0.35	2,35	2,35	2,38	2,121	2,221
M 3 x 0.35	2,85	2,85	2,88	2,621	2,721
M 4 x 0.35	3,85	3,85	3,88	3,621	3,721
M 4 x 0.50	3,80	3,78	3,83	3,459	3,639
M 5 x 0.50	4,80	4,78	4,83	4,459	4,639
M 5.5 x 0.50	5,30	5,28	5,33	4,959	5,139
M 6 x 0.75	5,65	5,62	5,70	5,188	5,424
M 7 x 0.75	6,65	6,62	6,70	6,188	6,424
M 8 x 0.75	7,65	7,62	7,70	7,188	7,424
M 8 x 1.00	7,55	7,52	7,62	6,917	7,217
M 9 x 0.75	8,65	8,62	8,70	8,188	8,424
M 9 x 1.00	8,55	8,52	8,62	7,917	8,217
M 10 x 0.75	9,65	9,62	9,70	9,188	9,424
M 10 x 1.00	9,55	9,52	9,62	8,917	9,217
M 10 x 1.25	9,40	9,36	9,47	8,647	8,982
M 11 x 0.75	10,65	10,62	10,70	10,188	10,424
M 11 x 1.00	10,55	10,52	10,62	9,917	10,217
M 12 x 1.00	11,55	11,52	11,62	10,917	11,217
M 12 x 1.25	11,40	11,36	11,47	10,647	10,982
M 12 x 1.50	11,30	11,26	11,38	10,376	10,751
M 14 x 1.00	13,55	13,52	13,62	12,917	13,217
M 14 x 1.25	13,40	13,36	13,47	12,647	12,982

* M 2.5 x 0.35 to M 4 x 0.35 core dia. female thread 6H

nominal dia.	drilling dia.	drilling dia.		core dia. female thread 7H*	
	mm	min. mm	max. mm	min. mm	max. mm
M 14 x 1.50	13,30	13,26	13,38	12,376	12,751
M 15 x 1.00	14,55	14,52	14,62	13,917	14,217
M 15 x 1.50	14,30	14,26	14,38	13,376	13,751
M 16 x 1.00	15,55	15,52	15,62	14,917	15,217
M 16 x 1.50	15,30	15,26	15,38	14,376	14,751
M 17 x 1.00	16,55	16,52	16,62	15,917	16,217
M 17 x 1.50	16,30	16,26	16,38	15,376	15,751
M 18 x 1.00	17,55	17,52	17,62	16,917	17,217
M 18 x 1.50	17,30	17,26	17,38	16,376	16,751
M 18 x 2.00	17,10	17,05	17,20	15,835	16,310
M 20 x 1.00	19,55	19,52	19,62	18,917	19,217
M 20 x 1.50	19,30	19,26	19,38	18,376	19,751
M 24 x 1.00	23,55	23,52	23,62	22,917	23,217
M 24 x 1.50	23,30	23,26	23,38	22,376	22,751
M 24 x 2.00	23,10	23,05	23,20	21,835	22,310
M 27 x 1.50	26,30	26,26	26,38	25,376	25,751
M 30 x 1.50	29,30	29,26	29,38	28,376	28,751
M 33 x 1.50	32,30	32,26	32,38	31,376	31,751
M 36 x 1.50	35,30	35,26	35,38	34,376	34,751
M 39 x 1.50	38,30	38,26	38,38	37,376	37,751
M 42 x 1.50	41,30	41,26	41,38	42,376	42,751

recommended drill diameter for thread forming
UNC thread ASME B1.1

nominal dia.	gear per inch	drilling dia.	drilling dia.		core dia. female thread 2B	
		mm	min. mm	max. mm	min. mm	max. mm
No. 1-64		1,68	1,67	1,70	1,425	1,580
No. 2-56		1,98	1,97	2,01	1,694	1,872
No. 3-48		2,28	2,27	2,32	1,941	2,146
No. 4-40		2,55	2,54	2,59	2,157	2,385
No. 5-40		2,90	2,89	2,94	2,487	2,698
No. 6-32		3,15	3,14	3,19	2,642	2,896
No. 8-32		3,80	3,78	3,82	3,302	3,531
No. 10-24		4,35	4,33	4,39	3,683	3,937
No. 12-24		5,00	4,97	5,03	4,343	4,597
1/4-20		5,75	5,72	5,80	4,978	5,258

nominal dia.	gear per inch	drilling dia.	drilling dia.		core dia. female thread 7H*	
		mm	min. mm	max. mm	min. mm	max. mm
5/16-18		7,30	7,26	7,37	6,401	6,731
3/8-16		8,80	8,77	8,88	7,798	8,153
7/16-14		10,30	10,27	10,37	9,144	9,550
1/2-13		11,80	11,77	11,88	10,592	11,024
9/16-12		13,30	13,28	13,39	11,989	12,446
5/8-11		14,80	14,78	14,90	13,386	13,868
3/4-10		17,90	17,85	17,97	16,307	16,840
7/8-9		21,00	20,95	21,10	19,177	19,761
1-8		24,00	23,95	24,12	21,971	22,606

recommended drill diameter for thread forming
UNF thread ASME B1.1

nominal dia.	gear per inch	drilling dia.	drilling dia.		core dia. female thread 2B	
		mm	min. mm	max. mm	min. mm	max. mm
No. 1-72		1,68	1,67	1,70	1,425	1,580
No. 2-64		1,98	1,97	2,01	1,694	1,872
No. 3-56		2,28	2,27	2,32	1,941	2,146
No. 4-48		2,55	2,54	2,59	2,157	2,385
No. 5-44		2,90	2,89	2,94	2,487	2,698
No. 6-40		3,15	3,14	3,19	2,642	2,896
No. 8-36		3,80	3,78	3,82	3,302	3,531
No. 10-32		4,35	4,33	4,39	3,683	3,937
No. 12-28		5,00	4,97	5,03	4,343	4,597
1/4-28		5,75	5,72	5,80	4,978	5,258

nominal dia.	gear per inch	drilling dia.	drilling dia.		core dia. female thread 7H*	
		mm	min. mm	max. mm	min. mm	max. mm
5/16-24		7,30	7,26	7,37	6,401	6,731
3/8-24		8,80	8,77	8,88	7,798	8,153
7/16-20		10,30	10,27	10,37	9,144	9,550
1/2-20		11,80	11,77	11,88	10,592	11,024
9/16-18		13,30	13,28	13,39	11,989	12,446
5/8-18		14,80	14,78	14,90	13,386	13,868
3/4-16		17,90	17,85	17,97	16,307	16,840
7/8-14		21,00	20,95	21,10	19,177	19,761
1-12		24,00	23,95	24,12	21,971	22,606

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

recommended drill diameter for thread forming
(Whitworth) pipe thread G DIN EN ISO 228-1

nominal dia.	gear	drilling dia.	drilling dia.		core dia. female thread 2B	
	per inch	mm	min. mm	max. mm	min. mm	max. mm
G 1/16	28	7,30	7,28	7,35	6,561	6,843
G 1/8	28	9,30	9,28	9,35	8,566	8,848
G 1/4	19	12,50	12,48	12,55	11,445	11,890
G 3/8	19	16,00	15,98	16,05	14,950	15,395
G 1/2	14	20,00	19,98	20,12	18,631	19,172

nominal dia.	gear	drilling dia.	drilling dia.		core dia. female thread 7H*	
	per inch	mm	min. mm	max. mm	min. mm	max. mm
G 5/8	14	22,00	21,98	22,12	20,587	21,128
G 3/4	14	25,50	25,48	25,62	24,117	24,658
G 7/8	14	29,25	29,23	29,37	27,877	28,418
G 1	11	32,00	31,98	32,15	30,291	30,931
G 11/4	11	40,75	40,70	40,85	38,952	39,592

Sawing process

Sawing is a process of separation involving circular or straight cutting movements to sever or cut semi-finished products or profile material. The material is cut by the cutting teeth of the saw. The resulting chip material is transported out of the kerf between the gaps in the teeth.

The following saw forms are distinguishable:

Circular saws

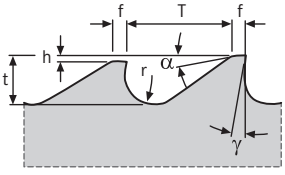


Bandsaws

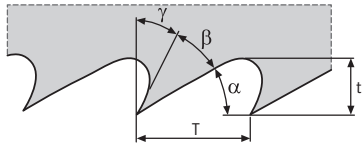


Angle and pitch at saw tooth

The size of the angle is defined by the shape of the saw blade. The clearance angle defines the size of the chip space. As the size of the clearance angle increases, so does the size of the chip space.
The lip angle in turn gives the saw tooth stability. Hard and tough materials therefore require a large lip angle. In general, the lip angle is approximately 50°; the clearance and lip angle together are approx. 90°.



Circular saws



Bandsaws

α clearance angle (°)
β lip angle (°)
γ chip angle (°)
T tooth pitch (mm)
t tooth depth (mm)
h height difference (mm)
f clearance angle chamfer (mm)
r curvature radius (mm)

Cutting materials on metal circular saws

When separating and cutting slots (grooves), the following cutting materials are used.

HSS

HSS metal circular saws can be used in materials up to 1000 N/mm². This cutting material can also be used in materials up to 1300 N/mm² under certain conditions (increased wear). The cutting material has high bending strength and can be used with unstable machine conditions. The cutting speed is relatively low when machining with this cutting material.

HSSE

Metal circular saws made from HSSE cutting material can be used in materials up to 1300 N/mm². The addition of cobalt allows even difficult materials with high toughness or hardness to be processed. This cutting material has a high flexural strength and can be used in unstable machining conditions. The cutting speed can be slightly increased compared to HSS circular saws.

VHM

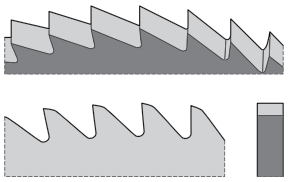
Metal circular saws made of cemented carbide cutting material can be used in all materials. This cutting material allows difficult materials with high toughness or hardness to be processed. The cutting material has a low flexural strength and can only be used in stable machines and clamping conditions. However, the low bending resistance is an advantage in terms of machining accuracy.

Carbide-tipped circular saw blades have a carbide piece soldered onto a steel support. This technology shows its benefits particularly when it comes to machining non-ferrous metals.

Tooth shapes for metal circular saws

When machining with metal circular saw blades, the selection of tooth shape is crucial in the various machining tasks. A distinction is made between the following tooth shapes and their applications:

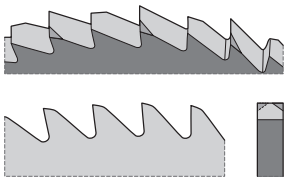
SHAPE A - Metal circular saw blades DIN 1837 A (fine-toothed with angular serration)



Tooth shape A has been developed for working with brittle, short-chipping materials. For this kind of toothing, the chip space is relatively small and can hold only a small volume of chips. The low tooth pitch and low chip volume make the saw blade only suitable for low cutting depths or thin-walled materials.

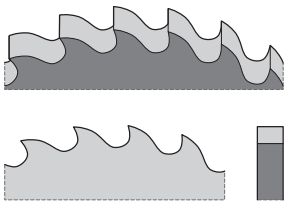
Tooth pitches < 2 are suitable for cutting depths down to 4 mm. Tooth pitches > 2 are suitable for cutting depths greater than 15 mm or Cross-section possible.

SHAPE Aw – Metal circular saw blades DIN 1837 Aw (fine-toothed with alternating toothing)



Tooth shape AW has been developed for cutting of thin-walled profiles with low cut depths. With this tooth shape, the chip spaces are relatively small and only a small volume of chips can be accepted.

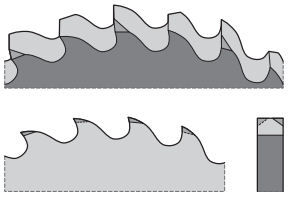
SHAPE B - Metal circular saw blades DIN 1838 B (coarse-toothed with arc serration)



SHAPE Bw - Metal circular saw blades DIN 1838 Bw (coarse-toothed with alternating toothing)

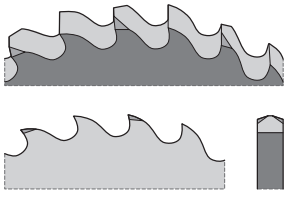
Tooth shape B has been developed for cutting solid material with high cutting depths. For this kind of toothing, the chip space is relatively large and can hold a large volume of chips. It is therefore used universally in numerous applications. The tooth spacing allows 30% greater chip volume. This tooth shape caters to tough as well as soft materials. Depending on the blade thickness, the tooth pitches range from 3.15 to 12.5 mm. Components with cutting depths and diameters up to max. 100 mm can be sawed.

SHAPE Bw - Metal circular saw blades DIN 1838 Bw (coarse-toothed with alternating toothing)



Tooth shape Bw has been developed for cutting solid material with high cutting depths (applications with cutting depths in excess of 5% of the saw blade diameter). This tooth shape produces narrower chips and allows the chip material to expand laterally (heat-induced). This tooth shape caters to tough as well as soft materials. The chips are 1/3 narrower and reduce the cutting forces at the tooth base by 30%. More space is created for the coolant in the area to be cut.

SHAPE C - Metal circular saw blades DIN 1838 C (coarse-toothed with arc serration with pre- and post-cutter = HZ serration)



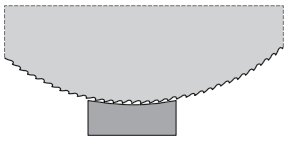
Tooth shape C is used to separate materials. Owing to its chip-separating tooth shape, it works especially well when machining materials of low to medium strength thanks to high cutting performance.

Tooth shape C is best used to produce very deep cuts and with large diameters when cutting workpieces. When creating grooves, a groove caused by the over-height taper tap is created at the cut base. A flat cut base is therefore not achieved. The radius of the taper tap is 0.1–0.3 mm higher than the following tooth.

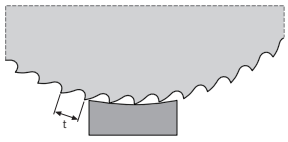
Large saw blades therefore have better guidance and thus more precise cutting.

Number of contact teeth on metal circular saws

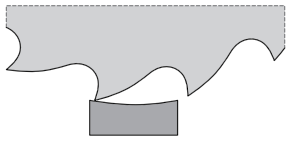
When selecting the number of teeth, it is important that two to three teeth are in use. If too many teeth are in use, the cutting forces are too high and it leads to saw blade breakage. If too few teeth are in use, too much cutting performance is being expected per tooth. The following graphics illustrate the relationship.



Too fine



Correct

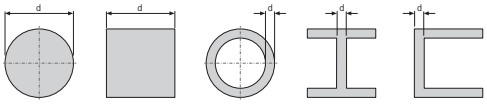


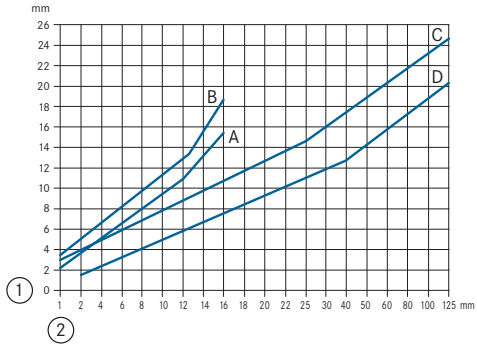
Correct

Tooth pitch selection table for machine saw blades

When selecting the tooth pitch, the cross-section of the workpiece to be machined is the key consideration. The following ratio essentially applies: The smaller the cross-section to be machined, the lower the pitch. As a rule of thumb, 2-3 teeth should always be engaged.
The chart illustrates the ratio:

Material	Pipes / Profiles	Solid material
Steel < 800 Nmm²	B	D
Steel 800 to 1200 N/mm²	C	D
Grey cast iron		D
Copper	B	C
Bronze	B	C
Brass, zinc alloys	A	D
Aluminium alloys	B	C





① Pitch in mm ② Cross-section d in mm

ATORN® Solid carbide metal circular saw blade, finely toothed, type A (DIN 1837)

Up to 1300 N/mm² in thin-walled workpieces and low cutting depths, CNC machines

A | VHM

Application:
for producing saw cuts in thin-walled workpieces and small cutting depths, in steel, stainless steel, cast iron and non-ferrous metals material groups up to a strength of 1300 N/mm².

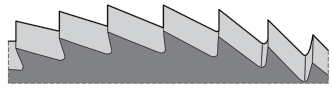
Execution:
- precision-ground metal circular saw blade with tooth shape A, fine-toothed, hollow ground on side

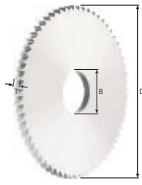
Advantage:
- innovative cutting geometry for very high dimensional accuracy, process reliability and chip removal
- high-quality cutting material for very high service life requirements
- universal use in numerous applications

Technical data:
- Tolerance of cutting edge diameter: j15
- Tolerance of cutting edge thickness: j11
- Tolerance of hole diameter: H6









D (mm)	T (mm)	B (mm)	Tooth shape Z (PCS)	A 14020... Ident. No.	
30	1	8	64	125	●
30	1.2	8	48	127	●
30	2	8	48	135	●
40	0.5	10	80	151	●
40	0.6	10	80	152	●
40	0.8	10	80	154	●
40	1	10	64	156	●
40	2	10	48	166	●
50	0.5	13	100	182	●
50	0.6	13	100	183	●
50	0.8	13	80	185	●
50	1	13	80	187	●
50	1.2	13	80	189	●
50	2	13	64	197	●
63	0.5	16	128	211	●
63	0.6	16	100	212	●

D (mm)	T (mm)	B (mm)	Tooth shape Z (PCS)	A 14020... Ident. No.	
63	0.8	16	100	214	●
63	1	16	100	216	●
63	1.2	16	80	218	●
63	1.6	16	80	223	●
63	2	16	80	227	●
63	2.5	16	64	228	●
80	0.5	22	128	239	●
80	0.8	22	128	242	●
80	1	22	100	244	●
80	2	22	80	254	●
80	2.5	22	80	255	●
100	1	22	128	268	●
100	1.2	22	128	270	●
100	1.6	22	120	274	●
100	2	22	100	278	●

Prod. Gr. 1QA

ATORN® Carbide-tipped circular saw blades

For use in non-ferrous metals

Application:
No. 14009: For separation cuts, mitre cutting, trimming and longitudinal cuts in aluminium, CuZN, plastics and profiles on high-speed machines, whether fed horizontally or from underneath.
No. 14011: For separation cuts, mitre cutting, trimming and longitudinal cuts in aluminium, CuZN, plastics in thin-walled profiles on high-speed machines, fed from above.

Execution:
- **No. 14009:** circular saw blade with trapezoid carbide inserts with positive 5° chip angle, taper tap and third tap, free-cutting
- **No. 14011:** circular saw blade with trapezoid carbide plates with negative 6° chip angle, taper tap and third tap, free-cutting

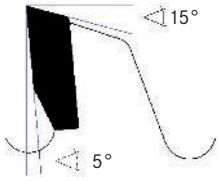
Advantage:
- innovative cutting geometry with large chip space plus taper tap and third tap ensures cutting distribution and increases cutting performance
- top-quality cemented carbide for extremely demanding requirements in terms of service life
- **No. 14009:** special geometry ensures smooth and burr-free cuts



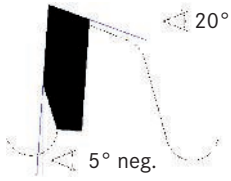
No. 14009



No. 14011



No. 14009



No. 14011

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
14009						800	400	450	350	300	200	400							
14011						800	400	450	350	300	200	400							

Cutting edge Ø (mm)	Bore Ø (mm)	Teeth type	Thickness of cutting edge (mm)	Teeth spacing (mm)	Side holes	Z	Cutting edge geometry Type	Positive 14009... Ident. No.		Negative 14011... Ident. No.	
250	30	Fine	3.2	9.8	2/10/60 | 2/11/63 | 2/12/64 | 2/7/42	80	-	010	●	210	●
250	32	Fine	3.2	9.8	2/10/60 | 2/11/63 | 2/12/64	80	Kaltenbach | Berg and Schmid	020	●	220	●
250	40	Medium	3.2	13.1	2/9/55 | 4/12/64	60	Eisele | Trennjäger | Häberle	030	●	-	-
300	30	Fine	3.2	9.8	2/10/60 | 2/11/63 | 2/12/64	96	-	040	●	240	●
350	30	Fine	3.2	9.8	2/10/60 | 2/11/63 | 2/12/64	108	-	-	-	250	●
350	40	Medium	3.2	13.1	2/9/55 | 4/12/64	84	Eisele | Trennjäger | Häberle	060	●	260	●
400	30	Medium	3.2	11.6	2/10/60 | 2/11/63 | 2/12/64	108	-	-	-	270	●

Prod. Gr. 1QA

Cutting materials for bandsaw blades

Three cutting materials are available for cutting components with bandsaw blades. A distinction is made between the following cutting materials:

Tool steel bandsaws

Tool steel bandsaws are made from a single piece of carbon steel and are sufficient for numerous applications with low requirements on service life and the material to be processed. A distinction is made between two variants: Either the backing and toothed wheel are hardened or the backing is soft and the tips of the teeth are hardened.

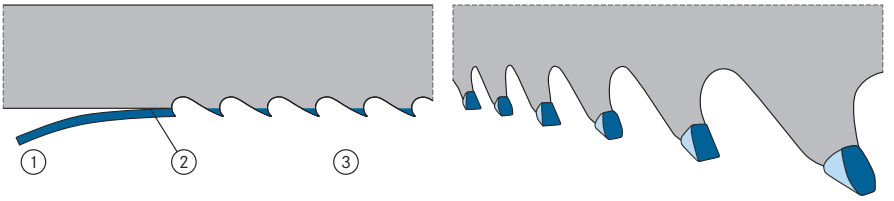
Bi-metal bandsaws (M42)

Bi-metal bandsaws are made of a flexible band backing (spring steel) with hardened tooth tips (HSS) welded onto the spring steel via an electron beam process. The majority of bandsaw blades are produced through this manufacturing process. Higher cutting speeds can be achieved compared to tool steel bandsaws. The high degree of hardness facilitates the processing of materials that are challenging or difficult to machine. Bi-metal bandsaws (M42) can be used on all machines and for all machine conditions.

① Extremely hard blade made from high-speed steel
② Welding of spring steel with HSS through electron welding process
③ Precision-milled teeth

Carbide-tipped bandsaws (VHM)

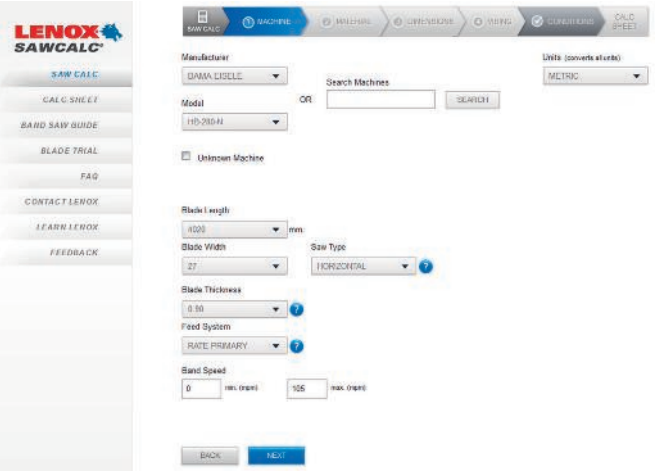
The teeth are milled/ground into a band backing (carrier material), which consists of a high-strength spring steel alloy. Using a patented welding process, the cemented carbide is attached to the teeth. The tips are ground in on the side, the front and top edge in order to produce the tooth shape. Using carbide-tipped bandsaws, the highest cutting speeds can be used and the widest range of materials catered to. When selecting carbide-tipped bandsaws, the machine must be checked for proper suitability. The machine must have a high degree of stability (minimal vibration) and must have free movement. Excessive vibration or impacts destroy the cemented carbide and cause fractures.



Determining the length of a bandsaw blade

The length of the bandsaw blade depends on the machine. Each machine type has its own specific band length. Even slight deviations may produce undesirable results. Please check with the manufacturer of your sawing machine to determine your band length.

Alternatively, you can determine the band length by manufacturer:
http://www.sawcalc.com/



Selecting the bandsaw type

The following selection chart shows all possible types of bandsaw in the different cutting materials and their application. Select a bandsaw type which suits your application:

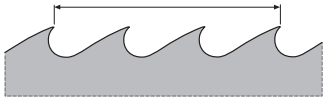
Bi-metal machining types	Types	P <700 N/mm²	P <1000 N/mm²	P <1300 N/mm²	M <1100 N/mm²	K 310 N/mm²	N <1000 N/mm²	S <1400 N/mm²	H 55–63 N/mm²
Universal									
	CLASSIC PRO	●	●	○	○	●	●		
	ATORN type UN	●	●	○	○	●	●		
	CLASSIC	●	●	○	○	●	●		
	DIEMASTER 2	●	●	○	○	●	●		
Full cut									
	CONTESTOR GT	○	●	●	●	○	○	●	
	CONTESTOR XL	○	●	●	●	○	○	●	
	QXP	●	●	●	●	●	●	○	
	CLASSIC PRO	●	●	○	○	●	●		

Profiles and bundles									
	ARMOR Rx	●	●						
	Rx+	●							
	CLASSIC PRO	●	●	○	○	●	●		
Cemented carbide machining types	**Types**	**P** <700 N/mm²	**P** <1000 N/mm²	**P** <1300 N/mm²	**M** <1100 N/mm²	**K** 310 N/mm²	**N** <1000 N/mm²	**S** <1400 N/mm²	**H** 55–63 N/mm²
Full cut									
	ARMOR CT Black	●	●	●	●	●	●	○	○
	MAX CT	●	●	●	●	●	●	●	○
	TRI-TECH CT	○	●	●	●	●	○	●	○
	VERSA PRO	●	●	●	●	●	●	●	○
	TRI_MASTER	●	●	●	○	●	●	○	○
	CAST MASTER						●		
	CAST MASTER XL						●		
	HRC								●
	MASTER-GRIT								●

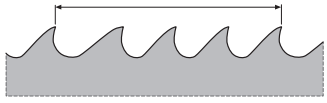
Tooth pitch variants

The contact length of the saw band in the workpiece is relevant to the selection of tooth pitch. A distinction is made between:

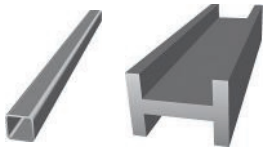
Constant tooth pitch
for example 3 teeth per inch



Variable tooth pitch
for example 2/3 teeth per inch



Selection of the number of teeth

Square material	Teeth per inch	in mm	Round material	Teeth per inch	Ø in mm	Tubes and sections	Teeth per inch	Wall thicknesses in mm
	**14/18**	5		**14/18**	5–6		**14/18**	1–2
	10/14	5–8		**10/14**	6–10		**10/14**	2–3
	8/12	8–12		**8/12**	10–15		**8/12**	3–4
	6/10	12–16		**6/10**	15–20		**6/10**	4–5
	5/8	16–25		**5/8**	20–30		**5/8**	5–7
	4/6	25–50		**4/6**	30–75		**4/6**	7–15
	3/4	50–100		**3/4**	75–150		**3/4**	15–28
	2/3	100–150		**2/3**	150–250		**2/3**	28–50
	1.4/2.0	150–380		**1.4/2.0**	250–480		**1.4/2.0**	
	1.0/1.3	380–800		**1.0/1.3**	480–900		**1.0/1.3**	
	0.7/1.0	800–1200		**0.7/1.0**	900–1200		**0.7/1.0**	

ATORN® Bandsaw blades, welded, type Uni bi-metal

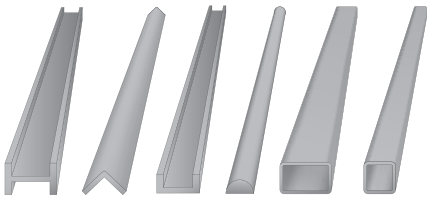
Separation cuts in solid material and profiles in steel, (stainless steel), cast iron, non-ferrous metals

Application:
For producing separation cuts in profiles, supports and solid material in steel and non-ferrous metals material groups, up to a strength of 1300 N/mm² in single-part production and series production.

Execution:
- Precision-made machine saw band as a standard length with M42 HSS tooth tips (67–69 HRC) and universal tooth geometry

Advantage:
- Universal use both for full cuts and interrupted cuts for broad range of materials
- Innovative, positive tooth geometry and offset for exact and straight cuts
- Very smooth running and vibrations minimised





Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
14044	80	40	25	20	20	100	100	65	65	40	40			60	20				

Width x thickness		20 x 0.9 mm		27 x 0.9 mm		34 x 1.1 mm	
L (mm)	Teeth per inch	14044... Ident. No.		14044... Ident. No.		14044... Ident. No.	
2375	6/10	045	●	-	-	-	-
2375	10/14	055	●	-	-	-	-
2450	4/6	-	-	075	●	-	-
2450	5/8	-	-	080	●	-	-
2450	6/10	-	-	085	●	-	-
2480	4/6	-	-	096	●	-	-

Width x thickness		20 x 0.9 mm		27 x 0.9 mm		34 x 1.1 mm	
L (mm)	Teeth per inch	14044... Ident. No.		14044... Ident. No.		14044... Ident. No.	
2480	5/8	-	-	097	●	-	-
2480	6/10	-	-	098	●	-	-
2710	4/6	-	-	100	●	-	-
2710	5/8	-	-	103	●	-	-
2710	6/10	-	-	105	●	-	-
2750	4/6	-	-	120	●	-	-

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Width x thickness		20 x 0.9 mm		27 x 0.9 mm		34 x 1.1 mm	
L (mm)	Teeth per inch	14044... Ident. No.		14044... Ident. No.		14044... Ident. No.	
2750	5/8	-	-	125	●	-	-
2750	6/10	-	-	135	●	-	-
2835	3/4	-	-	195	●	-	-
2835	4/6	-	-	200	●	-	-
2835	5/8	-	-	201	●	-	-
2890	3/4	-	-	210	●	-	-
2890	4/6	-	-	215	●	-	-
2890	5/8	-	-	218	●	-	-
2890	6/10	-	-	220	●	-	-
2910	3/4	-	-	224	●	-	-
2910	4/6	-	-	225	●	-	-
2910	5/8	-	-	226	●	-	-
2910	6/10	-	-	228	●	-	-
2950	3/4	-	-	253	●	-	-
2950	4/6	-	-	255	●	-	-
2950	5/8	-	-	260	●	-	-
2950	6/10	-	-	262	●	-	-
3000	3/4	-	-	285	●	-	-
3000	4/6	-	-	286	●	-	-
3000	5/8	-	-	287	●	-	-
3150	3/4	-	-	290	●	-	-
3150	4/6	-	-	293	●	-	-
3150	5/8	-	-	295	●	-	-
3150	6/10	-	-	305	●	-	-
3280	3/4	-	-	320	●	-	-
3280	4/6	-	-	325	●	-	-
3280	5/8	-	-	326	●	-	-
3280	6/10	-	-	330	●	-	-
3320	3/4	-	-	331	●	-	-
3320	5/8	-	-	332	●	-	-

Width x thickness		20 x 0.9 mm		27 x 0.9 mm		34 x 1.1 mm	
L (mm)	Teeth per inch	14044... Ident. No.		14044... Ident. No.		14044... Ident. No.	
3320	6/10	-	-	333	●	-	-
3370	3/4	-	-	337	●	-	-
3370	4/6	-	-	338	●	-	-
3370	5/8	-	-	340	●	-	-
3370	6/10	-	-	341	●	-	-
3660	3/4	-	-	345	●	-	-
3660	4/6	-	-	350	●	-	-
3660	5/8	-	-	355	●	-	-
3660	6/10	-	-	360	●	-	-
3770	3/4	-	-	375	●	-	-
3770	4/6	-	-	380	●	-	-
3770	5/8	-	-	382	●	-	-
3770	6/10	-	-	385	●	-	-
3800	3/4	-	-	390	●	-	-
3800	4/6	-	-	395	●	-	-
3800	5/8	-	-	396	●	-	-
3830	3/4	-	-	415	●	-	-
3830	4/6	-	-	417	●	-	-
3830	5/8	-	-	420	●	-	-
3830	6/10	-	-	430	●	-	-
4100	2/3	-	-	-	-	480	●
4100	3/4	-	-	-	-	485	●
4100	4/6	-	-	-	-	490	●
4150	3/4	-	-	450	●	510	●
4150	4/6	-	-	455	●	515	●
4150	5/8	-	-	456	●	-	-
4150	2/3	-	-	-	-	509	●
4640	2/3	-	-	-	-	520	●
4640	3/4	-	-	-	-	525	●

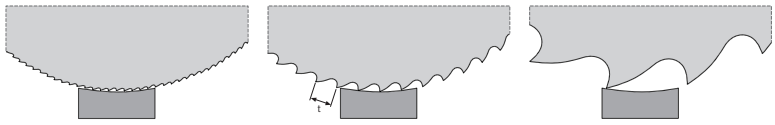
Prod. Gr. 1DJ



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Work regulations for metal circular saw blades

- Use the correct tooth shape and tooth pitch for the different materials and applications.
- For pipe diameters and contact lengths smaller than 50 mm, use tooth shape A (finely toothed).
- Saw blades must be sawn-in due to the sharpness of the teeth. When doing so, the cutting speed must be reduced by up to 50% until the teeth have lost their initial sharpness.
- Use coolants to avoid overheating and ensure chips are removed.
- Clamp the material at as short a distance as possible to avoid vibrations.
- The cutting speed and feed rate must be adjusted to match the material and geometry (see cutting value table).



Too fine | Correct | Too coarse

Guide to eliminating faults with metal saw blades

Wear on teeth

- Larger tooth pitch if the saw blade clogs with chips
- Improve coolant feed or use correct coolant

Teeth break off

- Improve poor chip removal
- Use appropriate tooth pitch
- Optimise workpiece clamping

Tool breakage

- Re-sharpen tool
- Reduce cutting speed

Clogging and material adhesion to saw blade

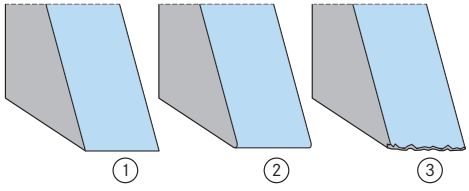
- Optimise feed
- Optimise saw blade shape
- Coolant optimisation

Retraction of bandsaw blades

A new saw band has very sharp tooth tips due to the manufacturing method. In order to withstand the cutting pressure when band sawing, the tooth tips should be circularly ground. Without this fine grinding step, the high cutting pressure will lead to microscopic damage to the tooth tips and consequently to a shorter service life of the entire saw band. Saw blades should be retracted to significantly increase the service life. The following steps describe proper retraction:

- The correct band speed must be used for the material to be cut.
- Reduction of the feed speed or feed power of the saw to reach a cutting speed of 20% to 50% of the normal cutting speed. Mild steels require a greater reduction in velocity than materials that are more difficult to machine.
- The first cut should be initiated at reduced speed with care taken to ensure the teeth form a shaving. As soon as the blade is fully submerged in the workpiece, the feed can be increased slightly.
- The feed speed should be successively increased across several cuts until the normal cutting speed is reached (total cutting area 60 to 118 inch²/150 to 300 cm²)

It is important to note that slight adjustments must be made to the band speed during insertion in the case of excessive noise or vibration. As soon as the saw blade has been retracted, the recommended band speed should be used.



① New saw band ② With retraction ③ Without retraction

Rules for working with metal circular saws

- Where contact length is less than 50 mm or in the case of thin-walled pipes and profiles, only tooth pitches with 0° chip angle may be used.
- The lifespan of a saw blade depends on controlled sawing-in: Reduce cutting pressure (feed) by 50% for the first cuts, then increase feed to the optimal value after approx. 300 cm surface has been cut.
- As a general rule, the cutting speed is determined by the strength, type and cross-section of the sawn material. The higher the strength, the lower the speed that must be selected. A higher speed can be used with smaller cross sections than with larger cross sections. The chip shape indicates whether the speed and feed rate are selected correctly. The chips should be loosely coiled. If the chips are thin, the feed should be increased; thick chips are a sign of the speed being too high.
- The material should be clamped in order to help the saw blade work with as little vibration as possible.
- Use of coolant prevents overheating and aids faster chip removal.
- Use of the highest permitted band width for the machine ensures sufficient stability at higher feed forces. When cutting curves, the blade width depends on the smallest radius which is to be cut (see cutting value table).

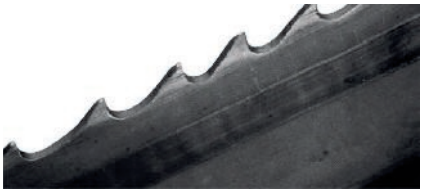
Radius (mm)	3	8	15	30	38	65	100	140
Band width (mm)	3	5	6	8	10	13	16	20

Troubleshooting guidelines for bandsaw blades



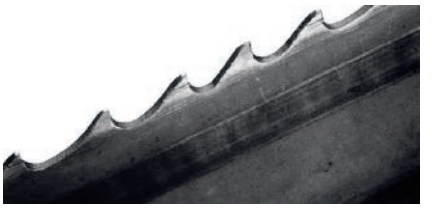
Wear on teeth

- Larger tooth pitch in the case that saw blade clogs with chips
- Improve coolant supply or use correct coolant
- Change band or feed speed
- Saw blade was not retracted



Wear on both sides of the teeth

- Check side guide and, if necessary, adjust band width



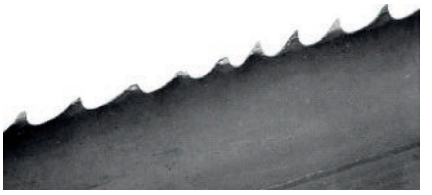
Wear on one side of the teeth

- Drive wheels
- Side guides



Discoloured tooth tips due to excessive frictional heat

- Improve coolant supply or use correct coolant
- Change band or feed speed



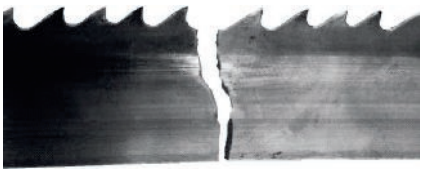
Teeth breaking away

- Improve chip clearance
- Use appropriate tooth pitch
- Optimise workpiece clamping



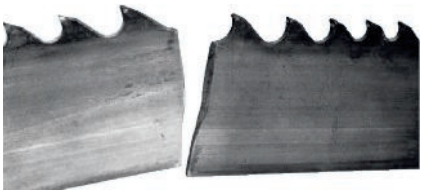
Chips welded on tooth tips (cold welding)

- Improve coolant supply or use correct coolant
- Change band or feed speed
- Chip brush - improve chip clearance



Breakage of carrier material or cracks originating from tooth spaces

- Change feed speed
- Adjust pre-clamping/band clamping



Breakage of carrier material or cracks originating from band backing

- Change feed speed
- Reserve guide/band guide
- Adjust pre-clamping/band clamping



Breakage of welding seam

- Change feed speed
- Reserve/band/side guide
- Adjust pre-clamping/belt clamping



Jamming and material adhesion on the saw blade

- Optimization of the feed
- Optimization of the saw blade form
- Coolant optimization

Tool break

- Re-sharpen tool
- Reduce cutting speed



Used belt is “short” on the cutting edge

- Change feed speed
- Drive wheels
- Side guides



Broken belt exhibits distortion over the belt length

- Change feed speed
- Side/reserve and band guide
- Adjust pre-clamping/band clamping
- Drive wheels

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

formula collection

formulas

abbreviation	description	unit	formulas
N	revolutions per min	rpm	$n = \frac{v_c \cdot 1000}{\pi \cdot d}$
v_c	cutting speed	m/min	$v_c = \frac{d \cdot \pi \cdot n}{1000}$
v_f	feed per min	mm	$v_f = n \cdot z \cdot f_z$
f_z	feed per tooth	mm	$f_z = \frac{v_f}{n \cdot z}$
f	feed per revolution	mm	$f = \frac{v_f}{n}$
Q	material removal rate	cm^3/min	$Q = \frac{a_p \cdot a_e \cdot v_f}{1000}$
th	main period	min	$t_h = \frac{L \cdot i}{v_f}$
hm	central clamping thickness	mm	$h_m = f_z \cdot \sqrt{\frac{a_e}{d}}$
Rth	roughness depth	mm	$R_{th} = \frac{d}{2} \cdot \sqrt{\frac{d^2 - br^2}{4}}$
br	line feed	mm	$b_r = 2 \cdot \sqrt{R_{th}(d - R_{th})}$

explanation of terms

ae	cutting width	mm
ap	cutting depth	mm
d	tool diameter	mm
L	total cutting path	mm
i	number of cuts	
z	number of cutting edges	

effective diameter for milling tools with radius

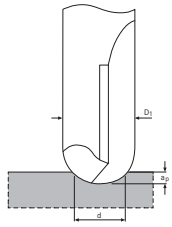
in order to make optimal use of our tools, it is particularly important to determine speed correctly. this is based on the effective tool diameter. for cutting depths ap <0.5 x D, the effective diameter which is actually in contact must be used for the calculation. for increased service life, we recommend processing with tilted spindle. the angle of attack must be taken into account in the calculation.

example:
with a ball cutter of diameter 6 mm, an infeed in ap of 0.1 mm, no working angle, an effective diameter of 1.54 mm results. to achieve a cutting speed of Vc = 200 m/min, a rotation speed of n = 41,300 rpm is needed, not 10,616 rpm (Ø 6 mm).

$d = 2 \cdot \sqrt{a_p(D_1 - a_p)}$
$d = 2 \cdot \sqrt{0{,}1(6 - 0{,}1)}$
$d = 1{,}54$ mm

radius cutter

no working angle

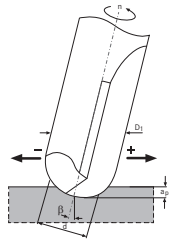


$$d = 2 \cdot \sqrt{a_p(D_1 - a_p)}$$

ap = axial infeed
D1 = cutter diameter
d = effective diameter

Ø	radius	cutting depth (ap) in mm											
		0,05	0,1	0,15	0,2	0,25	0,3	0,5	1	1,5	2	2,5	3
0.3	0,15	0,224	0,283	0,3	0,283	0,224							
0.4	0,2	0,265	0,346	0,387	0,4	0,387	0,346						
0.5	0,25	0,3	0,4	0,458	0,49	0,5	0,49						
0.6	0,3	0,332	0,447	0,52	0,566	0,592	0,6						
0.8	0,4	0,387	0,529	0,624	0,693	0,742	0,775						
1	0,5	0,436	0,6	0,714	0,8	0,866	0,917						
1.5	0,75	0,539	0,748	0,9	1,02	1,118	1,2						
2	1	0,624	0,872	1,054	1,2	1,323	1,428	1,732					
2.5	1,25	0,7	0,98	1,187	1,356	1,5	1,625	2	2,449				
3	1,5	0,768	1,077	1,308	1,497	1,658	1,8	2,236	2,8828	3			
4	2	0,889	1,249	1,52	1,744	1,936	2,107	2,646	3,464	3,873	4		
5	2,5	0,995	1,4	1,706	1,96	2,179	2,375	3	4	4,583	4,899	5	
6	3	1,091	1,536	1,873	2,154	2,398	2,615	3,317	4,472	5,196	5,657	5,916	
7	3,5	1,179	1,661	2,027	2,332	2,598	2,835	3,606	4,899	5,745	6,325	6,708	
8	4	1,261	1,778	2,17	2,498	2,784	3,04	3,873	5,292	6,245	6,928	7,416	
9	4,5	1,338	1,887	2,304	2,653	2,958	3,231	4,123	5,657	6,708	7,483	8,062	
10	5	1,411	1,99	2,431	2,8	3,122	3,412	4,359	6	7,141	8	8,66	
11	5,5	1,48	2,088	2,551	2,939	3,279	3,583	4,583	6,325	7,55	8,485	9,22	
12	6	1,546	2,182	2,666	3,072	3,428	3,747	4,796	6,633	7,937	8,944	9,747	
14	7	–	2,358	–	3,323	3,708	4,055	5,196	7,211	8,66	9,798	10,724	11,489
16	8	–	2,522	–	3,555	3,969	4,341	5,568	7,746	9,327	10,583	11,619	12,49
20	10	–	2,821	–	3,98	4,444	4,862	6,245	8,718	10,536	12	13,229	14,283
25	12,5	–	3,156	–	4,454	4,975	5,444	7	9,798	11,874	13, 565	15	16,248
30	15	–	3,458	–	4,883	5,454	5,97	7,681	10,77	13,077	14,967	16,583	18
32	18	–	3,572	–	5,044	5,635	6,168	7,937	11,136	13,528	15,492	17,176	18,655
40	20	–	3,995	–	5,643	6,305	6,902	8,888	12,49	15,199	17,436	19,365	21,071

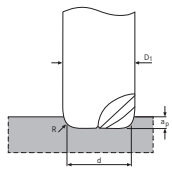
with angle of attack



$$d = D_1 \cdot \sin\left[\beta \pm \arccos\left(\frac{D_1 - 2a_p}{D_1}\right)\right]$$

ap = axial infeed
D1 = cutter diameter
d = effective diameter
β = angle of attack

torus milling cutter

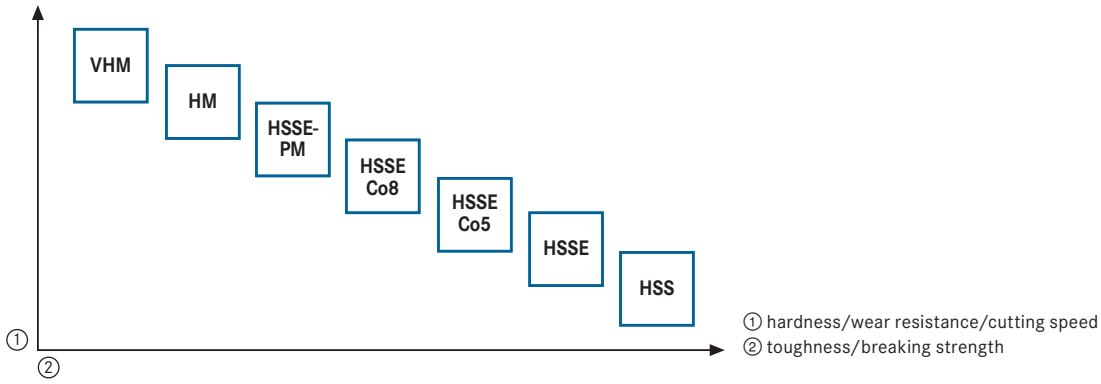


$$d = D - 2R + 2\sqrt{a_p(2R - a_p)}$$

ap = axial infeed
D1 = cutter diameter
d = effective diameter
R = corner radius

milling tool cutting materials

the cutting materials are those which form the cutting part of a metal cutting tool. cutting materials significantly influence the profitability and process reliability of machining processes. there will be a cutting material particularly suited to nearly every application. the following breakdown shows the most common cutting materials for milling, depending on the application:



VHM

SC – solid carbide

solid carbides are sintered materials and these are usually manufactured from 88–94 % tungsten carbide (WC) and 6–12 % cobalt. carbides are less tough than high-speed steels (HSS/E)

- cutting material for applications up to 70 HRC
- high wear resistance, heat resistance and hardness
- excellent temperature resistance, thus higher cutting speeds

HM

HM – cemented carbide tipped

cutting plates are made of cemented carbide on a basic body made of high speed steel. this combines the bending strength of HSS with wear resistance of solid carbide.

- higher elasticity like solid carbide
- high cutting speed
- for wear properties, see solid carbide

HSSE-PM

HSSE PM – powder metal

these are sintered high-speed steels. they combine the advantages of HSSE and solid carbide. increased fracture and fatigue strength through evenly distributed carbides, no metallurgical defects. the hardness of PM lies between 64 and 67 HRC.

- problem solver for e. g. vibration
- medium to high cutting speeds are possible
- high elasticity and cutting speed

HSSE Co5

HSSE/CO5/CO8 - high-speed steel cobalt content approx. 5 % or 8 %

high-speed steel with a cobalt content of approx. 5–8 %. HSSE allows higher processing temperatures than HSS, increased cutting speeds are possible. the hardness of HSS-E is between 64–66 HRC (CO5) and 65–67 HRC (CO8).

- very high elasticity
- low to medium cutting speeds
- rising heat and wear resistance with increasing cobalt content

HSS

HSS – high-speed steel

high-speed steel excels through being widely available and versatile in application. compared to cemented carbide, HSS has a lower hardness (62–64 HRC), but higher bending strength.

- lower cutting speed compared to cemented carbide
- lower wear resistance compared to cemented carbide
- lower hot and bending strength
- cooling required

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

high-performance coatings for milling tools

coatings act as an insulation, they form a protective layer between the workpiece and the milling tool. they protect the cemented carbide against e. g. heat or abrasive wear. the hard layer increases the surface hardness of the tool, for example, and significantly reduces the friction coefficient compared to uncoated cemented carbide. other properties may be:

- higher heat resistance
- higher cutting speeds and feed rates
- higher capability for dry machining
- longer service life

titanium aluminium nitride

universal, particularly thermally and chemically stable layer for high-performance machining with high cutting speed.

- Vickers hardness: 3200 HV
- friction coefficient of steel: 0.55
- temperature resistance: 700–800 °C
- colour: dark blue grey
- layer structure: monolayer
- coating process: PVD

TiAlN



aluminium titanium nitride

high-performance hard material layers with high aluminium content and exceptional properties such as temperature resistance and hardness.

- Vickers hardness: 3600 HV
- friction coefficient of steel: 0.5
- temperature resistance: 850–950 °C
- colour: dark blue grey
- layer structure: multi-layer
- coating process: PVD

AlTiN



titanium carbon nitride

the high level of hardness and wear resistance exhibited by the TiCN layer mean it is used for materials which are difficult to machine.

- Vickers hardness: 3500 HV
- friction coefficient of steel: 0.2
- temperature resistance: 400 °C
- colour: blue grey (anthracite)
- layer structure: multi-layer
- coating process: PVD

TiCN



titanium silicon nitride

special high-performance coating, particularly suitable for hard machining up to 68 HRC. also good for steel processing.

- Vickers hardness: 3800 HV
- friction coefficient of steel: 0.4
- temperature resistance: 1100-1300 °C
- colour: blue grey
- layer structure: multi-layer
- coating process: PVD

TiSiN



zirconium carbonitride

titanium-free special coating for milling non-ferrous metals up to 12 % silicone. reduced tendency towards built-up edge.

- Vickers hardness: 2500 HV
- friction coefficient of steel: 0.4
- temperature resistance: 600 °C
- colour: bright yellow-gold
- layer structure: multi-layer
- coating process: PVD

CALIDA Z



ULTRA

universal, extremely hard and temperature-resistant TiAlN-based layer. dry processing and high feed rates possible.

- Vickers hardness: 3800 HV
- friction coefficient of steel: 0.6
- temperature resistance: 1100 °C
- colour: aubergine
- layer structure: multi-layer
- coating process: PVD

ULTRA



ULTRA N (non-ferrous metals)

special ZrCN-based coating for high-performance processing of non-ferrous metals. low-friction and wear-resistant.

- Vickers hardness: 3100 HV
- friction coefficient of steel: 0.5
- temperature resistance: 600 °C
- colour: dark yellow-gold
- layer structure: multi-layer
- coating process: PVD

ULTRA N



ULTRA-DC (diamond coated)

diamond coating for machining graphite. excels through extreme hardness and abrasion resistance as well as high chemical resistance.

- Vickers hardness: 10000 HV
- friction coefficient of steel: 0.2
- temperature resistance: 600 °C
- colour: grey
- layer structure: multi-layer
- coating process: CVD

ULTRA DC



ULTRA-M (stainless steel)

special multi-layer material on TiAlN/AlCrN base for high-performance machining of highly heat-resistant and high-alloy materials.

- Vickers hardness: 3200 HV
- friction coefficient of steel: 0.35
- temperature resistance: 1100 °C
- colour: bright grey
- layer structure: multi-layer
- coating process: PVD

ULTRA M



ULTRA-MS (stainless steel/special alloys)

extremely hard and temperature-resistant coating on AlCrN base for machining difficult-to-machine materials.

- Vickers hardness: 3200 HV
- friction coefficient of steel: 0.35
- temperature resistance: 1100 °C
- colour: blue grey
- layer structure: monolayer
- coating process: PVD

ULTRA MS



Clamping device recommendation for solid carbide milling



	Standard collet chuck	precision collet chuck	Shrink-fit chucks	Hydro expansion chuck	Surface chuck	Power chucks
						
Holding torques	○	◉	◉	◉	●	●
concentricity	◉	●	●	●	○	●
Vibration-reducing	◉	◉	○	●	○	●
Speed/balancing quality	◉	●	●	●	○	◉
internal cooling	Yes	Yes	Yes	Yes	Yes	Yes
Temperature resistance	◉	◉	●	○	●	●
Overall rating	**Well suited**	**Well suited**	**Highly suitable**	**Highly suitable**	**Well suited**	**Highly suitable**

● = very well suited ◉ = suitable ○ = limited suitability

milling troubleshooting

problem/error	solution/measure
poor surface quality	▪ reduce feed rate ▪ reduce cutting depth ▪ increase cutting speed ▪ optimise tool and workpiece clamping ▪ increase number of teeth
vibration/chatter	▪ reduce cutting speed ▪ synchronous milling ▪ optimise coolant feed ▪ reduce cutting depth ▪ optimise tool and workpiece clamping
chip jamming	▪ reduce feed rate ▪ reduce cutting depth ▪ reduce number of teeth ▪ optimise coolant feed
cutting edge breakout	▪ reduce feed rate ▪ increase cutting speed ▪ optimise tool and workpiece clamping
cutting edge wear	▪ increase feed rate ▪ reduce cutting speed
built-up edges	▪ increase feed ▪ increase cutting speed ▪ optimise coolant feed ▪ reduce cutting depth
miller breakage	▪ reduce feed rate ▪ reduce cutting depth ▪ increase cutting speed ▪ optimise tool and workpiece clamping

hardness comparison table according to DIN 50150

conversion between hardness values is fundamentally inaccurate. therefore, a conversion should be carried out only if the prescribed test procedure cannot be applied.
the conversion table is only valid for unalloyed, low-alloy steels and cast steel in hot-formed, heat-treated condition. for high-alloy steels and strain-hardened steels, deviations are to be expected.

tensile strength R_M N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
255	80	76	
270	85	80,7	
285	90	85,5	
305	95	90,2	
320	100	95	
335	105	99,8	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	156	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	20,3
785	245	233	21,3
800	250	238	22,2
820	255	242	23,1
835	260	247	24
850	265	252	24,8
865	270	257	25,6
880	275	261	26,4
900	280	266	27,1
915	285	271	27,8
930	290	276	28,5
950	295	280	29,2
965	300	285	29,8
995	310	295	31
1030	320	304	32,2
1060	330	314	33,3
1095	340	323	34,4

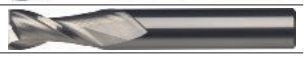
tensile strength R_M N/mm²	Vickers hardness HV	Brinell hardness HB	Rockwell hardness HRC
1125	350	333	35,5
1155	360	342	36,6
1190	370	352	37,7
1220	380	361	38,8
1255	390	371	39,8
1290	400	380	40,8
1320	410	390	41,8
1350	420	399	42,7
1385	430	409	43,6
1420	440	418	44,5
1455	450	428	45,3
1485	460	437	46,1
1520	470	447	46,9
1555	480	-456	47,7
1595	490	-466	48,4
1630	500	-475	49,1
1665	510	-485	49,8
1700	520	-494	50,5
1740	530	-504	51,1
1775	540	-513	51,7
1810	550	-523	52,3
1845	560	-532	53
1880	570	-542	53,6
1920	580	-551	54,1
1955	590	-561	54,7
1995	600	-570	55,2
2030	610	-580	55,7
2070	620	-589	56,3
2105	630	-599	56,8
2145	640	-608	57,3
2180	650	-618	57,8
	660		58,3
	670		58,8
	680		59,2
	690		59,7
	700		60,1
	720		61
	740		61,8
	760		62,5
	780		63,3
	800		64
	820		64,7
	840		65,3
	860		65,9
	880		66,4
	900		67
	920		67,5
	940		68

Vickers hardness	HV		with diamond pyramid	diamond pyramid 136°, test force F ≥ 98 N
Brinell hardness calculated with: HB = 0.95 x HV	HB		with steel ball	0.102 x F/D2 = 30 N/mm2 F = test forces in N, D = taper diameter in mm
Rockwell hardness C	HRC		with diamond cone	diamond cone 120°, total test force 1471 ± 9 N

Solid carbide profiling and special cutter

		Cutting material	Type	Surface	P	M	N	K	S	H	
16564	Solid carbide graver Pre-profiled	VHM			●	○	●	●	○		
16521	Cemented carbide keyway cutter	Carbide	N		●	○	○	●	○		
16525	Cemented carbide T-groove cutter	Carbide	N		●	○	○	●	○		
16530	Cemented carbide angular milling cutter	Carbide			●	○	○	●	○		
16711	Solid carbide quarter circle milling cutter Concave	VHM	N		●	●	●	●	○		
16711	Solid carbide quarter circle milling cutter Concave	VHM	N	TiAlN	●	●	●	●	○		
16704	Solid carbide chamfer cutter 2 cutting edges, uncoated	VHM	N		●	●	●	●	○		
16705	Solid carbide chamfer cutter 2 cutting edges, uncoated	VHM	N		●	●	●	●	○		
16706	Solid carbide chamfer cutter 2 cutting edges, uncoated	VHM	N		●	●	●	●	○		

universal machining – 2 cutters

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16733	2	W	TiAlN	HB		●	●				
16727	2	N		HB	●	●	●	●	○		
16728	2	N	ULTRA	HB	●	●	●	●	○		
16717	2	N	TiAlN	HB	●	●	●	●	○		
16713	2	N		HA	●	●	●	●	○		
16725	2	N		HA	●	●	●	●	○		
16750	2	N		HA parallel shank	●	●	●	●	○		

universal machining – 3 cutters

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16760	3	N		HB	●	●	●	●	○		
16763	3	N	ULTRA	HB	●	●	●	●	○		
16770	3	W		HB	●	●	●	○	○		
16771	3	W	ULTRA	HB	●	●	●	○	○		
16787	3	N		HB	●	●	○	●	○		
16788	3	N	ULTRA	HB	●	●	○	●	○		
16778	3	N	TiAlN	HB	●	●	○	●	●		
16781	3	N	TiAlN	HB	●	●	●	●	○		
16784	3	N	TiAlN	HA	●	●	●	●	○		

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16780	3	N		HA	●	●	●	●	○		
16790	3	N		HB	●	●	●	●	○		
16792	3	N	ULTRA	HB	●	●	●	●	○		
16793	3	N		HB	●	●	●	●	○		
16794	3	N	ULTRA	HB	●	●	●	●	○		
16799	3	N	TiAlN	HB	●	●	●	●	○		
16785	3	N		HA	●	●	●	●	○		

universal machining – 4 cutters

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16828	4	W	TiAlN	HB		●	●		○		
16830	4	N		HA	●	●	●	●	○		
16822	4	N	TiAlN	HA	●	●	●	●	○		
16823	4	N	TiAlN	HB	●	●	●	●	○		
16850	4	N		HB	●	●	●	●	○		
16837	4	H	TiAlN	HB	●			●		●	
16838	4	H	TiAlN	HB	●			●		●	
16857	4	N	ULTRA	HB	●	●	●	●	○		
16862	4	N	ULTRA	HA	●	○			○	●	
16851	4	N	ULTRA	HB	●	●	●	●	●		
16851	4	N	ULTRA	HB	●	●	●	●	●		
16853	4	N	TiAlN	HB	●	○	●	●	○		

universal machining – 6-8 cutters

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16886	8	VA	ULTRA	HB	●	●	●	●	●		
16876040-200	6	N	TiAlN	HB	●	●	●	○	○		
16881040-200	6	N	TiAlN	HB	●	●	●	○	○		
16883040-200	6	H	TiAlN	HA	●			○		●	
16883051-251	8	H	TiAlN	HA	●			○		●	

universal machining – roughing cutter

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16848	3	NR	ULTRA	HB	●	●	●	●	●		
16848	4	NR	ULTRA	HB	●	●	●	●	●		
16847	4	NF	TiAlN	HB	●	○		●	○		
16849	4	VA	ULTRA	HA	●	○	●	●	○		
16849	6	VA	ULTRA	HB	●	○	●	●	○		
16849	4	HR	TiAlN	HB	●	○	●	●	○		
16852	3	NR	TiAlN	HB	●		●	●			
16852	3	NR	TiAlN	HB	●		●	●			

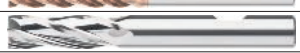
universal machining – torus milling cutter

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16856	4	N	ULTRA	HB	●	●	●	●	●		
16862	3	H	TiAlN	HA	●	○			○	●	

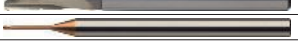
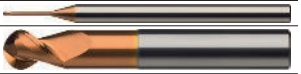
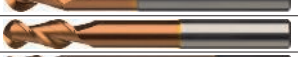
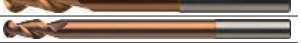
universal machining – radius cutter

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16738	2	N		HA	●	●	●	●	○		
16740	2	N		HB	●	○	●	●	○		
16741	2	N	TiAlN	HB	●	○	●	●	○		
16744	2	N		HB	●	○	●	●	○		
16745	2	N	ULTRA	HB	●	○	●	●	○		
16743	2	N	TiAlN	HB	●	○	●	●	○		
16749	2	N	TiAlN	HA	●	○	●	●	○		
16868	4	N	ULTRA	HB	●	●	●	●	●		
16868	4	N	ULTRA	HB	●	●	●	●	●		
16866	4	NR	ULTRA	HB	●	○	○	●			

solid carbide TVC cutter – trochoidal milling

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16859002-012	5	N	ULTRA	HB	●			●			
16859020-028	4	N	ULTRA	HB	●			●			
16859100-110	5	VA	ULTRA M	HB		●	●		●		
16859120-128	4	VA	ULTRA M	HB		●	●		●		
16859140-154	4	W		HB			●				
16859160-172	4	W		HB			●				

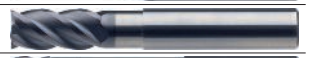
Solid carbide mills for machining aluminium

	Type	Surface	Tool holding device	P	M	N	K	S	H	
16652105-114	W		HA			●				
16700	W		HA			●				
16652010-095	W	ULTRA N	HA			●				
16652120-128	W		HB			●				
16652140-147	W	ULTRA N	HB			●				
16817	W		HB			●				
16821	WR		HB			●				
16652220-228	W		HB			●				
16652270-278	W	ULTRA N	HA			●				
16652300-308	W		HA			●				
16652320-328	W	ULTRA N	HA			●				
16652410-415	WF	ULTRA N	HB			●				
16652420-425	WF	ULTRA N	HA			●				
16652510-518	W	ULTRA N	HB			●				
16652521-527	W	ULTRA N	HA			●				
16652533-537	W	ULTRA N	HA			●				
16652600-608	W	ULTRA N	HA			●				
16652611-618	W	ULTRA N	HA			●				
16653010-095	W	ULTRA N	HA			●				
16653105-180	W	ULTRA N	HA			●				
16653205-280	W	ULTRA N	HA			●				
16653320-365	W	ULTRA N	HA			●				
16653620-680	W	ULTRA N	HB			●				
16651	WF	CALIDA Z	HA			●				
16654010-095	W	ULTRA N	HA			●				
16654105-140	W	ULTRA N	HA			●				
16654205-240	W	ULTRA N	HA			●				
16654305-330	W	ULTRA N	HA			●				

Solid carbide mills for machining stainless steel

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16670002-132	2	VA	ULTRA MS	HA	●	●			●		
16670150-166	3	VA	ULTRA MS	HB	●	●			●		
16670190-206	4	VA	ULTRA MS	HB	●	●			●		
16670260-274	4	VA	ULTRA MS	HB	●	●			●		
16670320-327	4	VA	ULTRA MS	HB	●	●			●		
16670340-347	5	VA	ULTRA MS	HB	●	●			●		
16670240-250	4	VA	ULTRA MS	HB	●	●			●		
16672002-128	2	VA	ULTRA MS	HA	●	●			●		
16672150-204	4	VA	ULTRA MS	HB	●	●			●		
16674004-132	2	VA	ULTRA MS	HA	●	●			●		
16674170-186	2	VA	ULTRA MS	HA	●	●			●		
16674200-216	2	VA	ULTRA MS	HB	●	●			●		

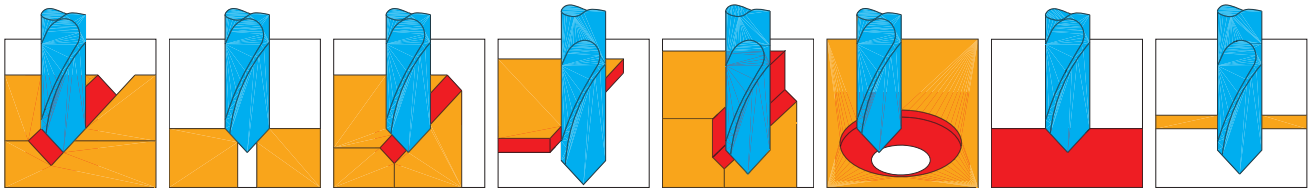
Solid carbide mills for machining steel up to 52 HRC

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16972001-009	2	N	RockTec 52	HA	●	●		●	●	●	
16972100-153	2	N	RockTec 52	HA	●	●		●	●	●	
16972200-208	4	N	RockTec 52	HA	●	●		●	●	●	
16972220-228	4	N	RockTec 52	HA	●	●		●	●	●	
16972230-238	4	N	RockTec 52	HA	●	●		●	●	●	
16972240-248	8	N	RockTec 52	HA	●	●		●	●	●	
16972250-258	6	N	RockTec 52	HA	●	●		●	●	●	
16973001-054	2	N	RockTec 52	HA	●	●		●	●	●	
16973100-127	4	N	RockTec 52	HA	●	●		●	●	●	
16973130-145	4	N	RockTec 52	HA	●	●		●	●	●	
16973150-165	4	N	RockTec 52	HA	●	●		●	●	●	
16973170-185	4	N	RockTec 52	HA	●	●		●	●	●	
16976190-201	4	H	RockTec 65	HA	●	●				●	
16974001-008	2	N	RockTec 52	HA	●	●		●	●	●	
16974100-153	2	N	RockTec 52	HA	●	●		●	●	●	
16974200-210	2	N	RockTec 52	HA	●	●		●	●	●	
16974220-230	2	N	RockTec 52	HA	●	●		●	●	●	
16974240-250	2	N	RockTec 52	HA	●	●		●	●	●	
16974260-268	4	N	RockTec 52	HA	●	●		●	●	●	
16974270-278	4	N	RockTec 52	HA	●	●		●	●	●	

Solid carbide mills for machining steel up to 65 HRC

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
16975001-009	2	H	RockTec 65	HA	●	●		●	●	●	
16975100-153	2	H	RockTec 65	HA	●	●		●	●	●	
16975200-208	4	H	RockTec 65	HA	●	●		●	●	●	
16975220-228	4	H	RockTec 65	HA	●	●		●	●	●	
16975230-238	4	H	RockTec 65	HA	●	●		●	●	●	
16975240-248	8	H	RockTec 65	HA	●	●		●	●	●	
16975250-258	6	H	RockTec 65	HA	●	●		●	●	●	
16976001-054	2	H	RockTec 65	HA	●	●		●	●	●	
16976100-127	4	H	RockTec 65	HA	●	●		●	●	●	
16976130-145	4	H	RockTec 65	HA	●	●		●	●	●	
16976150-165	4	H	RockTec 65	HA	●	●		●	●	●	
16976170-185	4	H	RockTec 65	HA	●	●		●	●	●	
16942	4	H	TiAlN	HA	●					●	
16977001-008	2	H	RockTec 65	HA	●	●		●	●	●	
16977100-153	2	H	RockTec 65	HA	●	●		●	●	●	
16977200-210	2	H	RockTec 65	HA	●	●		●	●	●	
16977220-230	2	H	RockTec 65	HA	●	●		●	●	●	
16977240-250	2	H	RockTec 65	HA	●	●		●	●	●	
16977260-268	4	H	RockTec 65	HA	●	●		●	●	●	
16977270-278	4	H	RockTec 65	HA	●	●		●	●	●	

Possible applications: solid carbide chamfer cutter



V slot milling | Countersinking | Angle milling | Face milling | Comb. face and bevel milling | Spot drilling* | Drilling*

* Drilling and spot drilling only in cast and non-ferrous metals.

Marking tools
...and your machine marks economically



the AMF-Writer and AMF-Marker are tools for permanently marking workpieces. they are preferably clamped in collet chucks and Weldon chucks, and mounted in the machine spindle of a CNC machine.

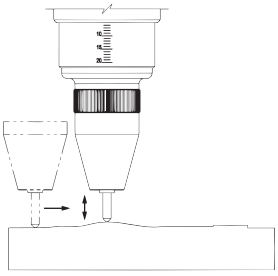
marking is achieved through a combination of material compaction and material displacement, which we call “rolling”. in other words, the mark is generated by means of a special needle with extremely hard ball.

through the special design and very high-quality guides, it is possible for this tool to produce uniform and high-quality marking on rough or smooth surfaces which are uneven by between 3 and 9 mm without height compensation from the spindle. it can be infinitely adapted to different materials, material hardnesses and to realise different marking depths.

this tool is especially economical due to the low purchase costs, long service life and the enormous time saving.

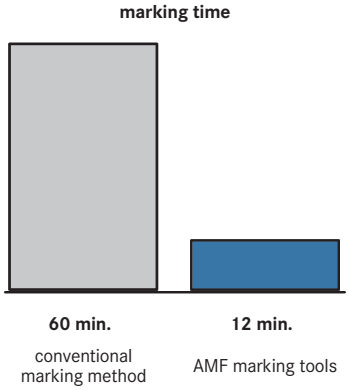
advantages at a glance:

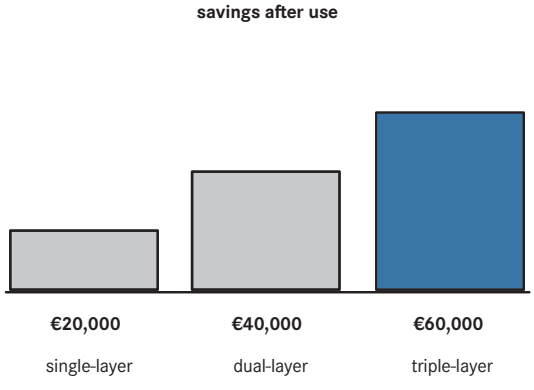
- the surface is not weakened or damaged, but compacted and thus strengthened
- high marking speeds are possible
- high wear resistance, resulting in long service life
- also suitable for thin-walled workpieces
- no ridge is produced on the marking line
- high-quality typeface
- workpiece unevenness is compensated for
- also suitable for marking rounded surfaces (up to 15°)
- depending on the version, it is possible to mark surfaces with a hardness of up to 57 HRC
- no noise generated





Are you producing or are you still marking?
...faster rationalisation through significantly reduced marking times





using the marking tools has proven to reduce marking time in the machining centre by over 75 %.
if 60 minutes used to be spent per shift on 60 marking operations in a machining centre, deploying the AMF marking tool will reduce the pure marking time to 12 minutes.
through automated workpiece loading and the ability of the tool to mark at speed, you can achieve savings in series. our customer example shows savings of € 60,000 per year, based on three-shift manufacturing utilisation. This guarantees rapid amortisation of the invested sum.

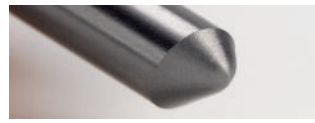
process	conventional marking method	with marking tool
machine cost (in €/h)	100	100
number of marking operations per shift (8 hrs)	60 pieces	60 pieces
time per marking operation	60 seconds	12 seconds
time per marking operation per shift	60 minutes	12 minutes
costs for marking per shift	€100	€20
annual marking costs (250 working days)	€25,000	€5000
savings per year/shift	**€20,000**	

The perfect needle?

the intricate needle is the heart of the marking tool and the guarantee of a perfect typeface. this enables marking by a combination of material compaction and material displacement, which we call “rolling”. in other words, the mark is created by a rounded tip, also known as a “ball”. the ideal radius of this “ball” varies depending on the material to be marked, the width and depth of the lines and the font size. that’s why we offer several versions of the needle, to ensure the best marking results.

the needle design is classified according to the angle, radius and eccentricity of the tip. this means that a needle of 90R10Ex01 design has an angle of 90° at the tip, a radius of 1.0 mm and 0.1 mm eccentricity. a needle of 90R05Ex00 would thus have an angle of 90°, a radius of 0.5 mm and 0.0 mm eccentricity, meaning this would be a centred needle.

we would be glad to support you in the search for the optimal needle for your application.





ATORN® Solid carbide single tooth cutter (Milling cutter design standard Company standard)

1 cutter, uncoated

VHM | Typ W | Z 1 | 30° | HA | HSC



Application:
For milling, plunging and contour milling NF metals and plastics.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HA
- Sharp-edged
- Uncoated
- With clearance
- Mirror finish
- Right-hand cutting

Advantage:
- Defined edge rounding for maximum service life
- Large chip area for optimum chip flow
- Ideal for NF metals and plastics

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652105-114						200	425	190	250	175	210	350							

Type	W
Surface	Uncoated
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
1.5	6	22	50	1.45	3	1	0.01	105	●
2	8	22	50	1.8	3	1	0.014	106	●
3	12	22	50	2.8	3	1	0.02	107	●
4	15	29	57	3.8	4	1	0.03	108	●
5	17	32	60	4.8	5	1	0.04	109	●
6	20	28	64	5.8	6	1	0.055	110	●
8	24	28	64	7.8	8	1	0.07	111	●
10	25	33	73	9.7	10	1	0.085	112	●
12	32	39	84	11.7	12	1	0.1	113	●
16	38	45	93	15.7	16	1	0.12	114	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

2 flutes, uncoated / ULTRA - coated

VHM | ULTRA | Typ N | Z 2 | 30° | 45° | HB



No. 16727



No. 16728

Application:
Suitable for universal plunge milling, groove milling and fitting milling.

Execution:
- Solid carbide ultra-fine grain
- Straight shank, 3 mm diameter, to DIN 6535 HA
- Straight shank, from 6 mm diameter, to DIN 6535 HB
- Centre cutting
- Radial grinding relief
- With edge protection chamfer
- With clearance
- **No. 16727:** Uncoated
- **No. 16728:** ULTRA coated

Notes:
The undersize values are particularly suitable for cutting keyways, slightly conical ground for more accurately fitting grooves.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16727001-025	105	80	65	60	55	225	270	145	160	100	115	115		90	50	45	40		
16727028-200	105	80	65	60	55	225	270	145	160	100	115	115		90	50	45	40		
16728001-025	115	90	75	65	60	250	300	160	180	110	130	130		100	55	50	45		
16728028-200	115	90	75	65	60	250	300	160	180	110	130	130		100	55	50	45		

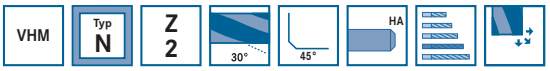
								Type	N		N	
								Surface	Uncoated		ULTRA	
								Tool holding device	HB parallel shank		HB parallel shank	
								Tolerance of cutting edge Ø	e8		e8	
								Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16727... Ident. No.		16728... Ident. No.	
0.25	0.5	-	38	-	3	-	2	0.0015	001	●	001	●
0.3	1	-	38	-	3	-	2	0.0015	002	●	002	●
0.35	1	-	38	-	3	-	2	0.0015	003	○	003	○
0.4	1	-	38	-	3	-	2	0.0015	004	●	004	●
0.5	1.5	-	38	-	3	-	2	0.0015	005	●	005	●
0.6	1.5	-	38	-	3	-	2	0.0025	006	●	006	●
0.7	2	-	38	-	3	-	2	0.0025	007	●	007	●
0.8	2	-	38	-	3	-	2	0.0025	008	●	008	●
0.9	2.5	-	38	-	3	-	2	0.0025	009	●	009	●
1	3	-	50	-	3	-	2	0.004	010	●	010	●
1.1	3	-	50	-	3	-	2	0.004	011	●	011	●
1.2	4	-	50	-	3	-	2	0.004	012	●	012	●
1.4	4	-	50	-	3	-	2	0.005	014	●	014	●
1.5	4	-	50	-	3	-	2	0.005	015	●	015	●
1.6	4	-	50	-	3	-	2	0.0065	016	●	016	●
1.8	5	-	50	-	3	-	2	0.009	018	●	018	●
2	5	-	50	-	3	0.05	2	0.013	020	●	020	●
2.5	6	-	50	-	3	0.05	2	0.019	025	●	025	●
2.8	8	15	57	2.6	6	0.05	2	0.019	028	●	028	●
3	8	15	57	2.8	6	0.1	2	0.019	030	●	030	●
3.8	11	15	57	3.6	6	0.1	2	0.019	038	●	038	●
4	11	15	57	3.8	6	0.1	2	0.025	040	●	040	●
4.8	13	21	57	4.6	6	0.1	2	0.025	048	●	048	●
5	13	21	57	4.8	6	0.1	2	0.025	050	●	050	●
5.8	13	21	57	5.6	6	0.1	2	0.025	058	●	058	●
6	13	21	57	5.8	6	0.1	2	0.035	060	●	060	●
6.8	16	27	63	6.6	8	0.1	2	0.035	068	●	068	●

								Type	N		N	
								Surface	Uncoated		ULTRA	
								Tool holding device	HB parallel shank		HB parallel shank	
								Tolerance of cutting edge Ø	e8		e8	
								Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16727... Ident. No.		16728... Ident. No.	
7	16	27	63	6.8	8	0.1	2	0.035	070	●	070	●
7.8	19	27	63	7.5	8	0.1	2	0.035	078	●	078	●
8	19	27	63	7.7	8	0.1	2	0.045	080	●	080	●
8.7	19	32	72	8.5	10	0.1	2	0.045	087	○	087	○
9	19	32	72	8.8	10	0.1	2	0.045	090	●	090	●
9.7	22	32	72	9.5	10	0.1	2	0.045	097	●	097	○
10	22	32	72	9.8	10	0.1	2	0.055	100	●	100	●
10.7	26	38	83	10.5	12	0.1	2	0.055	107	○	107	●
11	26	38	83	10.8	12	0.1	2	0.06	110	●	110	●
11.7	26	38	83	11.5	12	0.1	2	0.06	117	●	117	●
12	26	38	83	11.8	12	0.1	2	0.07	120	●	120	●
13.7	26	38	83	13.5	14	0.1	2	0.07	137	●	137	●
14	26	38	83	13.8	14	0.1	2	0.08	140	●	140	●
15.7	32	44	92	15.4	16	0.1	2	0.08	157	●	157	○
16	32	44	92	15.7	16	0.1	2	0.09	160	●	160	●
18	32	44	92	17.7	18	0.1	2	0.1	180	●	180	●
20	38	54	104	19.7	20	0.1	2	0.12	200	●	200	●

Prod. Gr. 108

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

2-cutter, uncoated





Application:
Suitable for universal plunge, groove and clearance milling.

Execution:
- Solid carbide ultra-fine grain
- Straight shank pursuant to DIN 6535 HA
- Centre cutting

Application	Steel (N/mm²)			Stainless steel		Alu		Brass	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	<55 HRC	<65 HRC
16750	95	70	60	55	50	200	245	130		

							N
							Uncoated
						Tool holding device	HA parallel shank
						Tolerance of cutting edge Ø	e8
						Tolerance of shank Ø	h5
mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16750... Ident. No.	
3	20	60	3	0.1	2	0.021	030	●
4	30	75	4	0.1	2	0.032	040	●
5	30	75	5	0.1	2	0.034	050	●
6	40	100	6	0.1	2	0.036	060	●
8	40	100	8	0.2	2	0.04	080	●
10	40	100	10	0.2	2	0.042	100	●
12	45	100	12	0.2	2	0.044	120	●
16	75	150	16	0.2	2	0.048	160	●
20	75	150	20	0.2	2	0.056	200	●

Prod. Gr. 108

ATORN® Disposable solid carbide milling cutter (Milling cutter design standard Company standard)

3 flutes, uncoated/ULTRA coated

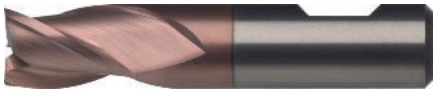
VHM | ULTRA | Typ N | Z 3 | 30° | HB

Application:
For universal machining in all material groups. Regrinding this cutting mill is not economical. It is cheaper to use the tool down to the wear line and replace it with a new one.

Execution:
- Solid carbide ultra-fine grain
- Straight shank pursuant to DIN 6535 HB
- Centre cutting
- **No. 16760:** Uncoated
- **No. 16763:** ULTRA-coating for extremely high service life requirements



No. 16760



No. 16763

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16760	100	90	67	55	45	270	315	130	155	110	120	125		90	40	30	30		
16763	110	100	75	60	50	300	350	145	170	120	135	140		100	45	35	35		

						Type	N		N	
						Surface	Uncoated		ULTRA	
						Tool holding device	HB parallel shank		HB parallel shank	
						Tolerance of cutting edge Ø	h10		h10	
						Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	Z (PCS)	fz steel 1000 ● (mm)		16760... Ident. No.		16763... Ident. No.	
2	4	35	6	3	0.014		020	●	020	●
2.5	4	35	6	3	0.023		025	●	025	●
3	5	36	6	3	0.031		030	●	030	●
3.5	5	36	6	3	0.04		035	●	035	●
4	7	38	6	3	0.048		040	●	040	●
4.5	7	38	6	3	0.05		045	●	045	●
5	8	39	6	3	0.051		050	●	050	●
5.5	8	39	6	3	0.053		055	●	055	●
5.75	8	39	6	3	0.053		057	●	057	●
6	8	39	6	3	0.054		060	●	060	●
6.75	11	43	8	3	0.056		067	●	067	○
7	11	43	8	3	0.057		070	●	070	●
7.75	11	43	8	3	0.059		077	●	077	●
8	11	43	8	3	0.06		080	●	080	●
8.7	13	50	10	3	0.061		087	○	-	-
9	13	50	10	3	0.062		090	●	090	●
9.7	13	50	10	3	0.063		097	●	-	-
10	13	50	10	3	0.063		100	●	100	●
12	15	55	12	3	0.066		120	●	120	●

Prod. Gr. 108

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3 flutes, uncoated/ULTRA coated

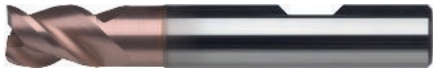
VHM | ULTRA | Typ W | Typ N | Z 3 | 45° | 45° | HB

Application:
Universal end mill for plunge, groove and slot milling as well as for face and circumferential milling.

Execution:
- Solid carbide ultra-fine grain
- Straight shank pursuant to DIN 6535 HB
- Centre cutting
- With edge protection chamfer
- With clearance
- **No. 16770:** Uncoated
- **No. 16771:** ULTRA-coated



No. 16770



No. 16771

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16770	105	80	65	60	55	225	270	145	160	100	115	115		90	50	45	40		
16771	115	90	75	65	60	250	300	160	180	110	130	130		100	55	50	45		

								Type	W		N		W		N	
								Surface	Uncoated		Uncoated		ULTRA		ULTRA	
								Tool holding device	HB parallel shank		HB parallel shank		HB parallel shank		HB parallel shank	
								Tolerance of cutting edge Ø	e8		e8		e8		e8	
								Tolerance of shank Ø	h6		h6		h6		h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16770... Ident. No.		16770... Ident. No.		16771... Ident. No.		16771... Ident. No.	
2	5	-	50	-	6	0.05	3	0.01	020	●	-	-	020	●	-	-
3	5	12	50	2.9	6	0.1	3	0.01	030	●	-	-	030	●	-	-
3.5	6	13	50	3.4	6	0.1	3	0.01	-	-	035	●	035	●	-	-
4	8	15	54	3.9	6	0.1	3	0.02	040	●	-	-	040	●	-	-
4.5	8	15	54	4.4	6	0.1	3	0.02	045	●	-	-	045	●	-	-
5	9	16	54	4.9	6	0.1	3	0.02	-	-	050	●	-	-	050	●
5.5	10	17	54	5.4	6	0.1	3	0.02	-	-	055	●	-	-	055	●
6	10	17	54	5.9	6	0.1	3	0.03	-	-	060	●	060	●	-	-
6.5	11	19	58	6.3	8	0.1	3	0.03	065	●	-	-	-	-	065	●
7	11	19	58	6.8	8	0.1	3	0.03	-	-	070	●	070	●	-	-
8	12	20	58	7.8	8	0.2	3	0.04	080	●	-	-	080	●	-	-
9	13	23	66	8.8	10	0.2	3	0.04	090	○	-	-	090	●	-	-
10	14	24	66	9.7	10	0.2	3	0.05	-	-	100	●	100	●	-	-
12	16	26	73	11.7	12	0.2	3	0.07	120	●	-	-	120	●	-	-
14	18	28	75	13.7	14	0.2	3	0.07	140	●	-	-	140	●	-	-
16	22	32	82	15.5	16	0.2	3	0.09	-	-	160	●	160	●	-	-
18	24	34	84	17.5	18	0.2	3	0.1	180	●	-	-	180	●	-	-
20	26	40	92	19.5	20	0.2	3	0.12	200	●	-	-	200	●	-	-

Prod. Gr. 108

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3 flutes, uncoated/ULTRA coated

VHM | ULTRA | Typ N | Z 3 | 30° | 45° | HB

Application:
End mill for universal use when plunge milling, groove milling and keyway cutting as well as face milling and peripheral milling.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HB
- centre cutting
- radial relief
- with clearance
- **No. 16787:** uncoated
- **No. 16788:** ULTRA-coated

Notes:
The undersized dimensions are particularly suited for cutting keyways



No. 16787



No. 16788

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16787	105	80	65	60	55	225	270	145	160	100	115	115		90	50	45	40		
16788	115	90	75	65	60	250	300	160	180	110	130	130		100	55	50	45		

								Type	N		N	
								Surface	Uncoated		ULTRA	
								Tool holding device	HB parallel shank		HB parallel shank	
								Tolerance of cutting edge Ø	e8		e8	
								Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16787... Ident. No.		16788... Ident. No.	
2.8	8	15	57	2.6	6	0.05	3	0.01	028	●	028	●
3	8	15	57	2.8	6	0.1	3	0.01	030	●	030	●
3.8	11	15	57	3.6	6	0.1	3	0.01	038	●	038	●
4	11	15	57	3.8	6	0.1	3	0.02	040	●	040	●
4.8	13	19	57	4.6	6	0.1	3	0.02	048	●	048	●
5	13	19	57	4.8	6	0.1	3	0.02	050	●	050	●
5.8	13	19	57	5.6	6	0.1	3	0.03	058	●	058	●
6	13	19	57	5.8	6	0.1	3	0.03	060	●	060	●
6.8	16	25	63	6.6	8	0.1	3	0.03	068	●	068	●
7	16	25	63	6.8	8	0.1	3	0.03	070	●	070	●
7.8	19	25	63	7.6	8	0.1	3	0.03	078	●	078	●
8	19	25	63	7.8	8	0.1	3	0.04	080	●	080	●
8.7	19	30	72	8.5	10	0.1	3	0.04	087	○	087	●
9	19	30	72	8.8	10	0.1	3	0.04	090	●	090	●
9.7	22	30	72	9.5	10	0.1	3	0.05	097	●	097	●
10	22	30	72	9.8	10	0.1	3	0.05	100	●	100	●
10.7	26	36	83	10.5	12	0.1	3	0.05	107	●	107	●
11	26	36	83	10.8	12	0.1	3	0.07	110	●	110	●
11.7	26	36	83	11.5	12	0.1	3	0.07	117	●	117	●
12	26	36	83	11.8	12	0.1	3	0.07	120	●	120	●
13.7	26	36	83	13.5	14	0.1	3	0.07	137	●	137	●
14	26	36	83	13.8	14	0.1	3	0.07	140	●	140	●
15.7	32	42	92	15.4	16	0.1	3	0.09	157	●	157	●
16	32	42	92	15.7	16	0.1	3	0.09	160	●	160	●
17.7	32	42	92	17.4	18	0.1	3	0.09	177	●	177	○
18	32	42	92	17.7	18	0.1	3	0.1	180	●	180	●
19.7	38	52	104	19.4	20	0.1	3	0.1	197	●	197	○
20	38	52	104	19.7	20	0.1	3	0.12	200	●	200	●

Prod. Gr. 108

ATORN® Solid carbide HPC end mill (Milling cutter design standard Company standard)

3 flutes, TiAlN coated

VHM | TiAlN | Typ N | Z 3 | 45° | HA | HB | HPC



No. 16777



No. 16778

Application:
HPC end mill with unequal twist for roughing and finishing materials with a strength of up to 1400 N/mm²

Execution:
- Solid carbide ultra-fine grain
- TiAlN-coated
- Centre cutting
- With edge protection chamfer
- Unequal twist angle (41°, 43°, 45°)
- With clearance

- **No. 16777:** Straight shank pursuant to DIN 6535 HA
- **No. 16778:** Straight shank pursuant to DIN 6535 HB

Advantage:
- Extremely smooth running
- Reduces vibrations
- Enables higher feed rates and greater cutting depths
- Ideal for static and dynamic trochoidal milling
- Defined edge rounding for extremely long service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16777201-209	220	190	170	115	105	250		180		160				160	70	60	60		
16778	220	190	170	115	105	250		180		160				160	70	60	60		

								Type		N		N	
								Surface		TiAlN		TiAlN	
								Tool holding device		HA parallel shank		HB parallel shank	
								Tolerance of cutting edge Ø		e8		e8	
								Tolerance of shank Ø		h6		h6	
mm	mm	mm	mm	mm	mm	F mm		Z (PCS)	fz steel 1000 ● (mm)	16777... Ident. No.		16778... Ident. No.	
3	8	15	57	2.7	6	0.05		3	0.04	201	●	201	●
4	11	18	57	3.7	6	0.1		3	0.05	202	●	202	●
5	13	18	57	4.7	6	0.1		3	0.06	203	●	203	●
6	13	21	57	5.5	6	0.1		3	0.07	204	●	204	●
8	19	27	63	7.5	8	0.2		3	0.08	205	●	205	●
10	22	32	72	9.2	10	0.2		3	0.09	206	●	206	●
12	26	38	83	11.2	12	0.2		3	0.11	207	●	207	●
16	32	44	92	15	16	0.2		3	0.13	208	●	208	●
20	38	54	104	19	20	0.2		3	0.15	209	●	209	●

Prod. Gr. 108

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3 flutes, uncoated/ULTRA coated

VHM | ULTRA | Typ N | Z 3 | 45° | 45° | HB

Application:
End mill for universal use when plunge milling, groove milling and keyway cutting as well as face milling and peripheral milling.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HB
- centre cutting
- with clearance
- **No. 16790:**
  - without edge protection chamfer
  - uncoated
- **No. 16792:**
  - with edge protection chamfer
  - ULTRA-coated



No. 16790



No. 16792

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16790	95	75	65	55	50	215	255	135	155	95	110	110		85	45	40	40		
16792	115	90	75	65	60	250	300	160	180	110	130	130		100	55	50	45		

Type														N				N	
Surface														Uncoated				ULTRA	
Tool holding device														HB parallel shank				HB parallel shank	
Tolerance of cutting edge Ø														e8				e8	
Tolerance of shank Ø														h5				h5	
mm		mm		mm		mm		mm		F mm		Z (PCS)	fz steel 1000 ● (mm)	16790... Ident. No.				16792... Ident. No.	
2	8	-	57	-	6	0.05	3	0.01	020	●									
3	8	15	57	2.8	6	0.05	3	0.01	030	●									
3.5	11	15	57	3.3	6	0.05	3	0.01	035	●									
4	11	15	57	3.8	6	0.1	3	0.02	040	●									
4.5	13	21	57	4.3	6	0.1	3	0.02	045	●									
5	13	21	57	4.8	6	0.1	3	0.02	050	●									
5.5	13	21	57	5.3	6	0.1	3	0.02	055	●									
6	13	21	57	5.8	6	0.1	3	0.03	060	●									
6.5	16	27	63	6.3	8	0.1	3	0.03	065	●									
7	16	27	63	6.8	8	0.1	3	0.03	070	●									
7.5	19	27	63	7.3	8	0.1	3	0.03	075	●									
8	19	27	63	7.7	8	0.2	3	0.04	080	●									
8.5	19	32	72	8.3	10	0.2	3	0.04	085	●									
9	19	32	72	8.8	10	0.2	3	0.05	090	●									
9.5	22	32	72	9.3	10	0.2	3	0.05	095	●									
10	22	32	72	9.8	10	0.2	3	0.06	100	●									
11	26	32	83	10.8	12	0.2	3	0.06	110	●									
12	26	38	83	11.8	12	0.2	3	0.07	120	●									
14	26	38	83	13.8	14	0.2	3	0.07	140	●									
16	32	44	92	15.7	16	0.2	3	0.07	160	●									
18	32	44	92	17.7	18	0.2	3	0.09	180	●									
20	38	54	104	19.7	20	0.2	3	0.12	200	●									

Prod. Gr. 108

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3 flutes, uncoated/ULTRA coated

VHM | ULTRA | Typ N | Z 3 | 45° | 45° | HB

Application:
End mill for universal use when plunge milling, groove milling and keyway cutting as well as face milling and peripheral milling.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HB
- centre cutting
- **No. 16793:**
  - without edge protection chamfer
  - uncoated
- **No. 16794:**
  - with edge protection chamfer
  - ULTRA-coated



No. 16793



No. 16794

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16793	85	67	60	50	45	195	230	120	140	85	100	100		75	40	35	35		
16794	105	80	67	60	55	225	270	145	160	100	120	120		90	50	45	40		

						Type	N		N	
						Surface	Uncoated		ULTRA	
						Tool holding device	HB parallel shank		HB parallel shank	
						Tolerance of cutting edge Ø	e8		e8	
						Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16793... Ident. No.		16794... Ident. No.	
3.5	15	59	6	0.05	3	0.036	035	●	035	●
4	19	63	6	0.1	3	0.043	040	●	040	●
4.5	19	63	6	0.1	3	0.045	045	●	045	●
5	24	68	6	0.1	3	0.046	050	●	050	●
5.5	24	68	6	0.1	3	0.048	055	●	055	●
6	24	68	6	0.1	3	0.049	060	●	060	●
6.5	30	80	8	0.1	3	0.05	065	●	065	●
7	30	80	8	0.1	3	0.051	070	●	070	●
7.5	30	80	8	0.1	3	0.053	075	●	075	●
8	38	88	8	0.2	3	0.054	080	●	080	●
8.5	38	88	10	0.2	3	0.055	085	●	085	●
9	38	88	10	0.2	3	0.056	090	●	090	●
9.5	38	88	10	0.2	3	0.056	095	●	095	●
10	45	95	10	0.2	3	0.057	100	●	100	●
11	45	102	12	0.2	3	0.058	110	●	110	●
12	53	110	12	0.2	3	0.059	120	●	120	●
14	53	110	14	0.2	3	0.062	140	●	140	●
16	63	123	16	0.2	3	0.065	160	●	160	●
18	63	123	18	0.2	3	0.07	180	●	180	●
20	75	141	20	0.2	3	0.076	200	●	200	●

Prod. Gr. 108

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4-cutter, uncoated





Application:
End mill for universal machining.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HA
- centre cutting
- 2-4 mm diameter without clearance
- without edge protection chamfer

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16830	115	90	75	65	60	250	300	160	180	110	130	130		100	55	50	45		

						Type	N	
						Surface	Uncoated	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h5	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1000 ● (mm)	16830... Ident. No.
2	8	-	32	-	2	4	0.02	020 ●
3	12	-	38	-	3	4	0.02	030 ●
4	12	-	40	-	4	4	0.03	040 ●
5	15	20	50	4.8	5	4	0.04	050 ●
6	16	20	58	5.8	6	4	0.04	060 ●
8	22	32	70	7.7	8	4	0.05	080 ●
10	25	31	73	9.6	10	4	0.06	100 ●
12	28	37	84	11.6	12	4	0.07	120 ●
14	31	41	88	13.5	14	4	0.08	140 ●
16	35	43	93	15.5	16	4	0.1	160 ●
20	40	52	104	19.5	20	4	0.12	200 ●

Prod. Gr. 108

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 flutes, ULTRA-coated

VHM | ULTRA | Typ N | Z 4 | 30° | HA | HB



Application:
End/torus milling cutter for universal machining.

Execution:
- Solid carbide ultra-fine grain
- Up to Ø 6 mm straight shank pursuant to DIN 6535 HA
- From Ø 8 mm straight shank pursuant to DIN 6535 HB
- ULTRA-coated
- Centre cutting
- Ø 2-4 mm without clearance

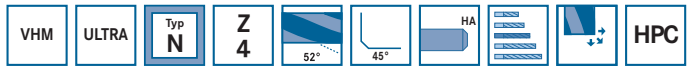
Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16857	115	90	75	65	60	250	300	160	180	110	130	130		100	55	50	45		

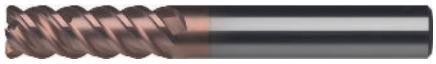
Type								N		N	
Surface								ULTRA		ULTRA	
Tool holding device								HA parallel shank		HB parallel shank	
Tolerance of cutting edge Ø								e8		e8	
Tolerance of shank Ø								h5		h5	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1000 ● (mm)	16857... Ident. No.		16857... Ident. No.	
2	8	-	32	-	2	4	0.023	020	●	-	-
3	12	-	38	-	3	4	0.05	030	●	-	-
4	12	-	40	-	4	4	0.077	040	●	-	-
5	15	20	50	4.8	5	4	0.081	050	●	-	-
6	16	20	58	5.8	6	4	0.086	060	●	-	-
8	22	32	70	7.7	8	4	0.096	-	-	080	●
10	25	31	73	9.6	10	4	0.101	-	-	100	●
12	28	37	84	11.6	12	4	0.106	-	-	120	●
16	35	43	93	15.5	16	4	0.115	-	-	160	●
20	40	52	104	19.5	20	4	0.135	-	-	200	●

Prod. Gr. 108

ATORN® Solid carbide HPC end mill/torus milling cutter (Milling cutter design standard Company standard)

4 flutes, ULTRA-coated





Application:
Ident. No. 040–041, 050–051, 060–061, 080–081, 100–101, 120–121, 160–201: End/torus milling cutter for universal machining.
Ident. No. 042–043, 052–053, 062–063, 082–083, 103, 123, 203: Shank or torus milling cutter for universal machining.

Execution:
- Solid carbide ultra-fine grain
- Centre cutting
- ULTRA-coated
- Edge protection chamfer/edge radius
- **Ident. No. 040–041, 050–051, 060–061, 080–081, 100–101, 120–121, 160–201:**
  - Straight shank pursuant to DIN 6535 HA
  - Extra-long design without clearance
- **Ident. No. 042–043, 052–053, 062–063, 082–083, 103, 123, 203:**
  - Straight shank in accordance with DIN 6535 HA
  - Extra-long design with no clearance

								Type		N	
								Surface		ULTRA	
								Tool holding device		HA parallel shank	
								Tolerance of cutting edge Ø		f8	
								Tolerance of shank Ø		h5	
mm	mm	mm	mm	mm	mm	F mm	R mm	Z (PCS)	fz steel 1300 ● (mm)	16862... Ident. No.	
4	11	18	57	3.9	6	0.1	-	4	0.03	040	●
4	16	-	62	-	6	0.1	-	4	0.03	041	●
4	11	18	57	3.9	6	-	0.5	4	0.03	042	●
4	16	-	62	-	6	-	0.5	4	0.03	043	●
5	13	19	57	4.9	6	0.1	-	4	0.03	050	●
5	17	-	62	-	6	0.1	-	4	0.03	051	●
5	13	19	57	4.9	6	-	0.5	4	0.03	052	●
5	17	-	62	-	6	-	0.5	4	0.03	053	●
6	13	19	57	5.9	6	0.1	-	4	0.04	060	●
6	18	-	62	-	6	0.1	-	4	0.04	061	●
6	13	19	57	5.9	6	-	0.5	4	0.04	062	●
6	18	-	62	-	6	-	0.5	4	0.04	063	●
8	19	25	63	7.7	8	0.1	-	4	0.05	080	●
8	24	-	68	-	8	0.1	-	4	0.05	081	●
8	19	25	63	7.7	8	-	1	4	0.05	082	○
8	24	-	68	-	8	-	1	4	0.05	083	○
10	22	30	72	9.7	10	0.1	-	4	0.06	100	●
10	30	-	80	-	10	0.1	-	4	0.06	101	●
10	30	-	80	-	10	-	1	4	0.06	103	●
12	26	36	83	11.7	12	0.1	-	4	0.07	120	●
12	36	-	93	-	12	0.1	-	4	0.07	121	●
12	36	-	93	-	12	-	1.5	4	0.07	123	●
16	32	42	92	15.5	16	0.1	-	4	0.09	160	●
16	48	-	108	-	16	0.1	-	4	0.09	161	●
20	38	52	104	19.5	20	0.1	-	4	0.11	200	●
20	60	-	126	-	20	0.1	-	4	0.11	201	●
20	60	-	126	-	20	-	2	4	0.11	203	○

Prod. Gr. 108

ATORN® SC roughing cutter (Milling cutter design standard Company standard)

3-4 flutes, ULTRA coated

VHM | ULTRA | Typ NR | Z 3 | Z 4 | 45° | 45° | HB

Application:
For universal rough cutting with maximum machining performance. Ideal for dry machining.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HB
- Centre cutting
- With edge protection chamfer
- With clearance



Ident. No. 040, 050, 060, 080, 100, 120, 160, 200



Ident. No. 041, 051, 061, 081, 101, 121, 161, 201

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16848040-200	150	150	110	110	110	350		140		130				150	70	50	50		
16848041-201	150	150	110	110	110	350		140		130				150	70	50	50		

Type	NR
Surface	ULTRA
Tool holding device	HB parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16848... Ident. No.	
4	11	18	57	3.8	6	0.1	3	0.032	040	●
4	8	18	57	3.8	6	0.1	3	0.044	041	●
5	13	20	57	4.8	6	0.1	3	0.04	050	●
5	9	20	57	4.8	6	0.1	3	0.048	051	●
6	13	20	57	5.8	6	0.1	4	0.048	060	●
6	10	20	57	5.8	6	0.1	4	0.056	061	●
8	19	25	63	7.7	8	0.2	4	0.064	080	●
8	12	25	63	7.7	8	0.2	4	0.064	081	●
10	22	30	72	9.5	10	0.2	4	0.08	100	●
10	15	30	72	9.5	10	0.2	4	0.072	101	●
12	26	35	83	11.5	12	0.3	4	0.096	120	●
12	18	35	83	11.5	12	0.3	4	0.12	121	●
16	32	40	92	15.5	16	0.3	4	0.115	160	●
16	24	40	92	15.5	16	0.3	4	0.145	161	●
20	38	50	104	19.5	20	0.3	4	0.13	200	●
20	30	50	104	19.5	20	0.3	4	0.17	201	●

Prod. Gr. 108

ATORN® SC roughing cutter (Milling cutter design standard Company standard)

4-6 flutes, ULTRA - coated

VHM | ULTRA | Typ VA | Z 4 | Z 5 | Z 6 | 45° | 45° | HA | HB



Ident. No. 460–601



Ident. No. 760–901

Application:
Roughing cutter for universal machining.

Execution:
- Solid carbide ultra-fine grain
- Centre cutting
- With clearance
- ULTRA-coated
- **Ident. No. 460, 480, 500, 520, 560, 600, 760, 780, 800, 820, 860, 900:** Straight shank in accordance with DIN 6535 HB
- **Ident. No. 461, 481, 501, 521, 561, 601, 761, 781, 801, 821, 861, 901:** Straight shank in accordance with DIN 6535 HA

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16849460-900	110	100	90	70	65	350	300	135	150	120	135			120	35	30	30		
16849461-901	110	100	90	70	65	350	300	135	150	120	135			120	35	30	30		

								Type	VA		VA	
								Surface	ULTRA		ULTRA	
								Tool holding device	HA parallel shank		HB parallel shank	
								Tolerance of cutting edge Ø	d11		d11	
								Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16849... Ident. No.		16849... Ident. No.	
6	8	16	54	5.8	6	0.1	4	0.044	460	●	760	●
6	13	19	57	5.8	6	0.1	4	0.044	461	●	761	●
8	11	20	58	7.7	8	0.2	4	0.048	480	●	780	●
8	19	25	63	7.7	8	0.2	4	0.048	481	●	781	●
10	13	24	66	9.8	10	0.2	4	0.056	500	●	800	●
10	22	30	72	9.8	10	0.2	4	0.056	501	●	801	●
12	16	26	73	11.8	12	0.2	4	0.064	520	●	820	●
12	26	36	83	11.8	12	0.2	4	0.064	521	●	821	●
16	19	32	82	15.7	16	0.3	5	0.1	560	●	860	●
16	32	42	92	15.7	16	0.3	5	0.1	561	●	861	●
20	19	40	92	19.7	20	0.3	6	0.145	600	●	900	●
20	38	52	104	19.7	20	0.3	6	0.145	601	●	901	●

Prod. Gr. 108

ATORN® SC multi-tooth mills (Milling cutter design standard Company standard)

6-8 flutes, ULTRA coated

VHM | ULTRA | Typ VA | Z 6 | Z 8 | 45° | 45° | HB



Application:
For circumferential milling as a finishing process to create a high surface quality. Face cut only with shallow cutting depths.

Execution:
- Solid carbide ultra-fine grain
- Straight shank pursuant to DIN 6535 HB
- ULTRA-coated
- Centre cutting
- With clearance

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16886	120	90	75	65	60	350	400	180	220	160	190	140		130	55	45	45		

Type	VA
Surface	ULTRA
Tool holding device	HB parallel shank
Tolerance of cutting edge Ø	f8
Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ● (mm)	16886... Ident. No.	
6	13	19	57	5.7	6	0.1	6	0.108	060	●
6	16.3	40	80	5.8	6	0.1	6	0.108	062	●
6	18	24	62	5.7	6	0.1	6	0.108	061	●
8	19	25	63	7.6	8	0.1	6	0.12	080	●
8	19	50	100	7.7	8	0.1	6	0.12	082	●
8	24	30	68	7.6	8	0.1	6	0.12	081	●
10	22	30	72	9.6	10	0.1	6	0.125	100	●
10	25	60	100	9.7	10	0.1	6	0.125	102	●
10	30	38	80	9.6	10	0.1	6	0.125	101	●
12	26	36	83	11.5	12	0.2	6	0.13	120	●
12	30	60	120	11.6	12	0.2	6	0.13	122	●
12	36	46	93	11.5	12	0.2	6	0.13	121	●
16	32	42	92	15.5	16	0.2	6	0.145	160	●
16	40	100	150	15.5	16	0.2	6	0.145	163	●
16	48	58	108	15.5	16	0.2	6	0.145	161	●
16	75	100	150	15.5	16	0.2	6	0.145	162	●
20	38	52	104	19.5	20	0.2	8	0.16	200	●
20	50	100	150	19.6	20	0.2	8	0.16	203	○
20	60	74	126	19.5	20	0.2	8	0.16	201	○
20	75	98	150	19.5	20	0.2	8	0.16	202	●

Prod. Gr. 108



ATORN® SC HPC torus milling cutter (Milling cutter design standard Company standard)

4 flutes, ULTRA-coated

VHM | ULTRA | Typ N | Z 4 | 30° | HB | HPC



Application:
HPC torus milling cutter with uneven pitch for universal rough machining and smoothing.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HB
- ULTRA-coated
- Centre cutting
- Unequal cutting pitch

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16856	230	190	150	120	100			350	300	240	280			160	100	70	70		

Type	N
Surface	ULTRA
Tool holding device	HB parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1000 ● (mm)	16856... Ident. No.	
3	0.1	5	10	50	2.7	6	4	0.02	001	●
3	0.1	8	13	57	2.7	6	4	0.02	002	●
3	0.4	5	10	50	2.7	6	4	0.02	003	●
3	0.4	8	13	57	2.7	6	4	0.02	004	●
3	0.5	5	10	50	2.7	6	4	0.02	005	●
3	0.5	8	13	57	2.7	6	4	0.02	006	●
3	1	5	13	50	2.7	6	4	0.02	007	●
3	1	8	13	57	2.7	6	4	0.02	008	●
4	0.1	8	14	54	3.7	6	4	0.03	009	●
4	0.1	11	17	57	3.7	6	4	0.03	010	●
4	0.4	8	14	54	3.7	6	4	0.03	011	●
4	0.4	11	17	57	3.7	6	4	0.03	012	●
4	0.5	8	14	54	3.7	6	4	0.03	013	●
4	0.5	11	17	57	3.7	6	4	0.03	014	●
4	1	8	14	54	3.7	6	4	0.03	015	●
4	1	11	17	57	3.7	6	4	0.03	016	●
5	0.1	9	16	54	4.7	6	4	0.04	017	●
5	0.1	13	19	57	4.7	6	4	0.04	018	●
5	0.5	9	16	54	4.7	6	4	0.04	019	●
5	0.5	13	19	57	4.7	6	4	0.04	020	●
5	1	9	16	54	4.7	6	4	0.04	021	●
5	1	13	19	57	4.7	6	4	0.04	022	●
6	0.1	10	16	54	5.5	6	4	0.045	023	●
6	0.1	13	19	57	5.5	6	4	0.045	024	●
6	0.5	10	16	54	5.5	6	4	0.045	025	●
6	0.5	13	19	57	5.5	6	4	0.045	026	●
6	1	10	16	54	5.5	6	4	0.045	027	●
6	1	13	19	57	5.5	6	4	0.045	028	●
6	1.5	10	16	54	5.5	6	4	0.045	029	●
6	1.5	13	19	57	5.5	6	4	0.045	030	●
8	0.15	12	20	58	7.4	8	4	0.05	031	●
8	0.15	21	25	63	7.4	8	4	0.05	032	●
8	0.5	12	20	58	7.4	8	4	0.05	033	●
8	0.5	21	25	63	7.4	8	4	0.05	034	●
8	1	12	20	58	7.4	8	4	0.05	035	●

							Type	N	
							Surface	ULTRA	
							Tool holding device	HB parallel shank	
							Tolerance of cutting edge Ø	e8	
							Tolerance of shank Ø	h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1000 ● (mm)	16856... Ident. No.	
8	1	21	25	63	7.4	8	4	0.05	036	●
8	1.5	12	20	58	7.4	8	4	0.05	037	●
8	1.5	21	25	63	7.4	8	4	0.05	038	●
8	2	12	20	58	7.4	8	4	0.05	039	●
8	2	21	25	63	7.4	8	4	0.05	040	●
10	0.15	14	24	66	9.2	10	4	0.06	041	●
10	0.15	22	30	72	9.2	10	4	0.06	042	●
10	0.5	14	24	66	9.2	10	4	0.06	043	●
10	0.5	22	30	72	9.2	10	4	0.06	044	●
10	1	14	24	66	9.2	10	4	0.06	045	●
10	1	22	30	72	9.2	10	4	0.06	046	●
10	1.5	14	24	66	9.2	10	4	0.06	047	●
10	1.5	22	30	72	9.2	10	4	0.06	048	●
10	2	14	24	66	9.2	10	4	0.06	049	●
10	2	22	30	72	9.2	10	4	0.06	050	●
12	0.2	16	26	73	11	12	4	0.07	051	●
12	0.2	26	36	83	11	12	4	0.07	052	●
12	0.5	26	36	83	11	12	4	0.07	054	●
12	1	16	26	73	11	12	4	0.07	055	●
12	1	26	36	83	11	12	4	0.07	056	●
12	1.5	16	26	73	11	12	4	0.07	057	●
12	1.5	26	36	83	11	12	4	0.07	058	●
12	2	16	26	73	11	12	4	0.07	059	●
12	2	26	36	83	11	12	4	0.07	060	●
16	0.3	22	32	82	15	16	4	0.09	063	●
16	0.3	36	42	92	15	16	4	0.09	064	●
16	1	22	32	82	15	16	4	0.09	065	●
16	1	36	42	92	15	16	4	0.09	066	●
16	2	36	42	92	15	16	4	0.09	068	●
16	4	36	42	92	15	16	4	0.09	070	●
20	1	41	52	104	19	20	4	0.12	080	●
20	2	41	52	104	19	20	4	0.12	082	●
20	4	41	52	104	19	20	4	0.12	084	●

Prod. Gr. 108

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2-cutter, uncoated



Application:
Radius milling cutter for universal use for copy milling in dip working and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HB
- Centre cutting
- With clearance

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16740	85	75	65	45	45	300	350	130	160	110	135	225		100	35	30	30		

						Type	N	
						Surface	Uncoated	
						Tool holding device	HB parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h5	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1000 ● (mm)	16740... Ident. No.	
3	5	9	50	2.9	6	2	0.024	030	●
4	8	12	54	3.9	6	2	0.036	040	●
5	9	15	54	4.9	6	2	0.045	050	●
6	10	17	54	5.9	6	2	0.054	060	●
8	12	20	58	7.8	8	2	0.072	080	●
10	14	26	66	9.8	10	2	0.084	100	●
12	16	28	73	11.8	12	2	0.096	120	●
16	22	32	82	15.7	16	2	0.12	160	●

Prod. Gr. 108

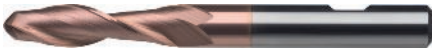
ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 flutes, uncoated/ULTRA coated

VHM | ULTRA | Typ N | Z 2 | 30° | HB



No. 16744



No. 16745

Application:
Radius milling cutter for universal use for copy milling in dip working and mould construction.

Execution:
- Solid carbide ultra-fine grain

- Up to 5 mm diameter straight shank in accordance with DIN 6535 HA
- From 6 mm diameter straight shank in accordance with DIN 6535 HB
- Centre cutting
- **No. 16744:** Uncoated
- **No. 16745:** ULTRA-coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16744030-050	70	65	55	40	40	255	300	110	135	95	115	190		85	30	25	25		
16744060-200	70	65	55	40	40	255	300	110	135	95	115	190		85	30	25	25		
16745030-050	75	70	60	40	40	270	315	120	145	100	120	200		90	30	25	25		
16745060-200	75	70	60	40	40	270	315	120	145	100	120	200		90	30	25	25		

| | | | | | | |

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

4 flutes, ULTRA-coated

VHM | ULTRA | Typ N | Z 4 | 30° | HB

Application:
Radius milling cutter for universal machining.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HB
- Up to Ø 6 mm = HA shank
- Centre cutting
- ULTRA-coated



Ident. No. 060, 080, 100, 120, 140–160



Ident. No. 061, 081, 101, 121

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16868060	120	90	75	60	60	300	350	200	240	170	200			130	55	45	45		
16868061	110	80	65	55	55	270	315	180	215	155	180			115	50	40	40		
16868080-160	120	90	75	60	60	300	350	200	240	170	200			130	55	45	45		
16868081-121	110	80	65	55	55	270	315	180	215	155	180			115	50	40	40		

Type	N
Surface	ULTRA
Tool holding device	HB parallel shank
Tolerance of cutting edge Ø	f8
Tolerance of shank Ø	h5

mm	mm	mm	mm	Z (PCS)	fz steel 1000 ● (mm)	16868... Ident. No.	
6	13	57	6	4	0.04	060	●
6	40	100	6	4	0.03	061	●
8	19	63	8	4	0.05	080	●
8	40	100	8	4	0.04	081	●
10	22	72	10	4	0.08	100	●
10	40	100	10	4	0.06	101	●
12	26	83	12	4	0.09	120	●
12	45	100	12	4	0.07	121	●
14	26	83	14	4	0.1	140	●
16	32	92	16	4	0.12	160	●

Prod. Gr. 108

ATORN HPC power end mill – strong against everything!
highest quality, highest service life and highest precision

with the new ATORN HPC POWER high-performance program, HAHN+KOLB significantly increased the performance of low-vibration premium tools. a milling program with innovative HPC geometry is available which is designed for highly efficient universal machining of steel, stainless steel, non-ferrous metals, cast iron, special alloys and hardened materials.

during machining, considerably higher material removal rates are the result of different twist angles in conjunction with newly developed, stable front face and peripheral cutting edges. even in the case of extreme cutting data, the tools impress through an especially high degree of smoothness, high process reliability and low stress on the machine. insertion and ramping processes are favoured through the optimised face geometries. the new solid carbide with an innovative PVD high-performance coating also contributes to improved service life and safe chip removal.

advantages of ATORN HPC POWER end mill:

- increase in productivity - rough machining and finishing with the same tool
- very good surface quality even at high feed rates
- long service life through optimised cutting edge geometries and high-performance coatings
- machining types such as immersion/drilling or ramping possible
- low stress on the machine due to very quiet operation, long service life
- extensive application possibilities and economic machining of difficult materials
- suitable for all modern milling strategies, such as trochoid milling



HPC POWER UNI

suitable for universal use for groove trimming

P M N K S



HPC Power Steel

suitable for steel and cast metal

P K



HPC Power Stainless Steel

suitable for stainless steel and special alloys

M N S



HPC Power Hard

suitable for the following materials

P K H

ATORN HPC POWER groove end mill UNI

the HPC POWER groove mill cutter is a 3-edged high-performance tool. due to its large chip space and very good chip removal, it is perfectly suitable for groove milling. each cutting edge has a different twist angle (33°/35°/37°). in addition to the entire spectrum for rustproof and acid-resistant steels, it can also be used for all steel processing.

the tool is available in the “short” version and as undersize mill cutter for feather key grooves with a conical cutting section as well as in the “long” version with front-side coolant outlet.

features:

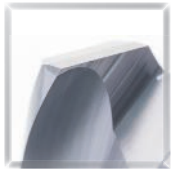
- Ø range 4 – 20 mm
- short and long version
- incl. undersize version
- incl. with internal cooling
- each cutting edge has a different twist angle (33°/35°/37°)

advantages:

- shaft version HA and HB available in h6 tolerance
- all tools with clearance for greater use of depth
- with unequal twist angles (33°/35°/38°)
- ULTRA coating ensures highest service life
- optimised front chip space for better chip removal

ATORN® P M N K S

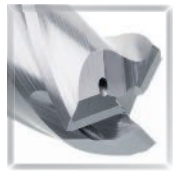




cutting edge corner twice protected through edge protection chamfer and stable forehead cutting edge



optimised front-face cutting geometry with large chip spaces



long version with axial internal cooling available

ATORN HPC POWER end mill STEEL

with the solid carbide end mills HPC POWER cutter for steel and cast iron, HAHN+KOLB significantly increased the performance of low-vibration premium tools: significantly higher material removal rates are the result of different twist angles in conjunction with newly developed, stable front face and peripheral cutting edges.

one feature of the HPC POWER milling cutters by ATORN is the multi-functional application: rough machining and finishing is possible with the same tool. you can also create bars and grooves up to 2xD with excellent surface quality.

in addition to a short and long version, there is an additional extra-long version, which is also available on request.

features:

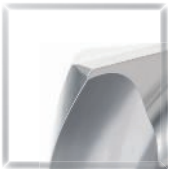
- Ø-range 1 – 20 mm
- short, long and extra-long version
- unequal twist angle (35°/38°)
- low power consumption
- stable cutting edge and edge protection chamfer
- optimised front cutting edge

advantages:

- shaft version HA and HB available in h6 tolerance
- all tools with clearance for greater application depth
- with unequal twist angle (35°/38°)
- ULTRA coating ensures highest service life
- optimised front chip space make for better suitability when helix milling and ramping

ATORN® P K





cutting edge corner twice protected through edge protection chamfer and stable forehead cutting edge



defined cutting edge rounding increases the service life and process reliability



gashing version in radius form for improved chip removal

ATORN HPC POWER end mill STAINLESS STEEL

the 4-edged high-performance milling cutter was especially designed for machining stainless and acid-resistant steels, titanium and nickel-based alloys as well as short-chipping aluminium.

special cutting edge geometries, combined with optimal cemented carbide quality and a multi-layer, fine crystalline PVD coating were able to set new standards for processing demanding materials. chip formation, chip removal and temperature resistance were optimised and ensure maximum performance for demanding cutting values. the tools are available in short and long version in Ø 4-20 mm as well as with radial internal cooling.

features:

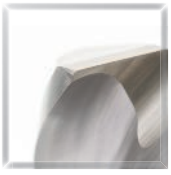
- Ø range 4 - 20 mm
- short and long version
- with internal cooling
- unequal twist angle (41°/44°)
- optimised cutting edge design (multi-chamfer polished surface)
- perfect for modern milling strategies

advantages:

- shank design HA and HB available in h6 tolerance
- all tools with clearance for greater milling depth
- low-vibration milling due to different twist angles (41°/44°)
- micro-cutting preparation on all cutting edges
- wear-resistant and temperature-resistant ULTRA M-coating

ATORN® M N S





new edge protection in the form of a multi-chamfer cut



optimised hollowing out in the centre



long version with radial internal cooling available

ATORN HPC POWER end mill HARD

the new HPC HARD by ATORN is used wherever high-strength materials up to 1600 N/mm² or hardened steel from 45 to 55 HRC is machined. the uneven pitch ensures maximum smoothness and process reliability. it is ideally suited for HSC machining or for trochoidal milling and shows its strength also in edge, angular and groove milling and drilling up to 0.5 x diameter. the new tool is available in the diameter range from 6-20 mm as well as in the two different cutting lengths short and long.

features:

- Ø range 6 - 20 mm
- short and long version
- various corner radii available
- unequal twist angle (35°/38°)
- perfect for modern milling strategies
- suitable for materials up to 55 HRC

advantages:

- shaft version HA and HB in h6 tolerance available
- all tools with clearance for greater milling depth
- low-vibration milling due to different twist angles (35°/38°)
- ULTRA coating ensures highest service life
- optimised front chip space makes for better suitability when helix milling and ramping

ATORN® P K H





cutting corner optimally protected due to edge protection chamfer and stable front cutting edge



unequal cutting pitch reduces vibration

ATORN TVC trochoidal end mill
milling tools for modern milling strategies

the new ATORN TVC end mills are ideally suited for processing various steels and stainless steels/heat-resistant alloys using modern milling strategies. cutting lengths of 3xD and 4xD, reinforced cores and specially developed chip breaker geometries allow for deep operating depths with maximum process reliability. the variable twist angles of 37°/38° and 41°/42° minimise vibrations and optimise surface qualities.

maximum cutting edge lengths – both types are available in 3xD and 4xD cutting length.

unequal twist angle
steel version = 37°/38°, stainless steel version = 41°/42°

edge protection chamfer – all tools are manufactured with a edge protection chamfer against wear and tear.

chip breaker geometry – produces short chips, thus optimising chip removal.

optimised number of teeth – 3xD tools have 5 teeth; the 4xD tools are manufactured with 4 teeth.

ATORN®





3xD with 5 teeth 4xD with 4 teeth



edge protection chamfer



chip breaker

trochoidal milling

TVC = Trochoidal Volume Cutting
this milling strategy creates smarter and more efficient tool paths, especially when rough machining. this means that more material can be removed in a shorter time – without any loss of quality. overlapping a circular path on the feed movement has a positive influence on contact conditions. reducing stepover while at the same time utilising the entire cutting length results in the process forces being significantly reduced.

advantages:

- cutting depths of 3-4xD easily possible
- optimal, controlled tool engagement
- almost constant engagement angle (max. 70°) and centre chip thickness
- low stress on tool / spindle / bearings
- the cutting parameters can be selected very aggressively

static:
only grooves are milled. the tool paths consist exclusively of circular tool paths.

dynamic:
free workpiece contours are milled. the tool paths consist of circular and straight tool paths. the circular paths may in some cases include very large radii or linear movements.

ATORN® Solid carbide TVC end mill, trochoidal — STEEL (Milling cutter design standard Company standard)

4-5 flutes, ULTRA coated

VHM | ULTRA | Typ N | Z 5 | Z 4 | 45° | 45° | HB



Ident. No. 002–012



Ident. No. 020–028

Application:
The TVC end mills are optimally suited for processing with modern milling strategies. Cutting lengths of 3xD and 4xD, reinforced cores and specially developed chip breaker geometries allow for deep operating depths with maximum process reliability.

Execution:
- solid carbide ultra-fine grain

- straight shank in line with DIN 6535 HB
- ULTRA-coated
- centre cutting and edge protection chamfer
- special chip breakers for short chips
- uneven twist angle
- **Ident. No. 002–012:** 3xD design with clearance

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16859002-012	270	250	220											170					
16859020-028	270	250	220											170					

									Type	N	
									Surface	ULTRA	
									Tool holding device	HB parallel shank	
									Tolerance of cutting edge Ø	h10	
									Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1000 ●	16859... Ident. No.		
6	19	21	62	5.7	6	0.12	5	0.07	002	●	
6	25	-	70	-	6	0.12	4	0.07	020	●	
8	26	28	68	7.7	8	0.16	5	0.09	004	●	
8	34	-	80	-	8	0.16	4	0.09	022	●	
10	32	35	80	9.7	10	0.2	5	0.11	006	●	
10	42	-	95	-	10	0.2	4	0.11	024	●	
12	38	42	93	11.7	12	0.24	5	0.14	008	●	
12	50	-	105	-	12	0.24	4	0.14	026	●	
16	50	56	108	15.7	16	0.32	5	0.18	010	●	
16	66	-	125	-	16	0.32	4	0.18	028	●	
20	62	70	126	19.7	20	0.4	5	0.21	012	●	

Prod. Gr. 152

ATORN® Solid carbide TVC end mill, trochoidal – STAINLESS STEEL (Milling cutter design standard Company standard)

4–5 flutes, ULTRA M – coated





Ident. No. 100–110



Ident. No. 120–128

Application:
The TVC end mills are optimally suited for processing with modern milling strategies. Cutting lengths of 3xD and 4xD, reinforced cores and specially developed chip breaker geometries allow for deep operating depths with maximum process reliability.

Execution:
- solid carbide ultra-fine grain
- straight shank in line with DIN 6535 HB
- ULTRA M-coated
- centre cutting and edge protection chamfer
- special chip breakers for short chips
- uneven twist angle
- **Ident. No. 100–110:** 3xD design with clearance

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16859100-110				100	110										100	100	80		
16859120-128				100	110										100	100	80		

									Type	VA	
									Surface	ULTRA M	
									Tool holding device	HB parallel shank	
									Tolerance of cutting edge Ø	h10	
									Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steinl. st. ●	16859... Ident. No.		
6	19	21	62	5.7	6	0.12	5	0.07	100	●	
6	25	-	70	-	6	0.12	4	0.07	120	●	
8	26	28	68	7.7	8	0.16	5	0.09	102	●	
8	34	-	80	-	8	0.16	4	0.09	122	●	
10	32	35	80	9.7	10	0.2	5	0.11	104	●	
10	42	-	95	-	10	0.2	4	0.11	124	●	
12	38	42	93	11.7	12	0.24	5	0.14	106	●	
12	50	-	105	-	12	0.24	4	0.14	126	●	
16	50	56	108	15.7	16	0.32	5	0.18	108	●	
16	66	-	125	-	16	0.32	4	0.18	128	●	
20	62	70	126	19.7	20	0.4	5	0.21	110	●	

Prod. Gr. 152

ATORN® Solid carbide TVC end mill, trochoidal – ALUMINIUM (Milling cutter design standard Company standard)

4-cutter, uncoated





Application:
The TVC end mills are optimally suited for processing with modern milling strategies. Cutting lengths of 3xD and 4xD, reinforced cores and specially developed chip breaker geometries allow for deep operating depths with maximum process reliability.

Execution:
- solid carbide ultra-fine grain
- straight shank in line with DIN 6535 HB
- uncoated and polished
- centre cutting and edge protection chamfer
- uneven twist angle
- **Ident. No. 140–154:** 3xD design with clearance

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16859140-154						600	400												
16859160-172						500	360												

									Type	W	
									Surface	Uncoated	
									Tool holding device	HB parallel shank	
									Tolerance of cutting edge Ø	e8	
									Tolerance of shank Ø	h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16859... Ident. No.		
4	13	14	62	3.8	6	0.08	4	0.05	140	●	
4	17	-	70	-	6	0.08	4	0.05	160	●	
5	16	17.5	62	4.8	6	0.1	4	0.06	142	●	
5	21	-	70	-	6	0.1	4	0.06	162	●	
6	19	21	62	5.8	6	0.12	4	0.1	144	●	
6	25	-	70	-	6	0.12	4	0.1	164	●	

							Type	W		
							Surface	Uncoated		
							Tool holding device	HB parallel shank		
							Tolerance of cutting edge Ø	e8		
							Tolerance of shank Ø	h5		
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16859... Ident. No.	
8	26	28	68	7.8	8	0.16	4	0.12	146	●
8	34	-	80	-	8	0.16	4	0.12	166	●
10	32	35	80	9.8	10	0.2	4	0.14	148	●
10	42	-	95	-	10	0.2	4	0.14	168	●
12	38	42	93	11.8	12	0.24	4	0.18	150	●
12	50	-	105	-	12	0.24	4	0.18	170	●
16	50	56	108	15.8	16	0.32	4	0.21	152	●
16	66	-	125	-	16	0.32	4	0.21	172	●
20	62	70	126	19.8	20	0.4	4	0.28	154	●

Prod. Gr. 154

ATORN® Solid carbide single tooth cutter (Milling cutter design standard Company standard) ●

1 cutter, uncoated



Application:
For milling, plunging and contour milling NF metals and plastics.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HA
- Sharp-edged
- Uncoated
- With clearance
- Mirror finish
- Right-hand cutting

Advantage:
- Defined edge rounding for maximum service life
- Large chip area for optimum chip flow
- Ideal for NF metals and plastics

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652105-114						200	425	190	250	175	210	350							

						Type	W		
						Surface	Uncoated		
						Tool holding device	HA parallel shank		
						Tolerance of cutting edge Ø	h9		
						Tolerance of shank Ø	h5		
mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
1.5	6	22	50	1.45	3	1	0.01	105	●
2	8	22	50	1.8	3	1	0.014	106	●
3	12	22	50	2.8	3	1	0.02	107	●
4	15	29	57	3.8	4	1	0.03	108	●
5	17	32	60	4.8	5	1	0.04	109	●
6	20	28	64	5.8	6	1	0.055	110	●
8	24	28	64	7.8	8	1	0.07	111	●
10	25	33	73	9.7	10	1	0.085	112	●
12	32	39	84	11.7	12	1	0.1	113	●
16	38	45	93	15.7	16	1	0.12	114	●

Prod. Gr. 152

ATORN® Solid carbide miniature end mill (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 30° | 45° | HA



Application:
Miniature end mill with long neck for machining NF metals.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HA
- Defined edge rounding of cutter
- With edge protection chamfer
- With clearance
- ZrCN ULTRA N-coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652010-095						280	450	230	280	200	250	375							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
0.5	0.9	4	55	0.48	4	0.05	2	0.003	010	●
0.5	0.9	6	65	0.48	4	0.05	2	0.003	015	●
0.5	0.9	10	65	0.48	4	0.05	2	0.003	020	●
1	1.5	5	55	0.95	4	0.1	2	0.005	030	●
1	1.5	10	65	0.95	4	0.1	2	0.005	035	●
1	1.5	15	65	0.95	4	0.1	2	0.005	040	●
1.5	1.8	8	55	1.44	4	0.1	2	0.008	050	●
1.5	1.8	15	65	1.44	4	0.1	2	0.008	055	●
1.5	1.8	20	65	1.44	4	0.1	2	0.008	060	●
2	2	10	55	1.92	4	0.1	2	0.01	070	●
2	2	20	65	1.92	4	0.1	2	0.01	075	●
2.5	2.5	12	55	2.4	4	0.1	2	0.013	090	●
2.5	2.5	20	65	2.4	4	0.1	2	0.013	095	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

2-cutter, uncoated

VHM | Typ W | Z 2 | 45° | 45° | HB



Application:
For milling, plunging and contour milling NF metals and plastics.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HB
- With edge protection chamfer
- Defined edge rounding of cutter
- Centre cutting
- With clearance
- Uncoated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652120-128						180	380	170	225	160	190	315							

Type	W
Surface	Uncoated
Tool holding device	HB parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
3	8	18	57	2.9	6	0.1	2	0.013	120	●
4	11	18	57	3.9	6	0.1	2	0.016	121	●
5	13	20	57	4.9	6	0.1	2	0.022	122	●
6	13	20	57	5.8	6	0.1	2	0.026	123	●
8	19	26	63	7.8	8	0.1	2	0.04	124	●
10	22	29	72	9.7	10	0.2	2	0.05	125	●
12	26	36	83	11.7	12	0.2	2	0.07	126	●
16	32	42	92	15.7	16	0.2	2	0.09	127	●
20	38	52	104	19.7	20	0.2	2	0.11	128	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 45° | 45° | HA | HB

Application:
End mill for plunging and groove milling in NF metals.

Execution:
- Solid carbide ultra-fine grain
- With edge protection chamfer
- Defined edge rounding of cutter
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated
- **Ident. No. 130–137:** Straight shank in accordance with DIN 6535 HA
- **Ident. No. 140–147:** Straight shank in accordance with DIN 6535 HB



Ident. No. 130–137



Ident. No. 140–147

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652130-137						200	425	190	250	175	210	350							
16652140-147						200	425	190	250	175	210	350							

Type													W				W		
Surface													ULTRA N				ULTRA N		
Tool holding device													HA parallel shank				HB parallel shank		
Tolerance of cutting edge Ø													h9				h9		
Tolerance of shank Ø													h5				h5		
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.				16652... Ident. No.			
3	8	18	57	2.9	6	0.1	2	0.013	130	●			140	●		
4	11	18	57	3.9	6	0.1	2	0.016	131	●			141	●		
5	13	20	57	4.9	6	0.1	2	0.022	132	●			142	●		
6	13	20	57	5.8	6	0.1	2	0.026	133	●			143	●		
8	19	26	63	7.8	8	0.1	2	0.04	134	●			144	●		
10	22	29	72	9.7	10	0.2	2	0.05	135	●			145	●		
12	26	36	83	11.7	12	0.2	2	0.07	136	●			146	●		
16	32	42	92	15.7	16	0.2	2	0.09	137	●			147	●		

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3-cutter, uncoated

VHM | Typ W | Z 3 | 45° | 45° | HA | HB



Ident. No. 200–208



Ident. No. 210–228

Application:
Ident. No. 200–208, 220–228: End mill for universal machining of non-ferrous metals.
Ident. No. 210–218: End mill for universal machining of NF metals.

Execution:
- **Ident. No. 200–208:**
  - Defined edge rounding of the cutting edge
  - Straight shank in accordance with DIN 6535 HA
- **Ident. No. 200–218:**
  - Solid carbide ultra-fine grain
  - Centre cutting
  - With clearance
  - Uncoated
  - With edge protection chamfer
- **Ident. No. 210–218:**
  - Defined edge rounding of cutter
  - Straight shank in accordance with DIN 6535 HB
- **Ident. No. 220–228:**
  - solid carbide ultra-fine grain
  - defined edge rounding of the cutting edge
  - centre cutting
  - with clearance
  - uncoated
  - straight shank in accordance with DIN 6535 HB
  - sharp-edged

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652200-208						180	380	170	225	160	190	315							
16652210-218						180	380	170	225	160	190	315							
16652220-228						180	380	170	225	160	190	315							

Type								W		W	
Surface								Uncoated		Uncoated	
Tool holding device								HA parallel shank		HB parallel shank	
Tolerance of cutting edge Ø								h9		h9	
Tolerance of shank Ø								h5		h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.		16652... Ident. No.	
3	12	16	57	2.8	6	0.1	3	0.024	200	●	210	●
3	12	16	57	2.8	6	-	3	0.024	-	-	220	●
4	12	18	57	3.8	6	0.1	3	0.03	201	●	211	●
4	12	18	57	3.8	6	-	3	0.03	-	-	221	●
5	15	18	57	4.7	6	0.1	3	0.042	202	●	212	●
5	15	18	57	4.7	6	-	3	0.042	-	-	222	●
6	16	21	57	5.6	6	0.1	3	0.048	203	●	213	●
6	16	21	57	5.6	6	-	3	0.048	-	-	223	●
8	22	28	64	7.6	8	0.1	3	0.06	204	●	214	●
8	22	28	64	7.6	8	-	3	0.06	-	-	224	●
10	25	33	73	9.6	10	0.2	3	0.084	205	●	215	●
10	25	33	73	9.6	10	-	3	0.084	-	-	225	●
12	28	39	84	11.4	12	0.2	3	0.096	206	●	216	●
12	28	39	84	11.4	12	-	3	0.096	-	-	226	●
16	35	45	93	15.4	16	0.2	3	0.108	207	●	217	●
16	35	45	93	15.4	16	-	3	0.108	-	-	227	●
20	40	54	104	19.4	20	0.2	3	0.12	208	●	218	●
20	40	54	104	19.4	20	-	3	0.12	-	-	228	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3 cutting edges, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 3 | 45° | 45° | HA | HB



Ident. No. 250–258



Ident. No. 260–278

Application:
End mill for universal machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain
- defined edge rounding of the cutting edge
- centre cutting
- with clearance
- ZrCN ULTRA-N coated
- **Ident. No. 250–258, 270–278:** straight shank in accordance with DIN 6535 HA
- **Ident. No. 250–268:** with edge protection chamfer
- **Ident. No. 260–268:** straight shank in accordance with DIN 6535 HB
- **Ident. No. 270–278:** sharp-edged

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652250-258						200	425	190	250	175	210	350							
16652260-268						200	425	190	250	175	210	350							
16652270-278						200	425	190	250	175	210	350							

							Type	W		W	
							Surface	ULTRA N		ULTRA N	
							Tool holding device	HA parallel shank		HB parallel shank	
							Tolerance of cutting edge Ø	h9		h9	
							Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.		16652... Ident. No.	
3	12	16	57	2.8	6	0.1	3	0.042	250	●	260	●
3	12	16	57	2.8	6	-	3	0.042	270	●	-	-
4	12	18	57	3.8	6	0.1	3	0.054	251	●	261	●
4	12	18	57	3.8	6	-	3	0.054	271	●	-	-
5	15	18	57	4.7	6	0.1	3	0.06	252	●	262	●
5	15	18	57	4.7	6	-	3	0.06	272	●	-	-
6	16	21	57	5.6	6	0.1	3	0.072	253	●	263	●
6	16	21	57	5.6	6	-	3	0.072	273	●	-	-
8	22	28	64	7.6	8	0.1	3	0.084	254	●	264	●
8	22	28	64	7.6	8	-	3	0.084	274	●	-	-
10	25	33	73	9.6	10	0.2	3	0.096	255	●	265	●
10	25	33	73	9.6	10	-	3	0.096	275	●	-	-
12	28	39	84	11.4	12	0.2	3	0.108	256	●	266	●
12	28	39	84	11.4	12	-	3	0.108	276	●	-	-
16	35	45	93	15.4	16	0.2	3	0.12	257	●	267	●
16	35	45	93	15.4	16	-	3	0.12	277	●	-	-
20	40	54	104	19.4	20	0.2	3	0.145	258	●	268	●
20	40	54	104	19.4	20	-	3	0.145	278	●	-	-

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3-cutter, uncoated



Application:
End mill for universal machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HA
- defined edge rounding of the cutting edge
- centre cutting
- with clearance
- uncoated
- with edge protection chamfer

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652300-308						160	340	150	200	145	170	285							

							Type	W		
							Surface	Uncoated		
							Tool holding device	HA parallel shank		
							Tolerance of cutting edge Ø	h9		
							Tolerance of shank Ø	h5		
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
3	15	21	64	2.8	6	0.1	3	0.022	300	●
4	19	27	64	3.8	6	0.1	3	0.027	301	●
5	20	28	64	4.7	6	0.1	3	0.038	302	●
6	20	28	64	5.6	6	0.1	3	0.043	303	●
8	38	44	80	7.6	8	0.1	3	0.054	304	●
10	45	55	95	9.6	10	0.2	3	0.076	305	●
12	53	55	100	11.4	12	0.2	3	0.086	306	●
16	63	75	123	15.4	16	0.2	3	0.097	307	●
20	65	75	125	19.4	20	0.2	3	0.108	308	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3 cutting edges, ULTRA N-coated



Application:
End mill for universal machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HA
- defined edge rounding of the cutting edge
- centre cutting
- with clearance
- ZrCN ULTRA-N coated
- **Ident. No. 310–318:** with edge protection chamfer
- **Ident. No. 320–328:** sharp-edged

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652310-318						180	380	170	225	155	190	315							
16652320-328						180	380	170	225	155	190	315							

							Type	W	
							Surface	ULTRA N	
							Tool holding device	HA parallel shank	
							Tolerance of cutting edge Ø	h9	
							Tolerance of shank Ø	h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
3	15	21	64	2.8	6	0.1	3	0.038	310	●
3	15	21	64	2.8	6	-	3	0.038	320	●
4	19	27	64	3.8	6	0.1	3	0.049	311	●
4	19	27	64	3.8	6	-	3	0.049	321	●
5	20	28	64	4.7	6	0.1	3	0.054	312	●
5	20	28	64	4.7	6	-	3	0.054	322	●
6	20	28	64	5.6	6	0.1	3	0.065	313	●
6	20	28	64	5.6	6	-	3	0.065	323	●
8	38	44	80	7.6	8	0.1	3	0.076	314	●
8	38	44	80	7.6	8	-	3	0.076	324	●
10	45	55	95	9.6	10	0.2	3	0.086	315	●
10	45	55	95	9.6	10	-	3	0.086	325	●
12	53	55	100	11.4	12	0.2	3	0.097	316	●
12	53	55	100	11.4	12	-	3	0.097	326	●
16	63	75	123	15.4	16	0.2	3	0.108	317	●
16	63	75	123	15.4	16	-	3	0.108	327	●
20	65	75	125	19.4	20	0.2	3	0.13	318	●
20	65	75	125	19.4	20	-	3	0.13	328	●

Prod. Gr. 152

ATORN® Solid carbide roughing cutter (Milling cutter design standard Company standard)

3 cutting edges, ULTRA N-coated

VHM | ULTRA N | Typ WF | Z 3 | 40° | 45° | HA | HB

Application:
Suitable for rough cutting with outstanding material removal rates on NF metals.

Execution:
- Solid carbide ultra-fine grain
- With edge protection chamfer
- Defined edge rounding of cutter
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated
- **Ident. No. 400–405:** Straight shank in accordance with DIN 6535 HA
- **Ident. No. 410–415:** Straight shank in accordance with DIN 6535 HB



Ident. No. 400–405



Ident. No. 410–415
Shank HB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652400-405						200	425	190	250	175	210	350							
16652410-415						200	425	190	250	175	210	350							

							Type	WF		WF	
							Surface	ULTRA N		ULTRA N	
							Tool holding device	HA parallel shank		HB parallel shank	
							Tolerance of cutting edge Ø	h9		h9	
							Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.		16652... Ident. No.	
6	13	18	57	5.6	6	0.4	3	0.086	400	●	410	●
8	21	25	63	7.6	8	0.4	3	0.106	401	●	411	●
10	22	30	72	9.6	10	0.4	3	0.125	402	●	412	●
12	26	36	83	11.4	12	0.4	3	0.145	403	●	413	●
16	36	42	92	15.4	16	0.4	3	0.155	404	●	414	●
20	41	52	104	19.4	20	0.4	3	0.2	405	●	415	●

Prod. Gr. 152

ATORN® Solid carbide roughing cutter with IC (Milling cutter design standard Company standard)

3 cutting edges, ULTRA N-coated



Application:
Suitable for rough cutting with outstanding material removal rates on NF metals.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HA
- With edge protection chamfer
- Defined edge rounding of cutter
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated
- With internal cooling

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652420-425						220	470	210	275	195	230	385							

												Type	WF
												Surface	ULTRA N
												Tool holding device	HA parallel shank
												Tolerance of cutting edge Ø	h9
												Tolerance of shank Ø	h5
mm	mm	mm	mm	mm	mm	F mm			Z (PCS)	fz alu ● (mm)	16652... Ident. No.		
6	13	18	57	5.6	6	0.4			3	0.108	420	●	
8	21	25	63	7.6	8	0.4			3	0.13	421	●	
10	22	30	72	9.6	10	0.4			3	0.155	422	●	
12	26	36	83	11.4	12	0.4			3	0.18	423	●	
16	36	42	92	15.4	16	0.4			3	0.19	424	●	
20	41	52	104	19.4	20	0.4			3	0.25	425	●	

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 cutting edges, ULTRA N-coated



Ident. No. 500–508



Ident. No. 510–518

Application:
End mill for universal machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain
- with edge protection chamfer
- defined edge rounding of the cutting edge
- centre cutting
- with clearance
- ZrCN ULTRA-N coated
- **Ident. No. 500–508:** straight shank in accordance with DIN 6535 HA
- **Ident. No. 510–518:** straight shank in accordance with DIN 6535 HB

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652500-508						200	425	190	250	175	210	350							
16652510-518						200	425	190	250	175	210	350							

												Type	W		W	
												Surface	ULTRA N		ULTRA N	
												Tool holding device	HA parallel shank		HB parallel shank	
												Tolerance of cutting edge Ø	h9		h9	
												Tolerance of shank Ø	h5		h5	
mm	mm	mm	mm	mm	mm	F mm			Z (PCS)	fz alu ● (mm)	16652... Ident. No.		16652... Ident. No.	
3	6	10	57	2.8	6	0.1			4	0.04	500	●	510	●
4	8	14	57	3.8	6	0.1			4	0.048	501	●	511	●
5	10	16	57	4.7	6	0.1			4	0.065	502	●	512	●
6	12	19	57	5.6	6	0.2			4	0.07	503	●	513	●
8	16	25	63	7.6	8	0.2			4	0.09	504	●	514	●
10	20	30	72	9.6	10	0.2			4	0.1	505	●	515	●
12	24	36	83	11.4	12	0.2			4	0.11	506	●	516	●
16	32	42	92	15.4	16	0.2			4	0.12	507	●	517	●
20	40	52	104	19.4	20	0.2			4	0.16	508	●	518	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 cutting edges, ULTRA N-coated





Application:
End mill for universal machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain

- straight shank in accordance with DIN 6535 HA
- with edge protection chamfer
- defined edge rounding of the cutting edge
- centre cutting
- with clearance
- ZrCN ULTRA-N coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652521-527						180	380	170	225	160	190	315							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
4	16	22	62	3.8	6	0.1	4	0.04	521	●
5	17	24	62	4.7	6	0.1	4	0.05	522	●
6	18	24	62	5.6	6	0.2	4	0.06	523	●
8	24	30	72	7.6	8	0.2	4	0.07	524	●
10	30	38	80	9.6	10	0.2	4	0.08	525	●
12	36	46	93	11.5	12	0.2	4	0.09	526	●
16	48	58	108	15.4	16	0.2	4	0.1	527	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 cutting edges, ULTRA N-coated





Application:
End mill for universal machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain

- straight shank in accordance with DIN 6535 HA
- with edge protection chamfer
- defined edge rounding of the cutting edge
- centre cutting
- with clearance
- ZrCN ULTRA-N coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652533-537						170	360	160	210	150	180	300							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
6	12	42	80	5.6	6	0.2	4	0.054	533	●
8	16	58	100	7.6	8	0.2	4	0.06	534	●
10	20	62	100	9.6	10	0.2	4	0.07	535	●
12	24	75	120	11.4	12	0.2	4	0.08	536	●
16	32	100	150	15.4	16	0.2	4	0.09	537	●

Prod. Gr. 152

ATORN® Solid carbide HPC end mill (Milling cutter design standard Company standard)

4 cutting edges, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 4 | 35°/38° | 45° | HA | HPC



Application:
HPC end mill with uneven twist and uneven pitch for rough and finish machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HA
- with edge protection chamfer
- defined edge rounding of the cutting edge
- centre cutting

- with clearance
- uneven 35°/38° twist angle
- ZrCN ULTRA-N coated

Advantage:
- extremely quiet running
- reduces vibrations
- higher feeds and cutting depths possible
- ideal for static and dynamic trochoidal milling
- defined edge rounding for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652600-608						210	445	200	260	185	220	365							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
3	6	10	57	2.8	6	0.1	4	0.05	600	●
4	8	14	57	3.8	6	0.1	4	0.06	601	●
5	10	16	57	4.7	6	0.1	4	0.075	602	●
6	12	19	57	5.6	6	0.2	4	0.08	603	●
8	16	25	63	7.6	8	0.2	4	0.1	604	●
10	20	30	72	9.6	10	0.2	4	0.11	605	●
12	24	36	83	11.4	12	0.2	4	0.12	606	●
16	32	42	92	15.4	16	0.2	4	0.14	607	●
20	40	52	104	19.4	20	0.2	4	0.19	608	●

Prod. Gr. 152

ATORN® Solid carbide HPC end mill (Milling cutter design standard Company standard)

4 cutting edges, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 4 | 35°/38° | 45° | HA | HPC



Application:
HPC end mill with uneven twist and uneven pitch for rough and finish machining of non-ferrous metals.

Execution:
- solid carbide ultra-fine grain
- straight shank in accordance with DIN 6535 HA
- with edge protection chamfer
- defined edge rounding of the cutting edge
- centre cutting

- with clearance
- uneven 35°/38° twist angle
- ZrCN ULTRA-N coated

Advantage:
- extremely quiet running
- reduces vibrations
- higher feeds and cutting depths possible
- ideal for static and dynamic trochoidal milling
- defined edge rounding for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16652611-618						190	400	180	235	165	200	330							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	16652... Ident. No.	
4	16	22	62	3.8	6	0.1	4	0.05	611	●
5	17	24	62	4.7	6	0.1	4	0.065	612	●
6	18	24	62	5.6	6	0.2	4	0.07	613	●
8	24	30	68	7.6	8	0.2	4	0.085	614	●
10	30	38	80	9.6	10	0.2	4	0.095	615	●
12	36	46	93	11.4	12	0.2	4	0.1	616	●
16	48	58	108	15.4	16	0.2	4	0.12	617	●
20	60	74	126	19.4	20	0.2	4	0.16	618	●

Prod. Gr. 152

ATORN® Solid carbide miniature torus milling cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 30° | HA



Application:
Miniature torus milling cutter with long neck for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HA
- Defined edge rounding of the blade
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16653010-095						280	450	230	280	200	250	375							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16653... Ident. No.	
0.5	0.05	0.9	4	55	0.48	4	2	0.006	010	●
0.5	0.05	0.9	6	65	0.48	4	2	0.006	015	●
0.5	0.08	0.9	10	65	0.48	4	2	0.006	020	●
1	0.08	1.5	5	55	0.95	4	2	0.012	030	●
1	0.1	1.5	10	65	0.95	4	2	0.012	035	●
1	0.1	1.5	15	65	0.95	4	2	0.012	040	●
1.5	0.12	1.8	8	55	1.44	4	2	0.018	050	●
1.5	0.15	1.8	15	65	1.44	4	2	0.018	055	●
1.5	0.15	1.8	20	65	1.44	4	2	0.018	060	●
2	0.2	2	10	55	1.92	4	2	0.024	070	●
2	0.2	2	20	65	1.92	4	2	0.024	075	●
2.5	0.25	2.5	12	55	2.4	4	2	0.03	090	●
2.5	0.25	2.5	20	65	2.4	4	2	0.03	095	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 30° | HA



Application:
Torus milling cutter, standard version for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HA
- Defined edge rounding of the blade
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated
- Radius tolerance = +/- 0.01 mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16653105-180						200	425	190	250	175	210	350							

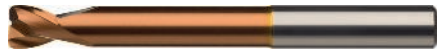
Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16653... Ident. No.	
3	0.3	4	14	50	2.9	3	2	0.036	105	●
4	0.3	5	16	50	3.8	4	2	0.048	110	●
5	0.3	6	18	54	4.8	5	2	0.06	115	●
6	0.3	7	21	57	5.7	6	2	0.08	120	●
6	1	7	21	57	5.7	6	2	0.08	125	●
6	2	7	21	57	5.7	6	2	0.08	130	●
8	0.3	9	27	63	7.7	8	2	0.11	135	●
8	1	9	27	63	7.7	8	2	0.11	140	●
8	2	9	27	63	7.7	8	2	0.11	145	●
10	0.3	11	32	72	9.6	10	2	0.13	150	●
10	1.5	11	32	72	9.6	10	2	0.13	155	●
10	3	11	32	72	9.6	10	2	0.13	160	●
12	1.5	12	38	83	11.6	12	2	0.15	165	●
12	4	12	38	83	11.6	12	2	0.15	170	●
16	2	16	44	92	15.5	16	2	0.16	175	●
16	4	16	44	92	15.5	16	2	0.16	180	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated



Application:
Torus milling cutter, long version for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HA
- Defined edge rounding of the blade
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated
- Radius tolerance = +/- 0.01 mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16653205-280						200	425	190	250	175	210	350							

								Type	W
								Surface	ULTRA N
								Tool holding device	HA parallel shank
								Tolerance of cutting edge Ø	h9
								Tolerance of shank Ø	h5
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16653... Ident. No.	
3	0.3	4	32	75	2.8	3	2	0.035	205	●
4	0.3	5	36	75	3.75	4	2	0.042	210	●
5	0.3	6	40	75	4.7	5	2	0.049	215	●
6	0.3	7	44	80	5.6	6	2	0.063	220	●
6	1	7	44	80	5.6	6	2	0.063	225	●
6	2	7	44	80	5.6	6	2	0.063	230	●
8	0.3	9	54	100	7.6	8	2	0.084	235	●
8	1	9	54	100	7.6	8	2	0.084	240	●
8	2	9	54	100	7.6	8	2	0.084	245	●
10	0.3	11	60	100	9.5	10	2	0.098	250	●
10	1.5	11	60	100	9.5	10	2	0.098	255	●
10	3	11	60	100	9.5	10	2	0.098	260	●
12	1.5	12	75	120	11.5	12	2	0.115	265	●
12	4	12	75	120	11.5	12	2	0.115	270	●
16	2	16	92	150	15.5	16	2	0.14	275	●
16	4	16	92	150	15.5	16	2	0.14	280	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated



Application:
Torus milling cutter, extra-long version for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HA
- Defined edge rounding of the blade
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated
- Radius tolerance = +/- 0.01 mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16653320-365						170	360	160	210	150	180	300							

								Type	W
								Surface	ULTRA N
								Tool holding device	HA parallel shank
								Tolerance of cutting edge Ø	h9
								Tolerance of shank Ø	h5
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16653... Ident. No.	
6	0.3	7	80	120	5.6	6	2	0.054	320	●
6	1	7	80	120	5.6	6	2	0.054	325	●
8	0.3	9	90	130	7.6	8	2	0.072	330	●
8	1	9	90	130	7.6	8	2	0.072	335	●
8	2	9	90	130	7.6	8	2	0.072	340	●
10	0.3	11	110	150	9.5	10	2	0.084	345	●
10	3	11	110	150	9.5	10	2	0.084	350	●
12	1.5	12	115	160	11.5	12	2	0.096	355	●
12	4	12	115	160	11.5	12	2	0.096	360	●
16	2	16	140	200	15.5	16	2	0.12	365	●

Prod. Gr. 152

ATORN® SC HPC torus milling cutter (Milling cutter design standard Company standard)

3 cutting edges, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 3 | 45° | HA | HB | HPC

Application:
HPC torus milling cutter for roughing and finishing non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain
- Defined edge rounding of the blade
- Radius tolerance = +/- 0.01 mm
- Centre cutting
- With clearance
- ZrCN ULTRA N-coated
- **Ident. No. 520–580:** Straight shank in accordance with DIN 6535 HA
- **Ident. No. 620–680:** Straight shank in accordance with DIN 6535 HB

Advantage:
- Higher feed rates and cutting depths possible
- Defined edge rounding for outstanding service life



Ident. No. 520–580
Shank HA



Ident. No. 620–680

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16653520-580						200	425	190	250	175	210	350							
16653620-680						200	425	190	250	175	210	350							

Type									W		W	
Surface									ULTRA N		ULTRA N	
Tool holding device									HA parallel shank		HB parallel shank	
Tolerance of cutting edge Ø									h9		h9	
Tolerance of shank Ø									h5		h5	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16653... Ident. No.		16653... Ident. No.	
5	0.5	13	18	57	4.7	6	3	0.03	520	●	620	●
5	1	13	18	57	4.7	6	3	0.03	525	●	625	●
6	0.5	13	18	57	5.6	6	3	0.04	530	●	630	●
6	1	13	18	57	5.6	6	3	0.04	535	●	635	●
8	0.5	21	25	63	7.6	8	3	0.05	540	●	640	●
8	1	21	25	63	7.6	8	3	0.05	545	●	645	●
10	0.5	22	30	72	9.6	10	3	0.07	550	●	650	●
10	1	22	30	72	9.6	10	3	0.07	555	●	655	●
12	0.5	26	36	83	11.4	12	3	0.08	560	●	660	●
12	1	26	36	83	11.4	12	3	0.08	565	●	665	●
16	2	36	42	92	15.4	16	3	0.1	570	●	670	●
16	4	36	42	92	15.4	16	3	0.1	575	●	675	●
20	4	41	52	104	19.4	20	3	0.14	580	●	680	●

Prod. Gr. 152



ATORN® Solid carbide 3D roughing cutter (Milling cutter design standard Company standard)

3 flutes, CALIDA Z coated

VHM | CALIDA Z | Typ WF | Z 3 | 7° | HA | HSC | HPC



Application:
For high-performance milling in aluminium with cutting values up to 1600 m/min.

Execution:
- Solid carbide ultra-fine grain
- HA straight shank
- With clearance
- CALIDA Z high-performance coating (ZrCrN titanium-free)
- Defined cutting edge rounding
- Centre cutting
- Reinforced core
- Flat 7° twist

Advantage:
- Extremely stable high-performance geometry
- Chip breaker for machining short chips
- Fast and reliable chip removal
- Also for long-chipping materials
- Wear protection through corner radius (torus)

Notes:
The tools should be shrunk-in. A stable machine and firmly clamped parts are important.

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16651						850	1000	800	950	600	700								

									Type	WF
									Surface	CALIDA Z
									Tool holding device	HA parallel shank
									Tolerance of cutting edge Ø	e8
									Tolerance of shank Ø	h6
mm	mm	mm	mm	mm	mm	R mm	Z (PCS)	fz alu ● (mm)	16651... Ident. No.	
6	8	21	57	5.8	6	0.6	3	0.21	060	●
8	10	27	63	7.8	8	0.8	3	0.27	080	●
10	12	32	72	9.7	10	1	3	0.39	100	●
12	16	38	83	11.7	12	1.2	3	0.48	120	●
16	20	44	92	15.7	16	1.6	3	0.6	160	●
20	25	54	104	19	20	2	3	0.65	200	●
25	30	65	121	24	25	2.5	3	0.7	250	●

Prod. Gr. 108

ATORN® Solid carbide mini radius milling cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 30° | HA



Application:
Mini radius cutter with long neck for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HA
- Defined flute edge rounding
- With clearance
- ZrCN ULTRA N coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16654010-095						310	495	250	310	220	275	415							

								Type	W
								Surface	ULTRA N
								Tool holding device	HA parallel shank
								Tolerance of cutting edge Ø	h9
								Tolerance of shank Ø	h5
mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16654... Ident. No.	
0.5	0.9	4	55	0.48	4	2	0.006	010	●
0.5	0.9	6	65	0.48	4	2	0.006	015	●
0.5	0.9	10	65	0.48	4	2	0.006	020	●
1	1.5	5	55	0.95	4	2	0.012	030	●
1	1.5	10	65	0.95	4	2	0.012	035	●
1	1.5	15	65	0.95	4	2	0.012	040	●
1.5	1.8	8	55	1.44	4	2	0.018	050	●
1.5	1.8	15	65	1.44	4	2	0.018	055	●
1.5	1.8	20	65	1.44	4	2	0.018	060	●
2	2	10	55	1.92	4	2	0.023	070	●
2	2	20	65	1.92	4	2	0.023	075	●
2.5	2.5	12	55	2.4	4	2	0.029	090	●
2.5	2.5	20	65	2.4	4	2	0.029	095	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 45° | HA



Application:
Standard radius cutter for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HA
- Defined flute edge rounding
- With clearance
- ZrCN ULTRA N coated
- Radius tolerance = +/- 0.01 mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16654105-140						220	470	210	275	190	230	385							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

						Z (PCS)	fz alu ● (mm)	16654... Ident. No.	
mm	mm	mm	mm	mm	mm				
3	6	16	50	2.9	3	2	0.06	105	●
4	7	17	54	3.8	4	2	0.072	110	●
5	8	18	54	4.8	5	2	0.084	115	●
6	10	21	54	5.7	6	2	0.108	120	●
8	12	27	60	7.7	8	2	0.145	125	●
10	13	32	67	9.6	10	2	0.17	130	●
12	16	38	73	11.6	12	2	0.19	135	●
16	20	44	83	15.5	16	2	0.24	140	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 45° | HA



Application:
Long radius cutter for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain

- Straight shank in accordance with DIN 6535 HA
- Defined flute edge rounding
- With clearance
- ZrCN ULTRA N coated
- Radius tolerance = +/- 0.01 mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16654205-240						200	425	190	250	170	210	345							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

						Z (PCS)	fz alu ● (mm)	16654... Ident. No.	
mm	mm	mm	mm	mm	mm				
3	10	32	75	2.9	3	2	0.05	205	●
4	13	36	75	3.8	4	2	0.06	210	●
5	15	40	75	4.8	5	2	0.07	215	●
6	16	44	100	5.7	6	2	0.09	220	●
8	22	54	100	7.7	8	2	0.12	225	●
10	25	60	100	9.6	10	2	0.14	230	●
12	26	60	100	11.6	12	2	0.16	235	●
16	30	92	150	15.5	16	2	0.2	240	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 blades, ULTRA N-coated

VHM | ULTRA N | Typ W | Z 2 | 45° | HA



Application:
Extra-long radius cutter for machining non-ferrous metals.

Execution:
- Solid carbide ultra-fine grain
- Straight shank in accordance with DIN 6535 HA
- Defined flute edge rounding
- With clearance
- ZrCN ULTRA N coated
- Radius tolerance = +/- 0.01 mm

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16654305-330						200	425	190	250	170	210	345							

Type	W
Surface	ULTRA N
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	h9
Tolerance of shank Ø	h5

mm	mm	mm	mm	mm	mm	Z (PCS)	fz alu ● (mm)	16654... Ident. No.	
3	10	82	125	2.8	3	2	0.04	305	●
4	13	86	125	3.75	4	2	0.048	310	●
6	16	94	150	5.6	6	2	0.072	315	●
8	22	104	150	7.6	8	2	0.096	320	●
10	25	110	150	9.6	10	2	0.115	325	●
12	26	110	150	11.4	12	2	0.13	330	●

Prod. Gr. 152

ATORN milling tools for graphite machining

in tool and mould construction, especially in spark erosion, graphite electrodes are increasingly becoming the standard due to their technical advantages. to process the highly abrasive electrode material graphite efficiently, tools are required which will keep pace with the performance of modern machine tools. the diamond-coated graphite milling cutters by ATORN guarantee the highest precision which enables delicate processing of the material. the special ULTRA DC multi-layer diamond coating protects the tools from wear and tear due to the highly abrasive graphite and enables reliable milling with high feed rates.

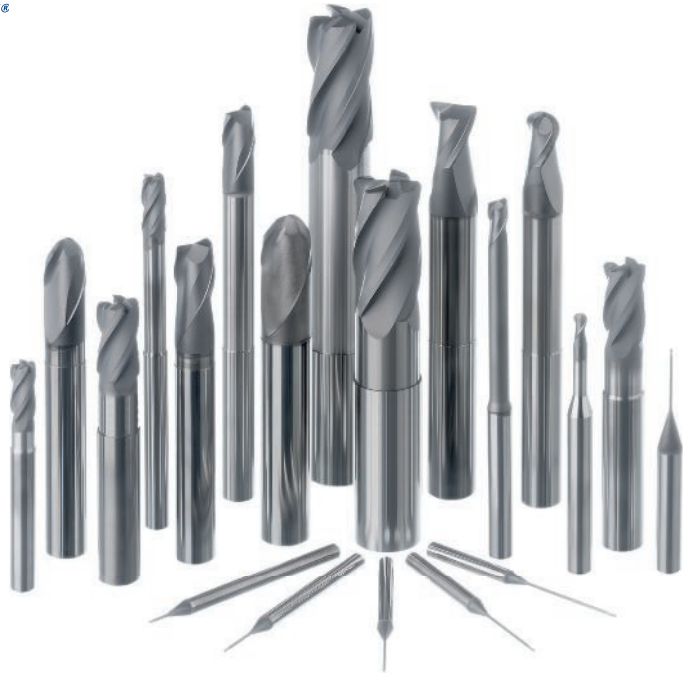
ULTRA DC coating
high-performance diamond coating for maximum wear resistance with a layer hardness of 10,000 HV

large program depth
available in Ø range from 0.2 mm – 16 mm and a number of tool clearances

100% quality
all tools undergo 100% final inspection

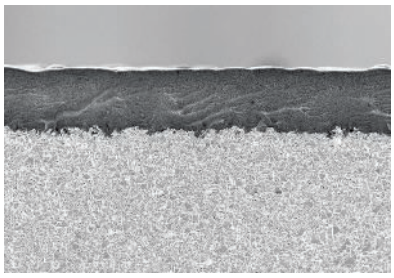
high-precision tool tolerances
radius accuracy: +0.003/-0.003 mm
cutting tolerance: +0.000/-0.015 mm
concentricity tolerance: 0.005 mm

optimum cutting geometry
for results with precise contours and excellent surface qualities



ULTRA DC coating – hard as a diamond

for machining graphite, carbon/fibreglass, we coat our torus and radius cutter with the special ULTRA DC coating. thanks to the extremely adhesive CVD high-performance coating, the tools have similar physical and chemical properties as natural diamond. extreme hardness and smoothness, high chemical resistance and very good heat conductivity and abrasion resistance make them extremely powerful and stable. for a long service life, the milling tools are equipped with a layer thickness of 10+2 µm or 6+2 µm.



ATORN® Solid carbide miniature end mill (Milling cutter design standard Company standard)

2 flutes, ULTRA MS-coated



Application:
Ultra-precise mini end mill with long neck for reliable machining of stainless steels, titanium, nickel and copper alloys.

Execution:
- ultra-fine grain cemented carbide
- tolerance: < dia. 0.7 mm = 0/-0.012 mm and < dia. 4 mm = 0/-0.020 mm
- HA straight shank
- with clearance
- high-performance ULTRA MS layer
- defined cutting edge rounding
- centre cutting

Advantage:
- large selection of clearance lengths
- optimum chip removal and temperature resistance
- maximum service life thanks to ULTRA MS coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16670002-132	45	40		35	30										45	40	45		

							Type	VA		
							Surface	ULTRA MS		
							Tool holding device	HA parallel shank		
							Tolerance of cutting edge Ø	e8		
							Tolerance of shank Ø	h6		
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16670... Ident. No.		
0.2	0.3	0.5	50	0.16	4	2	0.003	002	●	
0.3	0.4	2	50	0.26	4	2	0.003	010	●	
0.4	0.6	2	50	0.37	4	2	0.004	014	○	
0.4	0.6	4	50	0.37	4	2	0.003	018	○	
0.5	0.7	2	50	0.45	4	2	0.006	022	●	
0.5	0.7	4	50	0.45	4	2	0.005	024	●	
0.5	0.7	6	50	0.45	4	2	0.004	026	●	
0.6	0.9	2	50	0.55	4	2	0.007	030	●	
0.6	0.9	4	50	0.55	4	2	0.006	032	●	
0.6	0.9	6	50	0.55	4	2	0.005	034	●	
0.8	1.2	4	50	0.75	4	2	0.007	040	●	
0.8	1.2	6	50	0.75	4	2	0.007	042	●	
0.8	1.2	8	50	0.75	4	2	0.006	044	●	
1	1.5	6	50	0.95	4	2	0.008	050	●	
1	1.5	8	50	0.95	4	2	0.008	052	●	
1	1.5	10	50	0.95	4	2	0.007	054	●	
1	1.5	12	50	0.95	4	2	0.006	056	●	
1	1.5	16	50	0.95	4	2	0.005	058	●	
1.2	1.8	6	50	1.15	4	2	0.011	060	●	
1.2	1.8	8	50	1.15	4	2	0.01	062	●	
1.2	1.8	10	50	1.15	4	2	0.009	064	●	
1.5	2.3	6	50	1.45	4	2	0.014	068	●	
1.5	2.3	8	50	1.45	4	2	0.013	070	●	
1.5	2.3	10	50	1.45	4	2	0.012	072	●	
1.5	2.3	12	50	1.45	4	2	0.011	074	●	
1.5	2.3	16	50	1.45	4	2	0.01	076	●	
1.5	2.3	20	60	1.45	4	2	0.009	078	●	
2	3	6	50	1.95	4	2	0.018	080	●	
2	3	8	50	1.95	4	2	0.018	082	●	
2	3	10	50	1.95	4	2	0.017	084	●	
2	3	12	50	1.95	4	2	0.016	086	●	
2	3	16	50	1.95	4	2	0.014	088	●	
2	3	20	60	1.95	4	2	0.013	090	●	
2	3	25	75	1.95	4	2	0.012	092	●	
2.5	3.7	8	50	2.4	4	2	0.023	096	●	
2.5	3.7	10	50	2.4	4	2	0.023	098	●	
2.5	3.7	12	50	2.4	4	2	0.023	100	●	
2.5	3.7	16	50	2.4	4	2	0.02	102	●	
2.5	3.7	20	60	2.4	4	2	0.017	104	●	
2.5	3.7	25	60	2.4	4	2	0.015	106	●	
3	4.5	8	50	2.85	6	2	0.027	110	●	
3	4.5	10	50	2.85	6	2	0.027	112	●	

						Type	VA	
						Surface	ULTRA MS	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16670... Ident. No.	
3	4.5	12	50	2.85	6	2	0.027	114	●
3	4.5	16	60	2.85	6	2	0.025	116	●
3	4.5	20	60	2.85	6	2	0.023	118	●
3	4.5	25	75	2.85	6	2	0.021	120	●
4	4.5	20	60	3.85	6	2	0.033	126	●
4	4.5	25	75	3.85	6	2	0.03	128	●
4	4.5	30	75	3.85	6	2	0.03	130	●
4	4.5	40	75	3.85	6	2	0.026	132	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

3 cutting edges, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 3 | 40° | HB | HA

Application:
End mill for machining stainless steel, titanium alloy, nickel and copper alloys.

Execution:
- ultra-fine grain cemented carbide
- with clearance
- high-performance ULTRA MS layer
- defined cutting edge rounding

- centre cutting
- **Ident. No. 150–166:** HB straight shank
- **Ident. No. 170–186:** HA straight shank

Advantage:
- optimised, positive cutting geometry
- optimum chip removal and temperature resistance
- maximum service life thanks to ULTRA MS coating



Ident. No. 150–166



Ident. No. 170–186

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16670150-166	140	130		70	60										70	60	70		
16670170-186	140	130		70	60										70	60	70		

						Type	VA		VA	
						Surface	ULTRA MS		ULTRA MS	
						Tool holding device	HB parallel shank		HA parallel shank	
						Tolerance of cutting edge Ø	e8		e8	
						Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16670... Ident. No.		16670... Ident. No.	
3	9	15	50	2.8	6	3	0.015	150	●	170	●
4	12	20	50	3.7	6	3	0.02	152	●	172	●
5	15	20	50	4.6	6	3	0.025	154	●	174	●
6	16	20	50	5.5	6	3	0.03	156	●	176	●
8	20	30	64	7.4	8	3	0.036	158	●	178	●
10	22	32	70	9.2	10	3	0.044	160	●	180	●
12	25	37	75	11	12	3	0.052	162	●	182	●
16	32	46	90	15	16	3	0.065	164	●	184	●
20	38	58	100	19	20	3	0.08	166	●	186	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 4 | 40° | HB | HA

Application:
End mill for machining stainless steel, titanium alloy, nickel and copper alloys.

Execution:
- ultra-fine grain cemented carbide
- with clearance
- high-performance ULTRA MS layer
- defined cutting edge rounding

- centre cutting
- **Ident. No. 190–206:** HB straight shank
- **Ident. No. 210–226:** HA straight shank

Advantage:
- optimised, positive cutting geometry
- optimum chip removal and temperature resistance
- maximum service life thanks to ULTRA MS coating



Ident. No. 190–206



Ident. No. 210–226

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16670190-206	140	130		70	60										70	60	70		
16670210-226	140	130		70	60										70	60	70		

							Type	VA		VA	
							Surface	ULTRA MS		ULTRA MS	
							Tool holding device	HB parallel shank		HA parallel shank	
							Tolerance of cutting edge Ø	e8		e8	
							Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16670... Ident. No.		16670... Ident. No.	
3	9	15	50	2.8	6	4	0.015	190	●	210	●
4	12	20	50	3.7	6	4	0.02	192	●	212	●
5	15	20	50	4.6	6	4	0.025	194	●	214	●
6	16	20	50	5.5	6	4	0.03	196	●	216	●
8	20	30	64	7.4	8	4	0.036	198	●	218	●
10	22	32	70	9.2	10	4	0.044	200	●	220	●
12	25	37	75	11	12	4	0.052	202	●	222	●
16	32	46	90	15	16	4	0.065	204	●	224	●
20	38	58	100	19	20	4	0.08	206	●	226	●

Prod. Gr. 152

ATORN® Solid carbide HPC end mill (Milling cutter design standard Company standard)

4 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 4 | 35°/38° | 45° | HB | HA | HPC



Ident. No. 260–274



Ident. No. 276–290

Application:
HPC end mill with uneven helical and uneven pitch for rough machining and finish machining of stainless steel, titanium alloy, nickel and copper alloys. The uneven helical pitch means that vibrations on the tool are reduced, which results in outstanding finished surfaces, while, at the same time, feed rates and cutting depths can be increased.

Execution:
- ultra-fine grain cemented carbide
- with uneven helical and cutter distribution (35/38°)
- with clearance
- high-performance ULTRA MS layer
- with edge protection chamfer
- defined cutting edge rounding
- centre cutting
- **Ident. No. 260–274:** HB straight shank
- **Ident. No. 276–290:** HA straight shank

Advantage:
- rough machining and finishing with just one tool
- optimum suitability for trochoidal milling
- HPC geometry for maximum feed rates and running smoothness
- suitable for large cutting depths

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16670260-274	140	130		70	60										70	60	70		
16670276-290	140	130		70	60										70	60	70		

								Type	VA		VA	
								Surface	ULTRA MS		ULTRA MS	
								Tool holding device	HB parallel shank		HA parallel shank	
								Tolerance of cutting edge Ø	e8		e8	
								Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steinl. st. ● (mm)	16670... Ident. No.		16670... Ident. No.	
4	11	20	57	3.7	6	0.1	4	0.02	260	●	276	●
5	13	20	57	4.6	6	0.1	4	0.025	262	●	278	●
6	13	20	57	5.5	6	0.1	4	0.03	264	●	280	●
8	20	30	64	7.4	8	0.2	4	0.036	266	●	282	●
10	22	32	72	9.2	10	0.2	4	0.044	268	●	284	●
12	26	37	83	11	12	0.2	4	0.052	270	●	286	●
16	32	46	92	15	16	0.3	4	0.065	272	●	288	●
20	38	58	104	19	20	0.4	4	0.08	274	●	290	●

Prod. Gr. 152

ATORN® Solid carbide HPC end mill (Milling cutter design standard Company standard)

4 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 4 | 35°/38° | 45° | HB | HA | HPC



Ident. No. 320–327



Ident. No. 330–337

Application:
HPC end mill with uneven helical and uneven pitch for rough machining and finish machining of stainless steel, titanium alloy, nickel and copper alloys. The uneven helical pitch means that vibrations on the tool are reduced, which results in outstanding finished surfaces, while, at the same time, feed rates and cutting depths can be increased.

Execution:
- ultra-fine grain cemented carbide
- with uneven helical and cutter distribution (35/38°)
- with clearance
- high-performance ULTRA MS layer
- with edge protection chamfer
- defined cutting edge rounding
- centre cutting
- **Ident. No. 320–327:** HB straight shank
- **Ident. No. 330–337:** HA straight shank

Advantage:
- rough machining and finishing with just one tool
- optimum suitability for trochoidal milling
- HPC geometry for maximum feed rates and running smoothness
- suitable for large cutting depths

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16670320-327	140	130		70	60										70	60	70		
16670330-337	140	130		70	60										70	60	70		

									Type	VA		VA	
									Surface	ULTRA MS		ULTRA MS	
									Tool holding device	HB parallel shank		HA parallel shank	
									Tolerance of cutting edge Ø	e8		e8	
									Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steinl. st. ● (mm)	16670... Ident. No.			16670... Ident. No.	
4	19	32	75	3.7	6	0.1	4	0.015	320	●		330	●
5	19	32	75	4.6	6	0.1	4	0.02	321	●		331	●
6	19	32	75	5.5	6	0.1	4	0.025	322	●		332	●
8	26	40	75	7.4	8	0.2	4	0.031	323	●		333	●
10	32	46	100	9.2	10	0.2	4	0.04	324	●		334	●
12	32	46	100	11	12	0.2	4	0.047	325	●		335	●
16	50	75	125	15	16	0.3	4	0.06	326	●		336	●
20	57	75	125	19	20	0.4	4	0.075	327	●		337	●

Prod. Gr. 152

ATORN® Solid carbide HPC end mill (Milling cutter design standard Company standard)

5 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 5 | 35°/38° | 45° | HB | HA | HPC



Application:
HPC end mill with uneven helical and uneven pitch for rough machining and finish machining of stainless steel, titanium alloy, nickel and copper alloys. The uneven helical pitch means that vibrations on the tool are reduced, which results in outstanding finished surfaces, while, at the same time, feed rates and cutting depths can be increased.

Execution:
- ultra-fine grain cemented carbide
- with uneven helical (35/38°)
- with reinforced core
- with clearance
- high-performance ULTRA MS layer
- with edge protection chamfer
- defined cutting edge rounding
- centre cutting
- **Ident. No. 340–347:** HB straight shank
- **Ident. No. 350–357:** HA straight shank

Advantage:
- optimum suitability for trochoidal milling
- HPC geometry for maximum feed rates and running smoothness
- suitable for large cutting depths

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16670340-347	140	130		70	60										70	60	70		
16670350-357	140	130		70	60										70	60	70		

									Type	VA		VA	
									Surface	ULTRA MS		ULTRA MS	
									Tool holding device	HB parallel shank		HA parallel shank	
									Tolerance of cutting edge Ø	e8		e8	
									Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steinl. st. ● (mm)	16670... Ident. No.			16670... Ident. No.	
4	12	20	57	3.7	6	0.1	5	0.02	340	●		350	●
5	13	20	57	4.6	6	0.1	5	0.025	341	●		351	●
6	13	20	57	5.5	6	0.1	5	0.03	342	●		352	●
8	20	30	64	7.4	8	0.2	5	0.036	343	●		353	●

| | | |

							Type		VA	
							Surface		ULTRA MS	
							Tool holding device		HA parallel shank	
							Tolerance of cutting edge Ø		e8	
							Tolerance of shank Ø		h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16672... Ident. No.	
0.5	0.05	0.7	6	50	0.45	4	2	0.004	026	●
0.6	0.05	0.9	2	50	0.55	4	2	0.007	030	●
0.6	0.05	0.9	4	50	0.55	4	2	0.006	032	●
0.6	0.05	0.9	6	50	0.55	4	2	0.005	034	●
0.8	0.1	1.2	4	50	0.75	4	2	0.007	036	●
0.8	0.1	1.2	6	50	0.75	4	2	0.007	038	●
0.8	0.1	1.2	8	50	0.75	4	2	0.006	040	●
1	0.1	1.5	6	50	0.95	4	2	0.008	046	●
1	0.1	1.5	8	50	0.95	4	2	0.008	048	●
1	0.1	1.5	10	50	0.95	4	2	0.007	050	●
1	0.1	1.5	12	50	0.95	4	2	0.006	052	●
1	0.1	1.5	16	50	0.95	4	2	0.005	054	○
1.2	0.1	1.8	6	50	1.15	4	2	0.011	056	●
1.2	0.1	1.8	8	50	1.15	4	2	0.01	058	●
1.2	0.1	1.8	10	50	1.15	4	2	0.009	060	●
1.5	0.2	2.3	6	50	1.45	4	2	0.014	064	●
1.5	0.2	2.3	8	50	1.45	4	2	0.013	066	●
1.5	0.2	2.3	10	50	1.45	4	2	0.012	068	●
1.5	0.2	2.3	12	50	1.45	4	2	0.011	070	●
1.5	0.2	2.3	16	50	1.45	4	2	0.01	072	●
1.5	0.2	2.3	20	60	1.45	4	2	0.009	074	●
2	0.2	3	6	50	1.95	4	2	0.018	076	●
2	0.2	3	8	50	1.95	4	2	0.018	078	●
2	0.2	3	10	50	1.95	4	2	0.017	080	●
2	0.2	3	12	50	1.95	4	2	0.016	082	●
2	0.2	3	16	50	1.95	4	2	0.014	084	●
2	0.2	3	20	60	1.95	4	2	0.013	086	●
2	0.2	3	25	75	1.95	4	2	0.012	088	●
2.5	0.3	3.7	8	50	2.4	4	2	0.023	092	●
2.5	0.3	3.7	10	50	2.4	4	2	0.023	094	●
2.5	0.3	3.7	12	50	2.4	4	2	0.023	096	●
2.5	0.3	3.7	16	50	2.4	4	2	0.02	098	○
2.5	0.3	3.7	20	60	2.4	4	2	0.018	100	●
2.5	0.3	3.7	25	60	2.4	4	2	0.017	102	●
3	0.3	4.5	8	50	2.85	6	2	0.027	106	●
3	0.3	4.5	10	50	2.85	6	2	0.027	108	●
3	0.3	4.5	12	50	2.85	6	2	0.027	110	●
3	0.3	4.5	16	60	2.85	6	2	0.025	112	●
3	0.3	4.5	20	60	2.85	6	2	0.023	114	●
3	0.3	4.5	25	75	2.85	6	2	0.021	116	●
4	0.4	4.5	20	60	3.85	6	2	0.033	122	○
4	0.4	4.5	25	75	3.85	6	2	0.03	124	●
4	0.4	4.5	30	75	3.85	6	2	0.03	126	●
4	0.4	4.5	40	75	3.85	6	2	0.026	128	●

Prod. Gr. 152

ATORN® Solid carbide HPC torus milling cutter (Milling cutter design standard Company standard)

4 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 4 | 35°/38° | HB | HA | HPC

Application:
HPC torus milling cutter with an unequal twist and unequal pitch for smoothing and rough machining stainless steels and titanium, Ni and Co alloys. The unequal twist angle prevents vibration on the tool, thereby ensuring excellent finishing surfaces as well as higher feed rates and greater cutting depths.

Execution:
- Ultra-fine grain cemented carbide
- With clearance
- ULTRA MS high-performance coating
- Defined cutting edge rounding
- Centre cutting
- **Ident. No. 150–204:** HB straight shank
- **Ident. No. 210–264:** HA straight shank

Advantage:
- Rough machining and smoothing with a single tool
- Ideal for trochoidal milling
- HPC geometry for optimum feed rates and running smoothness
- Suitable for large cutting depths



Ident. No. 150–204



Ident. No. 210–264

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16672150-204	140	130		70	60										70	60	70		
16672210-264	140	130		70	60										70	60	70		

							Type	VA		VA	
							Surface	ULTRA MS		ULTRA MS	
							Tool holding device	HB parallel shank		HA parallel shank	
							Tolerance of cutting edge Ø	e8		e8	
							Tolerance of shank Ø	h6		h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16672... Ident. No.		16672... Ident. No.	
4	0.3	11	20	57	3.7	6	4	0.015	150	●	210	●
4	0.5	11	20	57	3.7	6	4	0.015	152	●	212	●
5	0.3	13	20	57	4.6	6	4	0.02	154	●	214	●
5	0.5	13	20	57	4.6	6	4	0.02	156	●	216	●
6	0.3	13	20	57	5.5	6	4	0.023	158	●	218	●
6	0.5	13	20	57	5.5	6	4	0.023	160	●	220	●
6	1	13	20	57	5.5	6	4	0.023	162	●	222	●
8	0.5	20	30	64	7.4	8	4	0.03	166	●	226	●
8	1	20	30	64	7.4	8	4	0.03	168	●	228	●
10	0.5	22	32	72	9.2	10	4	0.035	172	●	232	●
10	1	22	32	72	9.2	10	4	0.035	174	●	234	●
12	0.5	26	37	83	11	12	4	0.045	176	●	236	●
12	1	26	37	83	11	12	4	0.045	178	●	238	●
12	2	26	37	83	11	12	4	0.045	180	●	240	●
12	3	26	37	83	11	12	4	0.045	184	●	244	●
16	1	32	46	92	15	16	4	0.06	188	●	248	●
16	2	32	46	92	15	16	4	0.06	190	●	250	●
16	3	32	46	92	15	16	4	0.06	192	●	252	●
16	4	32	46	92	15	16	4	0.06	194	●	254	●
20	1	38	58	104	19	20	4	0.08	198	●	258	●
20	2	38	58	104	19	20	4	0.08	200	●	260	●
20	3	38	58	104	19	20	4	0.08	202	●	262	●
20	4	38	58	104	19	20	4	0.08	204	●	264	●

Prod. Gr. 152

ATORN® Solid carbide mini radius milling cutter (Milling cutter design standard Company standard)

2 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 2 | 30° | HA



Application:
High-precision miniature radius cutter with long neck for process-reliable machining of stainless steels and alloys of titanium, nickel and cobalt.

Execution:
- Ultrafine grain, cemented carbide
- Tolerance: < Ø 0.7 mm = 0/-0.012 mm and < Ø 4 mm = 0/-0.020 mm
- Radius tolerance = 0/-0.010 mm
- HA straight shank
- With clearance
- High-performance ULTRA MS coating
- Defined cutting edge rounding

Advantage:
- Broad range of clearance lengths
- Optimum chip removal and temperature resistance
- Maximum service life through ULTRA MS coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16674004-132	45	40		35	30										45	40	45		

						Type	VA		
						Surface	ULTRA MS		
						Tool holding device	HA parallel shank		
						Tolerance of cutting edge Ø	e8		
						Tolerance of shank Ø	h6		
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16674... Ident. No.	
0.2	0.2	1	50	0.15	4	2	0.003	004	●
0.3	0.3	2	50	0.25	4	2	0.003	010	●
0.4	0.4	1	50	0.35	4	2	0.005	014	●
0.4	0.4	2	50	0.35	4	2	0.005	016	●
0.4	0.4	3	50	0.35	4	2	0.003	018	●
0.4	0.4	4	50	0.35	4	2	0.003	020	●
0.5	0.4	2	50	0.45	4	2	0.006	024	●
0.5	0.4	4	50	0.45	4	2	0.004	028	●
0.5	0.4	6	50	0.45	4	2	0.004	032	●
0.6	0.5	2	50	0.55	4	2	0.007	036	●
0.6	0.5	4	50	0.55	4	2	0.005	040	●
0.6	0.5	6	50	0.55	4	2	0.005	044	●
0.8	0.6	4	50	0.75	4	2	0.008	050	●
0.8	0.6	6	50	0.75	4	2	0.006	054	●
0.8	0.6	8	50	0.75	4	2	0.006	056	●
1	0.8	3	50	0.95	4	2	0.01	060	●
1	0.8	4	50	0.95	4	2	0.01	062	●
1	0.8	6	50	0.95	4	2	0.007	066	●
1	0.8	8	50	0.95	4	2	0.007	068	●
1	0.8	10	50	0.95	4	2	0.007	070	●
1	0.8	12	50	0.95	4	2	0.007	072	●
1	0.8	20	50	0.95	4	2	0.006	074	●
1.2	1	6	50	1.15	4	2	0.012	076	●
1.2	1	8	50	1.15	4	2	0.008	078	○
1.5	1.2	8	50	1.45	4	2	0.014	084	●
1.5	1.2	12	50	1.45	4	2	0.01	086	●
1.5	1.2	16	50	1.45	4	2	0.01	088	●

							Type	VA	
							Surface	ULTRA MS	
							Tool holding device	HA parallel shank	
							Tolerance of cutting edge Ø	e8	
							Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16674... Ident. No.	
2	1.6	6	50	1.95	4	2	0.018	090	●
2	1.6	8	50	1.95	4	2	0.018	092	●
2	1.6	10	50	1.95	4	2	0.018	094	●
2	1.6	12	50	1.95	4	2	0.013	096	●
2	1.6	16	50	1.95	4	2	0.013	098	●
2	1.6	20	60	1.95	4	2	0.013	100	●
2	1.6	25	75	1.95	4	2	0.013	102	●
3	2.4	8	50	2.85	6	2	0.027	106	●
3	2.4	10	50	2.85	6	2	0.027	108	●
3	2.4	16	60	2.85	6	2	0.027	110	●
3	2.4	20	60	2.85	6	2	0.019	112	●
3	2.4	25	75	2.85	6	2	0.019	114	●
3	2.4	30	75	2.85	6	2	0.019	116	●
4	3.2	10	50	3.85	6	2	0.035	118	●
4	3.2	16	60	3.85	6	2	0.035	120	●
4	3.2	20	60	3.85	6	2	0.035	122	●
4	3.2	25	75	3.85	6	2	0.025	124	●
4	3.2	30	75	3.85	6	2	0.025	126	●
4	3.2	35	75	3.85	6	2	0.025	128	●
4	3.2	40	100	3.85	6	2	0.025	130	○
4	3.2	50	100	3.85	6	2	0.025	132	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 2 | 30° | HB | HA



Application:

Ident. No. 140–156: Radius cutter for machining stainless steels and alloys of titanium, nickel and cobalt.

Ident. No. 170–186: Radius milling cutter for machining stainless steel, titanium, Ni and Co alloys.

Execution:

- Radius tolerance = 0/-0.010 mm
- Reinforced core
- With clearance
- Defined cutting edge rounding
- **Ident. No. 140–156:**
  - Ultrafine grain, cemented carbide
  - HB straight shank
  - High-performance ULTRA MS coating
- **Ident. No. 170–186:**
  - Ultra-fine grain cemented carbide
  - HA straight shank
  - ULTRA MS high-performance coating

Advantage:

- Optimised, positive cutting geometry
- **Ident. No. 140–156:**
  - Optimum chip removal and temperature resistance
  - Maximum service life through ULTRA MS coating
- **Ident. No. 170–186:**
  - Excellent chip removal and temperature resistance
  - Maximum service life thanks to ULTRA MS coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16674140-156	150	140		75	65										70	60	70		
16674170-186	150	140		75	65										70	60	70		

							Type	VA		VA	
							Surface	ULTRA MS		ULTRA MS	
							Tool holding device	HB parallel shank		HA parallel shank	
							Tolerance of cutting edge Ø	e8		e8	
							Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)	16674... Ident. No.		16674... Ident. No.	
3	5	20	57	2.8	6	2	0.015	140	●	170	●
4	6	20	57	3.7	6	2	0.02	142	●	172	●
5	7	20	57	4.6	6	2	0.025	144	●	174	●
6	8	20	57	5.5	6	2	0.03	146	●	176	●
8	10	25	64	7.4	8	2	0.036	148	●	178	●
10	12	35	75	9.2	10	2	0.044	150	●	180	●
12	14	35	75	11	12	2	0.052	152	○	182	○
16	18	45	90	15	16	2	0.065	154	●	184	●
20	22	50	100	19	20	2	0.08	156	●	186	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 flutes, ULTRA MS-coated

VHM | ULTRA MS | Typ VA | Z 2 | 30° | HB | HA



Application:
Radius milling cutter for machining stainless steel, titanium, Ni and Co alloys.

Execution:
- Ultra-fine grain cemented carbide
- Radius tolerance = 0/-0.010 mm
- Reinforced core
- With clearance

- ULTRA MS high-performance coating
- Defined cutting edge rounding
- **Ident. No. 200–216:** HB straight shank
- **Ident. No. 230–246:** HA straight shank

Advantage:
- Optimised, positive cutting geometry
- Excellent chip removal and temperature resistance
- Maximum service life thanks to ULTRA MS coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16674200-216	150	140		75	65										70	60	70		
16674230-246	150	140		75	65										70	60	70		

								Type	VA		VA	
								Surface	ULTRA MS		ULTRA MS	
								Tool holding device	HB parallel shank		HA parallel shank	
								Tolerance of cutting edge Ø	e8		e8	
								Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steinl. st. ● (mm)		16674... Ident. No.		16674... Ident. No.	
3	5	21	75	2.8	6	2	0.015		200	●	230	●
4	8	28	75	3.7	6	2	0.02		202	●	232	●
5	9	32	75	4.6	6	2	0.025		204	●	234	●
6	10	40	75	5.5	8	2	0.03		206	●	236	●
8	12	40	75	7.4	10	2	0.036		208	●	-	-
10	14	60	100	9.2	10	2	0.044		210	●	240	●
12	16	60	100	11	12	2	0.052		212	●	242	●
16	32	80	125	15	16	2	0.065		214	●	244	●
20	38	80	125	19	20	2	0.08		216	●	246	●
8	12	40	75	7.4	8	2	0.036		-	-	238	●

Prod. Gr. 152

ATORN® Solid carbide miniature end mill (Milling cutter design standard Company standard)

2-cutter, RockTec 52-coated

VHM | RockTec 52 | Typ N | Z 2 | 40° | HA



Application:
Mini end mill in a short, stable design for machining materials up to 52 HRC, e.g. in dip working and mould forming.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank pursuant to DIN 6535
- With clearance

- Type N
- Chip angle 3°
- RockTec 52-coated
- Cutter tolerance Ø 0.1-0.7 mm = 0/-0.012 mm
- Cutter tolerance Ø 0.7-0.9 mm = 0/-0.020 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16972001-009	120	100	90	80	75									80	70	70	55	55	

							Type	N		N	
							Surface	RockTec 52		RockTec 52	
							Tool holding device	HA parallel shank		HA parallel shank	
							Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
							Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)		16972... Ident. No.		16972... Ident. No.	
0.1	0.2	40	4	2	0.001		001	○	-	-
0.2	0.4	40	4	2	0.001		002	●	-	-
0.3	0.6	40	4	2	0.002		003	●	-	-
0.4	0.8	40	4	2	0.002		004	●	-	-
0.5	1	40	4	2	0.003		005	●	-	-
0.6	1.2	40	4	2	0.003		006	●	-	-
0.7	1.4	40	4	2	0.004		007	○	-	-
0.8	1.6	40	4	2	0.004		-	-	008	●
0.9	1.8	40	4	2	0.005		-	-	009	○

Prod. Gr. 152

ATORN® Solid carbide miniature end mill (Milling cutter design standard Company standard)

2-cutter, RockTec 52-coated



Application:
Mini end mill with a long neck for machining materials up to 52 HRC, e.g. in dip working and mould forming.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank pursuant to DIN 6535
- With clearance

- Type N
- Chip angle 3°
- RockTec 52-coated
- Cutter tolerance Ø 0.1-0.7 mm = 0/-0.012 mm
- Cutter tolerance Ø 0.7-3.0 mm = 0/-0.020 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16972100-153	120	100	90	80	75									80	70	70	55	55	

								Type	N		N	
								Surface	RockTec 52		RockTec 52	
								Tool holding device	HA parallel shank		HA parallel shank	
								Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
								Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)		16972... Ident. No.		16972... Ident. No.	
0.2	0.3	0.5	50	0.16	4	2	0.001		100	●	-	-
0.2	0.3	1	50	0.16	4	2	0.001		101	●	-	-
0.2	0.3	1.5	50	0.16	4	2	0.001		102	●	-	-
0.3	0.4	1	50	0.26	4	2	0.002		103	●	-	-
0.3	0.4	2	50	0.26	4	2	0.002		104	●	-	-
0.3	0.4	3	50	0.26	4	2	0.002		105	●	-	-
0.4	0.6	2	50	0.37	4	2	0.002		106	●	-	-
0.4	0.6	3	50	0.37	4	2	0.002		107	●	-	-
0.4	0.6	4	50	0.37	4	2	0.002		108	●	-	-
0.4	0.6	5	50	0.37	4	2	0.002		109	○	-	-
0.5	0.7	2	50	0.45	4	2	0.003		110	●	-	-
0.5	0.7	4	50	0.45	4	2	0.003		111	●	-	-
0.5	0.7	6	50	0.45	4	2	0.003		112	●	-	-
0.5	0.7	8	50	0.45	4	2	0.003		113	○	-	-
0.6	0.9	2	50	0.55	4	2	0.003		114	●	-	-
0.6	0.9	4	50	0.55	4	2	0.003		115	●	-	-
0.6	0.9	6	50	0.55	4	2	0.003		116	●	-	-
0.6	0.9	8	50	0.55	4	2	0.003		117	○	-	-
0.6	0.9	10	50	0.55	4	2	0.003		118	○	-	-
0.8	1.2	4	50	0.75	4	2	0.004		-	-	119	●
0.8	1.2	6	50	0.75	4	2	0.004		-	-	120	●
0.8	1.2	8	50	0.75	4	2	0.004		-	-	121	●
0.8	1.2	10	50	0.75	4	2	0.004		-	-	122	○
0.8	1.2	12	50	0.75	4	2	0.004		-	-	123	○
1	1.5	6	50	0.95	4	2	0.005		-	-	124	●
1	1.5	8	50	0.95	4	2	0.005		-	-	125	●
1	1.5	10	50	0.95	4	2	0.005		-	-	126	●
1	1.5	12	50	0.95	4	2	0.005		-	-	127	●
1	1.5	14	50	0.95	4	2	0.005		-	-	128	○
1	1.5	16	60	0.95	4	2	0.005		-	-	129	●
1.2	1.8	6	50	1.15	4	2	0.006		-	-	130	●
1.2	1.8	10	50	1.15	4	2	0.006		-	-	131	●
1.5	2.3	8	50	1.45	4	2	0.008		-	-	132	●
1.5	2.3	12	50	1.45	4	2	0.008		-	-	133	●
1.5	2.3	16	50	1.45	4	2	0.008		-	-	134	●
1.5	2.3	20	60	1.45	4	2	0.008		-	-	135	●
2	3	6	50	1.95	4	2	0.01		-	-	136	●
2	3	8	50	1.95	4	2	0.01		-	-	137	●
2	3	12	50	1.95	4	2	0.01		-	-	138	●
2	3	16	50	1.95	4	2	0.01		-	-	139	●
2	3	20	60	1.95	4	2	0.01		-	-	140	●
2	3	25	75	1.95	4	2	0.01		-	-	141	●
2.5	3.7	8	50	2.4	4	2	0.013		-	-	142	●
2.5	3.7	10	50	2.4	4	2	0.013		-	-	143	○
2.5	3.7	12	50	2.4	4	2	0.013		-	-	144	●
2.5	3.7	16	50	2.4	4	2	0.013		-	-	145	●
2.5	3.7	20	60	2.4	4	2	0.013		-	-	146	●
2.5	3.7	25	75	2.4	4	2	0.013		-	-	147	●
3	4.5	8	50	2.85	6	2	0.016		-	-	148	●
3	4.5	10	50	2.85	6	2	0.016		-	-	149	○
3	4.5	12	50	2.85	6	2	0.016		-	-	150	●
3	4.5	16	60	2.85	6	2	0.016		-	-	151	●
3	4.5	20	60	2.85	6	2	0.016		-	-	152	●
3	4.5	25	75	2.85	6	2	0.016		-	-	153	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



Application:
End mill in a standard design for machining materials up to 52 HRC, e.g. in dip working and mould forming.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank pursuant to DIN 6535

- With clearance
- Type N
- Chip angle 3°
- RockTec 52-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16972200-208	160	150	120	115	100									130	100	90	80	70	

								Type	N	
								Surface	RockTec 52	
								Tool holding device	HA parallel shank	
								Tolerance of cutting edge Ø	e8	
								Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16972... Ident. No.		
3	9	15	50	2.8	6	4	0.03	200	●	
4	12	20	50	3.7	6	4	0.04	201	●	
5	15	20	50	4.6	6	4	0.05	202	●	
6	16	20	50	5.5	6	4	0.06	203	●	
8	20	30	64	7.4	8	4	0.08	204	●	
10	22	32	70	9.2	10	4	0.09	205	●	
12	25	37	75	11	12	4	0.1	206	●	
16	32	46	90	15	16	4	0.12	207	●	
20	38	58	100	19	20	4	0.16	208	●	

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



Application:
End mill in a long design with short cutters for machining materials up to 52 HRC, e.g. in dip working and mould forming.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank pursuant to DIN 6535

- With clearance
- Type N
- Chip angle 3°
- RockTec 52-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16972220-228	145	135	110	105	90									120	90	80	70	65	

								Type	N	
								Surface	RockTec 52	
								Tool holding device	HA parallel shank	
								Tolerance of cutting edge Ø	e8	
								Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16972... Ident. No.		
3	5	30	75	2.8	6	4	0.027	220	●	
4	8	32	75	3.7	6	4	0.035	221	●	
5	9	32	75	4.6	6	4	0.045	222	●	
6	10	40	75	5.5	6	4	0.05	223	●	
8	12	40	75	7.4	8	4	0.07	224	●	
10	14	60	100	9.2	10	4	0.08	225	●	
12	16	60	100	11	12	4	0.09	226	●	
16	22	85	125	15	16	4	0.11	227	●	
20	26	85	125	19	20	4	0.14	228	○	

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



Application:
End mill in an extra-long design with short cutters for machining materials up to 52 HRC, e.g. in dip working and mould forming.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank pursuant to DIN 6535
- With clearance
- Type N
- Chip angle 3°
- RockTec 52-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16972230-238	130	120	100	95	80									110	80	70	65	60	

Type	N
Surface	RockTec 52
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16972... Ident. No.	
3	5	60	100	2.8	6	4	0.025	230	○
4	8	60	100	3.7	6	4	0.03	231	●
5	9	60	100	4.6	6	4	0.04	232	●
6	10	60	100	5.5	6	4	0.045	233	●
8	12	60	100	7.4	8	4	0.065	234	●
10	14	85	125	9.2	10	4	0.07	235	●
12	16	110	150	11	12	4	0.08	236	●
16	22	110	150	15	16	4	0.1	237	●
20	26	110	150	19	20	4	0.13	238	○

Prod. Gr. 152

ATORN® SC multi-tooth mills (Milling cutter design standard Company standard)

6 flutes, RockTec 52 coated



Application:
Multi-tooth mill for circumferential machining, fine finishing and semi-roughing up to 52 HRC.

Execution:
- Solid carbide ultra-fine grain
- Centre cutting
- Edge protection chamfer
- HA shank pursuant to DIN 6535
- Cutting edge finish
- With clearance
- Type N
- Chip angle 3°
- RockTec 52-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16972240-248	160	150	120	115	100									130	100	90	80	70	

Type	N
Surface	RockTec 52
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz steel 1300 ● (mm)	16972... Ident. No.	
3	8	20	50	2.8	6	0.1	6	0.027	240	●
4	11	20	50	3.7	6	0.1	6	0.035	241	●
5	13	20	50	4.6	6	0.1	6	0.045	242	●
6	15	20	50	5.5	6	0.1	6	0.055	243	●
8	20	30	64	7.4	8	0.2	6	0.07	244	●
10	22	32	70	9.2	10	0.2	6	0.08	245	●
12	25	37	75	11	12	0.2	6	0.09	246	●
16	30	46	90	15	16	0.3	8	0.11	247	●
20	38	58	100	19	20	0.4	8	0.14	248	●

Prod. Gr. 152

ATORN® SC multi-tooth mills (Milling cutter design standard Company standard)

6 flutes, RockTec 52 coated



Application:
Multi-tooth mill for circumferential machining, fine finishing and semi-roughing up to 52 HRC.

Execution:
- Solid carbide ultra-fine grain
- Centre cutting
- Edge protection chamfer
- HA shank pursuant to DIN 6535
- Cutting edge finish
- With clearance
- Type N
- Chip angle 3°
- RockTec 52-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16972250-258	145	135	110	105	90									120	90	80	70	65	

									Type	N	
									Surface	RockTec 52	
									Tool holding device	HA parallel shank	
									Tolerance of cutting edge Ø	e8	
									Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	F→ mm	Z (PCS)	fz steel 1300 ● (mm)	16972... Ident. No.		
3	19	30	75	2.8	6	0.1	6	0.025	250	○	
4	19	32	75	3.7	6	0.1	6	0.03	251	●	
5	19	32	75	4.6	6	0.1	6	0.04	252	●	
6	31	40	75	5.5	6	0.1	6	0.045	253	●	
8	31	40	75	7.4	8	0.2	6	0.06	254	●	
10	45	60	100	9.2	10	0.2	6	0.07	255	●	
12	50	60	100	11	12	0.2	6	0.08	256	●	
16	57	85	125	15	16	0.3	8	0.1	257	●	
20	57	85	125	19	20	0.4	8	0.13	258	●	

Prod. Gr. 152

ATORN® Solid carbide miniature torus milling cutter (Milling cutter design standard Company standard)

2 flutes, RockTec 52 coated



Application:
Miniature torus milling cutter with a long neck for machining materials up to 52 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance
- Type N
- Chip angle 3°
- RockTec 52-coated
- Cutter tolerance Ø 0.2-0.7 mm = 0/-0.012 mm
- Cutter tolerance Ø 0.7-3.0 mm = 0/-0.020 mm
- Radius tolerance = 0/-0.010 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16973001-054	135	100	100	80	85									80	75	70	60	55	

										Type	N		N		
										Surface	RockTec 52		RockTec 52		
										Tool holding device	HA parallel shank		HA parallel shank		
										Tolerance of cutting edge Ø	0/-0.012		0/-0.02		
										Tolerance of shank Ø	h6		h6		
mm	R→ mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.		16973... Ident. No.				
0.2	0.02	0.3	0.5	50	0.16	4	2	0.003	001	●	-	-			
0.2	0.02	0.3	1	50	0.16	4	2	0.003	002	○	-	-			
0.2	0.02	0.3	1.5	50	0.16	4	2	0.003	003	○	-	-			
0.3	0.03	0.4	1	50	0.26	4	2	0.004	004	●	-	-			
0.3	0.03	0.4	2	50	0.26	4	2	0.004	005	●	-	-			
0.3	0.03	0.4	3	50	0.26	4	2	0.004	006	○	-	-			
0.4	0.03	0.6	2	50	0.37	4	2	0.005	007	●	-	-			
0.4	0.03	0.6	3	50	0.37	4	2	0.005	008	●	-	-			
0.4	0.03	0.6	4	50	0.37	4	2	0.005	009	○	-	-			
0.4	0.03	0.6	5	50	0.37	4	2	0.005	010	○	-	-			
0.5	0.05	0.7	2	50	0.45	4	2	0.007	011	●	-	-			
0.5	0.05	0.7	4	50	0.45	4	2	0.007	012	●	-	-			
0.5	0.05	0.7	6	50	0.45	4	2	0.007	013	●	-	-			
0.5	0.05	0.7	8	50	0.45	4	2	0.007	014	○	-	-			
0.6	0.05	0.9	2	50	0.55	4	2	0.008	015	●	-	-			
0.6	0.05	0.9	4	50	0.55	4	2	0.008	016	●	-	-			

								Type	N		N	
								Surface	RockTec 52		RockTec 52	
								Tool holding device	HA parallel shank		HA parallel shank	
								Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
								Tolerance of shank Ø	h6		h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.		16973... Ident. No.	
0.6	0.05	0.9	6	50	0.55	4	2	0.008	017	●	-	-
0.6	0.05	0.9	8	50	0.55	4	2	0.008	018	○	-	-
0.6	0.05	0.9	10	50	0.55	4	2	0.008	019	○	-	-
0.8	0.08	1.2	4	50	0.75	4	2	0.01	-	-	020	●
0.8	0.08	1.2	6	50	0.75	4	2	0.01	-	-	021	●
0.8	0.08	1.2	8	50	0.75	4	2	0.01	-	-	022	●
0.8	0.08	1.2	10	50	0.75	4	2	0.01	-	-	023	○
0.8	0.08	1.2	12	50	0.75	4	2	0.01	-	-	024	○
1	0.1	1.5	6	50	0.95	4	2	0.013	-	-	025	●
1	0.1	1.5	8	50	0.95	4	2	0.013	-	-	026	●
1	0.1	1.5	10	50	0.95	4	2	0.013	-	-	027	●
1	0.1	1.5	12	50	0.95	4	2	0.013	-	-	028	●
1	0.1	1.5	14	50	0.95	4	2	0.013	-	-	029	●
1	0.1	1.5	16	60	0.95	4	2	0.013	-	-	030	●
1.2	0.1	1.8	6	50	1.15	4	2	0.016	-	-	031	●
1.2	0.1	1.8	10	50	1.15	4	2	0.016	-	-	032	○
1.5	0.15	2.3	8	50	1.45	4	2	0.02	-	-	033	●
1.5	0.15	2.3	12	50	1.45	4	2	0.02	-	-	034	●
1.5	0.15	2.3	16	50	1.45	4	2	0.02	-	-	035	●
1.5	0.15	2.3	20	60	1.45	4	2	0.02	-	-	036	●
2	0.2	3	6	50	1.95	4	2	0.027	-	-	037	●
2	0.2	3	8	50	1.95	4	2	0.027	-	-	038	●
2	0.2	3	12	50	1.95	4	2	0.027	-	-	039	●
2	0.2	3	16	50	1.95	4	2	0.027	-	-	040	●
2	0.2	3	20	60	1.95	4	2	0.027	-	-	041	●
2	0.2	3	25	75	1.95	4	2	0.027	-	-	042	○
2.5	0.3	3.7	8	50	2.4	4	2	0.033	-	-	043	●
2.5	0.3	3.7	10	50	2.4	4	2	0.033	-	-	044	●
2.5	0.3	3.7	12	50	2.4	4	2	0.033	-	-	045	●
2.5	0.3	3.7	16	50	2.4	4	2	0.033	-	-	046	●
2.5	0.3	3.7	20	60	2.4	4	2	0.033	-	-	047	○
2.5	0.3	3.7	25	75	2.4	4	2	0.033	-	-	048	○
3	0.3	4.5	8	50	2.85	6	2	0.04	-	-	049	●
3	0.3	4.5	10	50	2.85	6	2	0.04	-	-	050	●
3	0.3	4.5	12	50	2.85	6	2	0.04	-	-	051	●
3	0.3	4.5	16	60	2.85	6	2	0.04	-	-	052	●
3	0.3	4.5	20	60	2.85	6	2	0.04	-	-	053	●
3	0.3	4.5	25	75	2.85	6	2	0.04	-	-	054	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated





Application:
Torus milling cutter for universal machining of materials up to 52 HRC, e.g. for countersinking and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52 coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16973100-127	160	150	120	115	100									130	100	90	80	70	

							Type	N	
							Surface	RockTec 52	
							Tool holding device	HA parallel shank	
							Tolerance of cutting edge Ø	e8	
							Tolerance of shank Ø	h6	
mm	R mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.	
3	0.3	9	50	6	4	0.03	100	●
3	0.5	9	50	6	4	0.03	101	●
4	0.3	12	50	6	4	0.04	102	●
4	0.5	12	50	6	4	0.04	103	●
4	1	12	50	6	4	0.04	104	●
5	0.5	15	50	6	4	0.05	105	●
5	1	15	50	6	4	0.05	106	●
5	0.3	15	50	6	4	0.05	126	●
6	0.3	20	60	6	4	0.06	107	●
6	0.5	20	60	6	4	0.06	108	●
6	1	20	60	6	4	0.06	109	●
8	0.5	20	64	8	4	0.08	110	●

						Type	N	
						Surface	RockTec 52	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h6	
mm	R mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.	
8	1	20	64	8	4	0.08	111	●
8	1.5	20	64	8	4	0.08	112	●
8	2	20	64	8	4	0.08	113	●
10	0.5	22	75	10	4	0.09	114	●
10	1.5	22	75	10	4	0.09	115	●
10	2	22	75	10	4	0.09	116	●
10	1	22	75	10	4	0.09	127	●
12	1	25	75	12	4	0.1	117	●
12	2	25	75	12	4	0.1	118	●
12	3	25	75	12	4	0.1	119	●
16	1	32	90	16	4	0.12	120	●
16	2	32	90	16	4	0.12	121	●
16	3	32	90	16	4	0.12	122	●
20	1	38	100	20	4	0.16	123	●
20	2	38	100	20	4	0.16	124	●
20	3	38	100	20	4	0.16	125	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



Application:
Torus milling cutter with short cutter for machining materials up to 52 HRC, e.g. for countersinking and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52 coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16973130-145	160	150	120	115	100									130	100	90	80	70	

							Type	N	
							Surface	RockTec 52	
							Tool holding device	HA parallel shank	
							Tolerance of cutting edge Ø	e8	
							Tolerance of shank Ø	h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.	
3	0.3	4	14	60	2.8	6	4	0.03	130	●
3	0.5	4	14	60	2.8	6	4	0.03	131	●
4	0.3	5	16	60	3.7	6	4	0.04	132	●
4	0.5	5	16	60	3.7	6	4	0.04	133	●
5	0.3	6	18	60	4.6	6	4	0.05	134	●
5	0.5	6	18	60	4.6	6	4	0.05	135	●
6	0.5	7	20	60	5.5	6	4	0.06	136	●
6	1	7	20	60	5.5	6	4	0.06	137	●
8	0.5	9	26	64	7.4	8	4	0.08	138	●
8	1	9	26	64	7.4	8	4	0.08	139	●
10	1	11	31	70	9.2	10	4	0.09	140	●
10	2	11	31	70	9.2	10	4	0.09	141	●
12	1	13	37	75	11	12	4	0.1	142	●
12	2	13	37	75	11	12	4	0.1	143	●
16	1	17	43	90	15	16	4	0.12	144	●
16	2	17	43	90	15	16	4	0.12	145	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



Application:
Torus milling cutter long with short cutter for machining materials up to 52 HRC, e.g. for countersinking and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52 coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16973150-165	145	135	110	105	90									120	90	80	70	65	

Type	N
Surface	RockTec 52
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

	R						Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.	
mm	mm	mm	mm	mm	mm	mm				
3	0.3	5	30	75	2.8	6	4	0.025	150	●
3	0.5	5	30	75	2.8	6	4	0.025	151	●
4	0.3	8	32	75	3.7	6	4	0.03	152	●
4	0.5	8	32	75	3.7	6	4	0.03	153	●
5	0.3	9	32	75	4.6	6	4	0.04	154	●
5	0.5	9	32	75	4.6	6	4	0.04	155	●
6	0.5	10	40	75	5.5	6	4	0.05	156	●
6	1	10	40	75	5.5	6	4	0.05	157	●
8	0.5	12	40	75	7.4	8	4	0.07	158	●
8	1	12	40	75	7.4	8	4	0.07	159	●
10	1	14	60	100	9.2	10	4	0.08	160	●
10	2	14	60	100	9.2	10	4	0.08	161	●
12	1	16	60	100	11	12	4	0.09	162	●
12	2	16	60	100	11	12	4	0.09	163	●
16	1	22	85	125	15	16	4	0.11	164	●
16	2	22	85	125	15	16	4	0.11	165	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



Application:
Torus milling cutter extra long with short cutter for machining materials up to 52 HRC, e.g. for countersinking and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52 coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16973170-185	135	130	105	100	85									110	85	75	70	60	

Type	N
Surface	RockTec 52
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

	R						Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.	
mm	mm	mm	mm	mm	mm	mm				
3	0.3	5	60	100	2.8	6	4	0.02	170	○
3	0.5	5	60	100	2.8	6	4	0.02	171	○
4	0.3	8	60	100	3.7	6	4	0.025	172	●
4	0.5	8	60	100	3.7	6	4	0.025	173	●
5	0.3	9	60	100	4.6	6	4	0.035	174	●
5	0.5	9	60	100	4.6	6	4	0.035	175	●
6	0.5	10	60	100	5.5	6	4	0.04	176	●
6	1	10	60	100	5.5	6	4	0.04	177	●
8	0.5	12	60	100	7.4	8	4	0.06	178	●
8	1	12	60	100	7.4	8	4	0.06	179	●

							Type	N	
							Surface	RockTec 52	
							Tool holding device	HA parallel shank	
							Tolerance of cutting edge Ø	e8	
							Tolerance of shank Ø	h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16973... Ident. No.	
10	1	14	85	125	9.2	10	4	0.07	180	●
10	2	14	85	125	9.2	10	4	0.07	181	●
12	1	16	110	150	11	12	4	0.08	182	●
12	2	16	110	150	11	12	4	0.08	183	●
16	1	22	110	150	15	16	4	0.1	184	○
16	2	22	110	150	15	16	4	0.1	185	○

Prod. Gr. 152

ATORN® Solid carbide HSC high-feed milling cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated



Application:
High-feed milling cutter (HSC) with short blade for processing materials up to 65 HRC. Applications in die and mould making and general mechanical engineering.

Execution:
- Solid carbide ultra-fine grain
- HA shank in line with DIN 6535
- Cutting edge finish
- Centre cutting

- Type H
- Chip angle -1°
- Twist angle 3°
- RockTec 65-coated

Advantage:
- High material removal rate, high surface quality
- High feeds of 0.2-0.5 mm per tooth possible
- Good dimensional and geometric accuracy
- RockTec 65 coating for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16976190-201		170	160	140														90	120

							Type	H	
							Surface	RockTec 65	
							Tool holding device	HA parallel shank	
							Tolerance of cutting edge Ø	e8	
							Tolerance of shank Ø	h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.	
4	0.4	1.5	8	57	3.7	6	4	0.13	190	●
4	0.4	1.5	15	57	3.7	6	4	0.13	191	●
5	0.5	2	10	57	4.6	6	4	0.17	192	●
5	0.5	2	21	57	4.6	6	4	0.17	193	●
6	0.6	2.5	12	57	5.5	6	4	0.2	194	●
6	0.6	2.5	26	57	5.5	6	4	0.2	195	●
8	0.8	3	16	63	7.4	8	6	0.24	196	●
8	0.8	3	31	63	7.4	8	6	0.24	197	●
10	1	3.5	20	72	9.2	10	6	0.34	198	●
10	1	3.5	36	72	9.2	10	6	0.34	199	●
12	1.2	4	24	83	11	12	6	0.42	200	●
12	1.2	4	41	83	11	12	6	0.42	201	●

Prod. Gr. 152

ATORN® Solid carbide miniature radius milling cutter (Milling cutter design standard Company standard)

2 cutting edges, RockTec 52-coated



Application:
Miniature radius milling cutter in a short, stable design for machining materials up to 52 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535

- Type N
- Chip angle 3°
- RockTec 52-coated
- Cutter tolerance Ø 0.2-0.7 mm = 0/-0.012 mm
- Cutter tolerance Ø 0.7-0.9 mm = 0/-0.020 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16974001-008	135	110	100	90	85									90	75	75	60	60	

					Type	N		N	
					Surface	RockTec 52		RockTec 52	
					Tool holding device	HA parallel shank		HA parallel shank	
					Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
					Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.		16974... Ident. No.	
0.2	0.4	40	4	2	0.003	001	○	-	-
0.3	0.6	40	4	2	0.004	002	●	-	-
0.4	0.8	40	4	2	0.005	003	●	-	-
0.5	1	40	4	2	0.007	004	●	-	-
0.6	1.4	40	4	2	0.008	005	●	-	-
0.7	1.6	40	4	2	0.009	006	○	-	-
0.8	1.8	40	4	2	0.01	-	-	007	●
0.9	2	40	4	2	0.012	-	-	008	●

Prod. Gr. 152

ATORN® Solid carbide miniature radius milling cutter (Milling cutter design standard Company standard)

2 flutes, RockTec 52 coated





Application:
Miniature radius milling cutter with a long neck for machining materials up to 52 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance

- Type N
- Chip angle 3°
- RockTec 52-coated
- Cutter tolerance Ø 0.2-0.7 mm = 0/-0.012 mm
- Cutter tolerance Ø 0.7-3.0 mm = 0/-0.020 mm
- Radius tolerance = 0/-0.010 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16974100-153	135	110	100	90	85									90	75	75	60	60	

						Type	N		N	
						Surface	RockTec 52		RockTec 52	
						Tool holding device	HA parallel shank		HA parallel shank	
						Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
						Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.		16974... Ident. No.	
0.2	0.2	0.5	50	0.15	4	2	0.003	100	●	-	-
0.2	0.2	1	50	0.15	4	2	0.003	101	●	-	-
0.2	0.2	1.5	50	0.15	4	2	0.003	102	●	-	-
0.3	0.3	1	50	0.25	4	2	0.004	103	●	-	-
0.3	0.3	2	50	0.25	4	2	0.004	104	●	-	-
0.3	0.3	3	50	0.25	4	2	0.004	105	●	-	-
0.4	0.4	1	50	0.35	4	2	0.005	106	●	-	-
0.4	0.4	2	50	0.35	4	2	0.005	107	●	-	-
0.4	0.4	3	50	0.35	4	2	0.005	108	●	-	-
0.4	0.4	4	50	0.35	4	2	0.005	109	○	-	-
0.4	0.4	5	50	0.35	4	2	0.005	110	○	-	-
0.5	0.4	2	50	0.45	4	2	0.007	111	●	-	-
0.5	0.4	3	50	0.45	4	2	0.007	112	●	-	-
0.5	0.4	4	50	0.45	4	2	0.007	113	●	-	-
0.5	0.4	5	50	0.45	4	2	0.007	114	●	-	-
0.5	0.4	6	50	0.45	4	2	0.007	115	○	-	-
0.5	0.4	8	50	0.45	4	2	0.007	116	○	-	-
0.6	0.5	2	50	0.55	4	2	0.008	117	●	-	-
0.6	0.5	3	50	0.55	4	2	0.008	118	●	-	-
0.6	0.5	4	50	0.55	4	2	0.008	-	-	119	●
0.6	0.5	5	50	0.55	4	2	0.008	-	-	120	●
0.6	0.5	6	50	0.55	4	2	0.008	-	-	121	●
0.6	0.5	8	50	0.55	4	2	0.008	-	-	122	○
0.8	0.6	2	50	0.75	4	2	0.01	-	-	123	○
0.8	0.6	4	50	0.75	4	2	0.01	-	-	124	●
0.8	0.6	5	50	0.75	4	2	0.01	-	-	125	●
0.8	0.6	6	50	0.75	4	2	0.01	-	-	126	●
0.8	0.6	7	50	0.75	4	2	0.01	-	-	127	○
0.8	0.6	8	50	0.75	4	2	0.01	-	-	128	●
0.8	0.6	10	50	0.75	4	2	0.01	-	-	129	●
1	0.8	3	50	0.95	4	2	0.013	-	-	130	●
1	0.8	6	50	0.95	4	2	0.013	-	-	131	●
1	0.8	8	50	0.95	4	2	0.013	-	-	132	●
1	0.8	10	50	0.95	4	2	0.013	-	-	133	●
1	0.8	12	50	0.95	4	2	0.013	-	-	134	●
1	0.8	16	50	0.95	4	2	0.013	-	-	135	●
1	0.8	20	60	0.95	4	2	0.013	-	-	136	●
1.2	1	6	50	1.15	4	2	0.016	-	-	137	●
1.2	1	10	50	1.15	4	2	0.016	-	-	138	●
1.5	1.2	8	50	1.45	4	2	0.02	-	-	139	●
1.5	1.2	12	50	1.45	4	2	0.02	-	-	140	●

						Type		N		N	
						Surface		RockTec 52		RockTec 52	
						Tool holding device		HA parallel shank		HA parallel shank	
						Tolerance of cutting edge Ø		0/-0.012		0/-0.02	
						Tolerance of shank Ø		h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.		16974... Ident. No.	
1.5	1.2	16	50	1.45	4	2	0.02	-	-	141	●
1.5	1.2	18	60	1.45	4	2	0.02	-	-	142	●
2	1.6	4	50	1.95	4	2	0.027	-	-	143	●
2	1.6	8	50	1.95	4	2	0.027	-	-	144	●
2	1.6	12	50	1.95	4	2	0.027	-	-	145	●
2	1.6	16	50	1.95	4	2	0.027	-	-	146	●
2	1.6	20	60	1.95	4	2	0.027	-	-	147	●
2	1.6	25	75	1.95	4	2	0.027	-	-	148	●
3	2.4	8	50	2.85	6	2	0.04	-	-	149	●
3	2.4	10	50	2.85	6	2	0.04	-	-	150	●
3	2.4	16	60	2.85	6	2	0.04	-	-	151	●
3	2.4	20	60	2.85	6	2	0.04	-	-	152	●
3	2.4	25	75	2.85	6	2	0.04	-	-	153	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 flutes, RockTec 52 coated



Application:
Radius cutter in standard design for machining materials up to 52 HRC, e.g. in die and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52-coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16974200-210	175	165	130	125	110									145	110	100	90	75	

						Type		N	
						Surface		RockTec 52	
						Tool holding device		HA parallel shank	
						Tolerance of cutting edge Ø		e8	
						Tolerance of shank Ø		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.	
2	4	8	40	1.85	4	2	0.03	200	●
2.5	4	10	40	2.35	4	2	0.035	201	○
3	5	14	50	2.8	4	2	0.04	202	●
4	8	20	50	3.7	4	2	0.04	203	●
5	9	20	50	4.6	6	2	0.05	204	●
6	10	20	50	5.5	6	2	0.06	205	●
8	12	30	64	7.4	8	2	0.08	206	●
10	14	32	70	9.2	10	2	0.09	207	●
12	16	38	75	11	12	2	0.1	208	●
16	32	46	90	15	16	2	0.12	209	●
20	38	58	100	19	20	2	0.14	210	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 flutes, RockTec 52 coated



Application:
Radius cutter in long design for machining materials up to 52 HRC, e.g. in die and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52-coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16974220-230	160	150	120	110	100									130	100	90	80	65	

						Type	N	
						Surface	RockTec 52	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.	
2	4	14	75	1.85	6	2	0.025	220	●
2.5	4	18	75	2.35	6	2	0.03	221	●
3	5	21	75	2.8	6	2	0.035	222	●
4	8	28	75	3.7	6	2	0.035	223	●
5	9	32	75	4.6	6	2	0.04	224	●
6	10	40	75	5.5	6	2	0.05	225	●
8	12	40	75	7.4	8	2	0.07	226	●
10	14	60	100	9.2	10	2	0.08	227	●
12	16	60	100	11	12	2	0.09	228	●
16	32	80	125	15	16	2	0.1	229	●
20	38	80	125	19	20	2	0.12	230	○

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 flutes, RockTec 52 coated



VHM | RockTec 52 | Typ N | Z 2 | 30° | HA

Application:
Radius cutter in extra-long design for machining materials up to 52 HRC, e.g. in die and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52-coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16974240-250	150	140	110	105	95									125	95	85	75	65	

						Type	N	
						Surface	RockTec 52	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.	
2	4	20	100	1.85	6	2	0.02	240	●
2.5	4	25	100	2.35	6	2	0.025	241	○
3	5	30	100	2.8	6	2	0.03	242	●
4	8	40	100	3.7	6	2	0.03	243	●
5	9	50	100	4.6	6	2	0.035	244	●
6	10	60	150	5.5	6	2	0.04	245	●
8	12	80	150	7.4	8	2	0.06	246	●
10	14	100	150	9.2	10	2	0.07	247	●
12	16	110	150	11	12	2	0.08	248	●
16	32	150	200	15	16	2	0.09	249	●
20	38	150	200	19	20	2	0.1	250	○

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



VHM | RockTec 52 | Typ N | Z 4 | 30° | HA

Application:
Radius cutter in standard design for machining materials up to 52 HRC, e.g. in die and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type N
- 3° chip angle
- RockTec 52-coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16974260-268	175	165	130	125	110									145	110	100	90	75	

						Type	N	
						Surface	RockTec 52	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.	
3	5	14	50	2.8	6	4	0.03	260	●
4	8	20	50	3.7	6	4	0.04	261	●
5	9	20	50	4.6	6	4	0.05	262	●
6	10	20	50	5.5	6	4	0.06	263	●
8	12	30	64	7.4	8	4	0.08	264	●
10	14	32	70	9.2	10	4	0.09	265	●
12	16	38	75	11	12	4	0.1	266	●
16	32	46	90	15	16	4	0.12	267	●
20	38	58	100	19	20	4	0.14	268	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

4 cutters, RockTec 52 coated



Application:
Radius cutter in long design for machining materials up to 52 HRC, e.g. in die and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance

- type N
- 3° chip angle
- RockTec 52-coated
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 52 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16974270-278	160	150	120	110	100									130	100	90	80	65	

						Type	N	
						Surface	RockTec 52	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz steel 1300 ● (mm)	16974... Ident. No.	
3	5	21	75	2.8	6	4	0.025	270	●
4	8	28	75	3.7	6	4	0.035	271	●
5	9	32	75	4.6	6	4	0.04	272	●
6	10	40	75	5.5	6	4	0.05	273	●
8	12	40	75	7.4	8	4	0.07	274	●
10	14	60	100	9.2	10	4	0.08	275	●
12	16	60	100	11	12	4	0.09	276	●
16	32	80	125	15	16	4	0.1	277	●
20	38	80	125	19	20	4	0.12	278	●

Prod. Gr. 152

ATORN® Solid carbide miniature end mill (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated



Application:
Mini end mill in a short, stable design for machining materials up to 65 HRC, e.g. in dip working and mould forming.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank pursuant to DIN 6535
- With clearance

- Type H
- Chip angle -5°
- RockTec 65-coated
- Cutter tolerance Ø 0.1-0.7 mm = 0/-0.012 mm
- Cutter tolerance Ø 0.7-0.9 mm = 0/-0.020 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16975001-009		120	100	95													55	80	70

					Type	H		H	
					Surface	RockTec 65		RockTec 65	
					Tool holding device	HA parallel shank		HA parallel shank	
					Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
					Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.		16975... Ident. No.	
0.1	0.2	40	4	2	0.001	001	○	-	-
0.2	0.4	40	4	2	0.001	002	●	-	-
0.3	0.6	40	4	2	0.001	003	●	-	-
0.4	0.8	40	4	2	0.002	004	●	-	-
0.5	1.2	40	4	2	0.002	005	●	-	-
0.6	1.4	40	4	2	0.002	006	●	-	-
0.7	1.6	40	4	2	0.003	007	○	-	-
0.8	1.8	40	4	2	0.003	-	-	008	●
0.9	1.8	40	4	2	0.004	-	-	009	○

Prod. Gr. 152

ATORN® Solid carbide miniature end mill (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated





Application:
Mini end mill with a long neck for machining materials up to 65 HRC, e.g. in dip working and mould forming.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank pursuant to DIN 6535
- With clearance

- Type H
- Chip angle -5°/-7°
- RockTec 65-coated
- Cutter tolerance Ø 0.1-0.7 mm = 0/-0.012 mm
- Cutter tolerance Ø 0.7-3.0 mm = 0/-0.020 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16975100-153		120	100	95													55	80	70

							Type	H		H	
							Surface	RockTec 65		RockTec 65	
							Tool holding device	HA parallel shank		HA parallel shank	
							Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
							Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.		16975... Ident. No.	
0.2	0.3	0.5	50	0.16	4	2	0.002	100	●	-	-
0.2	0.3	1	50	0.16	4	2	0.002	101	●	-	-
0.2	0.3	1.5	50	0.16	4	2	0.002	102	○	-	-
0.3	0.4	1	50	0.26	4	2	0.003	103	○	-	-
0.3	0.4	2	50	0.26	4	2	0.003	104	●	-	-
0.3	0.4	3	50	0.26	4	2	0.003	105	○	-	-
0.4	0.6	2	50	0.37	4	2	0.004	106	●	-	-
0.4	0.6	3	50	0.37	4	2	0.004	107	●	-	-
0.4	0.6	4	50	0.37	4	2	0.004	108	○	-	-
0.4	0.6	5	50	0.37	4	2	0.004	109	○	-	-
0.5	0.7	2	50	0.45	4	2	0.005	110	●	-	-
0.5	0.7	4	50	0.45	4	2	0.005	111	●	-	-
0.5	0.7	6	50	0.45	4	2	0.005	112	●	-	-
0.5	0.7	8	50	0.45	4	2	0.005	113	○	-	-
0.6	0.9	2	50	0.55	4	2	0.006	114	●	-	-
0.6	0.9	4	50	0.55	4	2	0.006	115	●	-	-
0.6	0.9	6	50	0.55	4	2	0.006	116	●	-	-
0.6	0.9	8	50	0.55	4	2	0.006	117	○	-	-
0.6	0.9	10	50	0.55	4	2	0.006	118	○	-	-
0.8	1.2	4	50	0.75	4	2	0.008	-	-	119	●
0.8	1.2	6	50	0.75	4	2	0.008	-	-	120	●
0.8	1.2	8	50	0.75	4	2	0.008	-	-	121	●
0.8	1.2	10	50	0.75	4	2	0.008	-	-	122	○
0.8	1.2	12	50	0.75	4	2	0.008	-	-	123	○
1	1.5	6	50	0.95	4	2	0.01	-	-	124	●
1	1.5	8	50	0.95	4	2	0.01	-	-	125	●
1	1.5	10	50	0.95	4	2	0.01	-	-	126	●
1	1.5	12	50	0.95	4	2	0.01	-	-	127	●
1	1.5	14	50	0.95	4	2	0.01	-	-	128	○
1	1.5	16	60	0.95	4	2	0.01	-	-	129	●
1.2	1.8	6	50	1.15	4	2	0.012	-	-	130	●
1.2	1.8	10	50	1.15	4	2	0.012	-	-	131	●
1.5	2.3	8	50	1.45	4	2	0.015	-	-	132	●
1.5	2.3	12	50	1.45	4	2	0.015	-	-	133	●
1.5	2.3	16	50	1.45	4	2	0.015	-	-	134	●
1.5	2.3	20	60	1.45	4	2	0.015	-	-	135	○
2	3	6	50	1.95	4	2	0.02	-	-	136	●
2	3	8	50	1.95	4	2	0.02	-	-	137	●
2	3	12	50	1.95	4	2	0.02	-	-	138	●
2	3	16	50	1.95	4	2	0.02	-	-	139	●
2	3	20	60	1.95	4	2	0.02	-	-	140	●

						Type		H		H	
						Surface		RockTec 65		RockTec 65	
						Tool holding device		HA parallel shank		HA parallel shank	
						Tolerance of cutting edge Ø		0/-0.012		0/-0.02	
						Tolerance of shank Ø		h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.		16975... Ident. No.	
2	3	25	75	1.95	4	2	0.02	-	-	141	○
2.5	3.7	8	50	2.4	4	2	0.025	-	-	142	●
2.5	3.7	10	50	2.4	4	2	0.025	-	-	143	○
2.5	3.7	12	50	2.4	4	2	0.025	-	-	144	●
2.5	3.7	16	50	2.4	4	2	0.025	-	-	145	●
2.5	3.7	20	60	2.4	4	2	0.025	-	-	146	●
2.5	3.7	25	75	2.4	4	2	0.025	-	-	147	○
3	4.5	8	50	2.85	6	2	0.03	-	-	148	●
3	4.5	10	50	2.85	6	2	0.03	-	-	149	○
3	4.5	12	50	2.85	6	2	0.03	-	-	150	●
3	4.5	16	60	2.85	6	2	0.03	-	-	151	●
3	4.5	20	60	2.85	6	2	0.03	-	-	152	●
3	4.5	25	75	2.85	6	2	0.03	-	-	153	○

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated

VHM | RockTec 65 | Typ H | Z 4 | 40° | HA



Application:
End mill in a standard design for machining materials up to 65 HRC, e.g. dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -6°
- RockTec 65-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16975200-208		200	180	140													95	140	120

						Type		H	
						Surface		RockTec 65	
						Tool holding device		HA parallel shank	
						Tolerance of cutting edge Ø		e8	
						Tolerance of shank Ø		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.	
3	9	15	50	2.8	6	4	0.027	200	●
4	12	20	50	3.7	6	4	0.036	201	●
5	15	20	50	4.6	6	4	0.045	202	●
6	16	20	50	5.5	6	4	0.055	203	●
8	20	30	64	7.4	8	4	0.07	204	●
10	22	32	70	9.2	10	4	0.08	205	●
12	25	37	75	11	12	4	0.09	206	●
16	32	46	90	15	16	4	0.11	207	●
20	38	58	100	19	20	4	0.14	208	●

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated

VHM | RockTec 65 | Typ H | Z 4 | 40° | HA



Application:
End mill, long, with short cutters for machining materials up to 65 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -6°
- RockTec 65-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16975220-228		180	160	125													85	125	110

						Type	H
						Surface	RockTec 65
						Tool holding device	HA parallel shank
						Tolerance of cutting edge Ø	e8
						Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.	
3	5	30	75	2.8	6	4	0.02	220	○
4	8	32	75	3.7	6	4	0.03	221	●
5	9	32	75	4.6	6	4	0.035	222	●
6	10	40	75	5.5	6	4	0.045	223	●
8	12	40	75	7.4	8	4	0.06	224	●
10	14	60	100	9.2	10	4	0.07	225	●
12	16	60	100	11	12	4	0.07	226	●
16	22	85	125	15	16	4	0.09	227	●
20	26	85	125	19	20	4	0.11	228	○

Prod. Gr. 152

ATORN® Solid carbide end mill (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated





Application:
End mill, extra long, with short cutters for machining materials up to 65 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -6°
- RockTec 65-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16975230-238		160	145	110													75	115	100

						Type	H
						Surface	RockTec 65
						Tool holding device	HA parallel shank
						Tolerance of cutting edge Ø	e8
						Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.	
3	5	60	100	2.8	6	4	0.018	230	○
4	8	60	100	3.7	6	4	0.027	231	●
5	9	60	100	4.6	6	4	0.03	232	●
6	10	60	100	5.5	6	4	0.04	233	●
8	12	60	100	7.4	8	4	0.05	234	●
10	14	85	125	9.2	10	4	0.065	235	●
12	16	110	150	11	12	4	0.07	236	●
16	22	110	150	15	16	4	0.08	237	●
20	26	110	150	19	20	4	0.1	238	○

Prod. Gr. 152

ATORN® SC multi-tooth mills (Milling cutter design standard Company standard)

6 flutes, RockTec 65 coated





Application:
Multi-tooth mills for circumferential, ultra-fine finish cutting and semi-rough cutting in materials up to 65 HRC.

Execution:
- Solid carbide ultra-fine grain
- Centre cutting
- Edge protection chamfer
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -26°
- RockTec 65-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16975240-248		200	180	140													95	140	120

								Type	H	
								Surface	RockTec 65	
								Tool holding device	HA parallel shank	
								Tolerance of cutting edge Ø	e8	
								Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.	
3	8	20	50	2.8	6	0.1	6	0.02	240	●
4	11	20	50	3.7	6	0.1	6	0.03	241	●
5	13	20	50	4.6	6	0.1	6	0.04	242	●
6	15	20	50	5.5	6	0.1	6	0.05	243	●
8	20	30	64	7.4	8	0.2	6	0.06	244	●
10	22	32	70	9.2	10	0.2	6	0.07	245	●
12	25	37	75	11	12	0.2	6	0.08	246	●
16	30	46	90	15	16	0.3	8	0.1	247	●
20	38	58	100	19	20	0.4	8	0.13	248	●

Prod. Gr. 152

ATORN® SC multi-tooth mills (Milling cutter design standard Company standard)

6 flutes, RockTec 65 coated



Application:
Multi-tooth mills for circumferential, ultra-fine finish cutting and semi-rough cutting in materials up to 65 HRC.

Execution:
- Solid carbide ultra-fine grain
- Centre cutting
- Edge protection chamfer
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -26°
- RockTec 65-coated

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16975250-258		180	160	125													85	125	110

								Type	H	
								Surface	RockTec 65	
								Tool holding device	HA parallel shank	
								Tolerance of cutting edge Ø	e8	
								Tolerance of shank Ø	h6	
mm	mm	mm	mm	mm	mm	F mm	Z (PCS)	fz hard 52 HRC ● (mm)	16975... Ident. No.	
3	19	30	75	2.8	6	0.1	6	0.018	250	○
4	19	32	75	3.7	6	0.1	6	0.027	251	●
5	19	32	75	4.6	6	0.1	6	0.03	252	●
6	31	40	75	5.5	6	0.1	6	0.04	253	●
8	31	40	75	7.4	8	0.2	6	0.055	254	●
10	45	60	100	9.2	10	0.2	6	0.06	255	●
12	50	60	100	11	12	0.2	6	0.06	256	●
16	57	85	125	15	16	0.3	8	0.08	257	●
20	57	85	125	19	20	0.4	8	0.1	258	●

Prod. Gr. 152

ATORN® Solid carbide miniature torus milling cutter (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated



Application:
Torus milling cutter with long neck for machining materials up to 65 HRC, e.g. for countersinking and mould making.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type H
- -5° -7° chip angle
- RockTec 65 coated
- cutting tolerance dia. 0.2-0.7 mm = 0/-0.012 mm
- cutting tolerance dia. 0.7-3.0 mm = 0/-0.020 mm
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16976001-054		120	110	95													60	80	80

							Type	H		H	
							Surface	RockTec 65		RockTec 65	
							Tool holding device	HA parallel shank		HA parallel shank	
							Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
							Tolerance of shank Ø	h6		h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.		16976... Ident. No.	
0.2	0.02	0.3	0.5	50	0.16	4	2	0.002	001	○	-	-
0.2	0.02	0.3	1	50	0.16	4	2	0.002	002	○	-	-
0.2	0.02	0.3	1.5	50	0.16	4	2	0.002	003	○	-	-
0.3	0.03	0.4	1	50	0.26	4	2	0.003	004	○	-	-
0.3	0.03	0.4	2	50	0.26	4	2	0.003	005	●	-	-
0.3	0.03	0.4	3	50	0.26	4	2	0.003	006	○	-	-
0.4	0.03	0.6	2	50	0.37	4	2	0.004	007	●	-	-
0.4	0.03	0.6	3	50	0.37	4	2	0.004	008	○	-	-
0.4	0.03	0.6	4	50	0.37	4	2	0.004	009	○	-	-
0.4	0.03	0.6	5	50	0.37	4	2	0.004	010	○	-	-
0.5	0.05	0.7	2	50	0.45	4	2	0.005	011	●	-	-
0.5	0.05	0.7	4	50	0.45	4	2	0.005	012	●	-	-
0.5	0.05	0.7	6	50	0.45	4	2	0.005	013	●	-	-
0.5	0.05	0.7	8	50	0.45	4	2	0.005	014	○	-	-
0.6	0.05	0.9	2	50	0.55	4	2	0.006	015	●	-	-
0.6	0.05	0.9	4	50	0.55	4	2	0.006	016	●	-	-
0.6	0.05	0.9	6	50	0.55	4	2	0.006	017	●	-	-
0.6	0.05	0.9	8	50	0.55	4	2	0.006	018	○	-	-
0.6	0.05	0.9	10	50	0.55	4	2	0.006	019	○	-	-
0.8	0.08	1.2	4	50	0.75	4	2	0.008	-	-	020	●
0.8	0.08	1.2	6	50	0.75	4	2	0.008	-	-	021	●
0.8	0.08	1.2	8	50	0.75	4	2	0.008	-	-	022	●
0.8	0.08	1.2	10	50	0.75	4	2	0.008	-	-	023	○
0.8	0.08	1.2	12	50	0.75	4	2	0.008	-	-	024	○
1	0.1	1.5	6	50	0.95	4	2	0.01	-	-	025	●
1	0.1	1.5	8	50	0.95	4	2	0.01	-	-	026	●
1	0.1	1.5	10	50	0.95	4	2	0.01	-	-	027	●
1	0.1	1.5	12	50	0.95	4	2	0.01	-	-	028	●
1	0.1	1.5	14	50	0.95	4	2	0.01	-	-	029	●
1	0.1	1.5	16	60	0.95	4	2	0.01	-	-	030	●
1.2	0.1	1.8	6	50	1.15	4	2	0.012	-	-	031	●
1.2	0.1	1.8	10	50	1.15	4	2	0.012	-	-	032	○
1.5	0.15	2.3	8	50	1.45	4	2	0.015	-	-	033	●
1.5	0.15	2.3	12	50	1.45	4	2	0.015	-	-	034	●
1.5	0.15	2.3	16	50	1.45	4	2	0.015	-	-	035	●
1.5	0.15	2.3	20	60	1.45	4	2	0.015	-	-	036	○
2	0.2	3	6	50	1.95	4	2	0.02	-	-	037	●
2	0.2	3	8	50	1.95	4	2	0.02	-	-	038	●
2	0.2	3	12	50	1.95	4	2	0.02	-	-	039	●
2	0.2	3	16	50	1.95	4	2	0.02	-	-	040	●
2	0.2	3	20	60	1.95	4	2	0.02	-	-	041	●
2	0.2	3	25	75	1.95	4	2	0.02	-	-	042	○
2.5	0.3	3.7	8	50	2.4	4	2	0.025	-	-	043	●
2.5	0.3	3.7	10	50	2.4	4	2	0.025	-	-	044	●
2.5	0.3	3.7	12	50	2.4	4	2	0.025	-	-	045	●
2.5	0.3	3.7	16	50	2.4	4	2	0.025	-	-	046	●
2.5	0.3	3.7	20	60	2.4	4	2	0.025	-	-	047	○
2.5	0.3	3.7	25	75	2.4	4	2	0.025	-	-	048	●
3	0.3	4.5	8	50	2.85	6	2	0.03	-	-	049	●
3	0.3	4.5	10	50	2.85	6	2	0.03	-	-	050	●
3	0.3	4.5	12	50	2.85	6	2	0.03	-	-	051	●
3	0.3	4.5	16	60	2.85	6	2	0.03	-	-	052	●
3	0.3	4.5	20	60	2.85	6	2	0.03	-	-	053	●
3	0.3	4.5	25	75	2.85	6	2	0.03	-	-	054	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated





Application:
Torus milling cutter for processing materials up to 65 HRC, e.g. for die and mould making.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in line with DIN 6535
- With clearance
- Type H
- Chip angle -5° -7°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Best chip removal and temperature resistance
- RockTec 65 coating for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16976100-127		200	180	140													95	140	120

						Type	H	
						Surface	RockTec 65	
						Tool holding device	HA parallel shank	
						Tolerance of cutting edge Ø	e8	
						Tolerance of shank Ø	h6	
mm	R mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.	
3	0.3	9	50	6	4	0.027	100	●
3	0.5	9	50	6	4	0.027	101	●
4	0.3	12	50	6	4	0.036	102	●
4	0.5	12	50	6	4	0.036	103	●
4	1	12	50	6	4	0.036	104	●
5	0.5	15	50	6	4	0.045	105	●
5	1	15	50	6	4	0.045	106	●
5	0.3	15	50	6	4	0.045	126	●
6	0.3	20	60	6	4	0.055	107	●
6	0.5	20	60	6	4	0.055	108	●
6	1	20	60	6	4	0.055	109	●
8	0.5	20	64	8	4	0.07	110	●
8	1	20	64	8	4	0.07	111	●
8	1.5	20	64	8	4	0.07	112	●
8	2	20	64	8	4	0.07	113	●
10	0.5	22	75	10	4	0.08	114	●
10	1.5	22	75	10	4	0.08	115	●
10	2	22	75	10	4	0.08	116	●
10	1	22	75	10	4	0.08	127	●
12	1	25	75	12	4	0.09	117	●
12	2	25	75	12	4	0.09	118	●
12	3	25	75	12	4	0.09	119	●
16	1	32	90	16	4	0.11	120	●
16	2	32	90	16	4	0.11	121	●
16	3	32	90	16	4	0.11	122	●
20	1	38	100	20	4	0.14	123	○
20	2	38	100	20	4	0.14	124	○
20	3	38	100	20	4	0.14	125	○

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated





Application:
Torus milling cutter with short blade for processing materials up to 65 HRC, e.g. for die and mould making.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in line with DIN 6535

- With clearance
- Type H
- Chip angle -5° -7°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Best chip removal and temperature resistance
- RockTec 65 coating for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16976130-145		200	180	140													95	140	120

							Type	H		
							Surface	RockTec 65		
							Tool holding device	HA parallel shank		
							Tolerance of cutting edge Ø	e8		
							Tolerance of shank Ø	h6		
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.	
3	0.3	4	14	60	2.8	6	4	0.027	130	●
3	0.5	4	14	60	2.8	6	4	0.027	131	●
4	0.3	5	16	60	3.7	6	4	0.036	132	●
4	0.5	5	16	60	3.7	6	4	0.036	133	●
5	0.3	6	18	60	4.6	6	4	0.045	134	●
5	0.5	6	18	60	4.6	6	4	0.045	135	●
6	0.5	7	20	60	5.5	6	4	0.055	136	●
6	1	7	20	60	5.5	6	4	0.055	137	●
8	0.5	9	26	64	7.4	8	4	0.07	138	●
8	1	9	26	64	7.4	8	4	0.07	139	●
10	1	11	31	70	9.2	10	4	0.08	140	●
10	2	11	31	70	9.2	10	4	0.08	141	●
12	1	13	37	75	11	12	4	0.09	142	●
12	2	13	37	75	11	12	4	0.09	143	●
16	1	17	43	90	15	16	4	0.11	144	●
16	2	17	43	90	15	16	4	0.11	145	●

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated



Application:
Torus milling cutter, long, with short blade for processing materials up to 65 HRC, e.g. for die and mould making.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in line with DIN 6535
- With clearance
- Type H
- Chip angle -5° -7°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Best chip removal and temperature resistance
- RockTec 65 coating for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16976150-165		180	160	125													85	125	110

Type	H
Surface	RockTec 65
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.	
3	0.3	5	30	75	2.8	6	4	0.025	150	●
3	0.5	5	30	75	2.8	6	4	0.025	151	○
4	0.3	8	32	75	3.7	6	4	0.03	152	●
4	0.5	8	32	75	3.7	6	4	0.03	153	●
5	0.3	9	32	75	4.6	6	4	0.04	154	●
5	0.5	9	32	75	4.6	6	4	0.04	155	●
6	0.5	10	40	75	5.5	6	4	0.05	156	●
6	1	10	40	75	5.5	6	4	0.05	157	●
8	0.5	12	40	75	7.4	8	4	0.06	158	●
8	1	12	40	75	7.4	8	4	0.06	159	●
10	1	14	60	100	9.2	10	4	0.07	160	●
10	2	14	60	100	9.2	10	4	0.07	161	●
12	1	16	60	100	11	12	4	0.08	162	●
12	2	16	60	100	11	12	4	0.08	163	●
16	1	22	85	125	15	16	4	0.1	164	○
16	2	22	85	125	15	16	4	0.1	165	○

Prod. Gr. 152

ATORN® SC torus milling cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated



Application:
Torus milling cutter, extra-long, with short blade for processing materials up to 65 HRC, e.g. for die and mould making.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in line with DIN 6535
- With clearance
- Type H
- Chip angle -5° -7°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Best chip removal and temperature resistance
- RockTec 65 coating for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16976170-185		170	155	120													80	120	100

Type	H
Surface	RockTec 65
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.	
3	0.3	5	60	100	2.8	6	4	0.02	170	○
3	0.5	5	60	100	2.8	6	4	0.02	171	○
4	0.3	8	60	100	3.7	6	4	0.025	172	●
4	0.5	8	60	100	3.7	6	4	0.025	173	●
5	0.3	9	60	100	4.6	6	4	0.035	174	●
5	0.5	9	60	100	4.6	6	4	0.035	175	●
6	0.5	10	60	100	5.5	6	4	0.04	176	●
6	1	10	60	100	5.5	6	4	0.04	177	●
8	0.5	12	60	100	7.4	8	4	0.05	178	●
8	1	12	60	100	7.4	8	4	0.05	179	●

								Type		H	
								Surface		RockTec 65	
								Tool holding device		HA parallel shank	
								Tolerance of cutting edge Ø		e8	
								Tolerance of shank Ø		h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.		
10	1	14	85	125	9.2	10	4	0.06	180	●	
10	2	14	85	125	9.2	10	4	0.06	181	●	
12	1	16	110	150	11	12	4	0.07	182	●	
12	2	16	110	150	11	12	4	0.07	183	●	
16	1	22	110	150	15	16	4	0.09	184	○	
16	2	22	110	150	15	16	4	0.09	185	○	

Prod. Gr. 152

ATORN® Solid carbide HSC high-feed milling cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated





Application:
High-feed milling cutter (HSC) with short blade for processing materials up to 65 HRC. Applications in die and mould making and general mechanical engineering.

Execution:
- Solid carbide ultra-fine grain
- HA shank in line with DIN 6535
- Cutting edge finish
- Centre cutting

- Type H
- Chip angle -1°
- Twist angle 3°
- RockTec 65-coated

Advantage:
- High material removal rate, high surface quality
- High feeds of 0.2-0.5 mm per tooth possible
- Good dimensional and geometric accuracy
- RockTec 65 coating for maximum service life

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16976190-201		170	160	140														90	120

								Type		H	
								Surface		RockTec 65	
								Tool holding device		HA parallel shank	
								Tolerance of cutting edge Ø		e8	
								Tolerance of shank Ø		h6	
mm	R mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16976... Ident. No.		
4	0.4	1.5	8	57	3.7	6	4	0.13	190	●	
4	0.4	1.5	15	57	3.7	6	4	0.13	191	●	
5	0.5	2	10	57	4.6	6	4	0.17	192	●	
5	0.5	2	21	57	4.6	6	4	0.17	193	●	
6	0.6	2.5	12	57	5.5	6	4	0.2	194	●	
6	0.6	2.5	26	57	5.5	6	4	0.2	195	●	
8	0.8	3	16	63	7.4	8	6	0.24	196	●	
8	0.8	3	31	63	7.4	8	6	0.24	197	●	
10	1	3.5	20	72	9.2	10	6	0.34	198	●	
10	1	3.5	36	72	9.2	10	6	0.34	199	●	
12	1.2	4	24	83	11	12	6	0.42	200	●	
12	1.2	4	41	83	11	12	6	0.42	201	●	

Prod. Gr. 152

ATORN® Solid carbide miniature radius cutter (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated





Application:
Mini radius cutter in short, sturdy design for machining materials up to 65 HRC.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- type H
- -5° chip angle
- RockTec 65 coated up to 65 HRC
- cutting edge tolerance, dia. 0.2-0.7 mm = 0/-0.012 mm
- cutting edge tolerance, dia. 0.7-0.9 mm = 0/-0.020 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16977001-008		130	**110**	105													60	90	80

						Type	H		H	
						Surface	RockTec 65		RockTec 65	
						Tool holding device	HA parallel shank		HA parallel shank	
						Tolerance of cutting edge Ø	0/-0.012		0/-0.02	
						Tolerance of shank Ø	h6		h6	
mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)		16977... Ident. No.		16977... Ident. No.	
0.2	0.4	40	4	2	0.002		**001**	●	-	-
0.3	0.6	40	4	2	0.003		**002**	●	-	-
0.4	0.8	40	4	2	0.003		**003**	●	-	-
0.5	1	40	4	2	0.003		**004**	●	-	-
0.6	1.4	40	4	2	0.003		**005**	●	-	-
0.7	1.6	40	4	2	0.003		**006**	○	-	-
0.8	1.8	40	4	2	0.003		-	-	**007**	●
0.9	2	40	4	2	0.004		-	-	**008**	○

Prod. Gr. 152

ATORN® Solid carbide miniature radius cutter (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated

VHM | RockTec 65 | Typ H | Z 2 | 30° | HA



Application:
Mini radius cutter with long neck for machining materials up to 65 HRC.

Execution:
- solid carbide ultra-fine grain
- cutting edge finish
- HA shank in accordance with DIN 6535
- with clearance
- type H
- -5° chip angle
- RockTec 65-coated
- cutting edge tolerance, dia. 0.2-0.7 mm = 0/-0.012 mm
- cutting edge tolerance, dia. 0.7-3.0 mm = 0/-0.020 mm
- radius tolerance = 0/-0.010 mm

Advantage:
- optimum chip removal and temperature resistance
- maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16977100-153		220	200	155													105	155	130

Type								H		H	
Surface								RockTec 65		RockTec 65	
Tool holding device								HA parallel shank		HA parallel shank	
Tolerance of cutting edge Ø								0/-0.012		0/-0.02	
Tolerance of shank Ø								h6		h6	
mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16977... Ident. No.		16977... Ident. No.	
0.2	0.2	0.5	50	0.15	4	2	0.003	100	●	-	-
0.2	0.2	1	50	0.15	4	2	0.003	101	●	-	-
0.2	0.2	1.5	50	0.15	4	2	0.003	102	●	-	-
0.3	0.3	1	50	0.25	4	2	0.003	103	●	-	-
0.3	0.3	2	50	0.25	4	2	0.003	104	●	-	-
0.3	0.3	3	50	0.25	4	2	0.003	105	○	-	-
0.4	0.4	1	50	0.35	4	2	0.004	106	●	-	-
0.4	0.4	2	50	0.35	4	2	0.004	107	●	-	-
0.4	0.4	3	50	0.35	4	2	0.004	108	●	-	-
0.4	0.4	4	50	0.35	4	2	0.004	109	○	-	-
0.4	0.4	5	50	0.35	4	2	0.004	110	○	-	-
0.5	0.4	2	50	0.45	4	2	0.006	111	●	-	-
0.5	0.4	3	50	0.45	4	2	0.006	112	●	-	-
0.5	0.4	4	50	0.45	4	2	0.006	113	●	-	-
0.5	0.4	5	50	0.45	4	2	0.006	114	●	-	-
0.5	0.4	6	50	0.45	4	2	0.006	115	●	-	-
0.5	0.4	8	50	0.45	4	2	0.006	116	○	-	-
0.6	0.5	2	50	0.55	4	2	0.007	117	●	-	-
0.6	0.5	3	50	0.55	4	2	0.007	118	●	-	-
0.6	0.5	4	50	0.55	4	2	0.007	-	-	119	●
0.6	0.5	5	50	0.55	4	2	0.007	-	-	120	●
0.6	0.5	6	50	0.55	4	2	0.007	-	-	121	●
0.6	0.5	8	50	0.55	4	2	0.007	-	-	122	○
0.8	0.6	2	50	0.75	4	2	0.009	-	-	123	●
0.8	0.6	4	50	0.75	4	2	0.009	-	-	124	●
0.8	0.6	5	50	0.75	4	2	0.009	-	-	125	●
0.8	0.6	6	50	0.75	4	2	0.009	-	-	126	●
0.8	0.6	7	50	0.75	4	2	0.009	-	-	127	○
0.8	0.6	8	50	0.75	4	2	0.009	-	-	128	●
0.8	0.6	10	50	0.75	4	2	0.009	-	-	129	●
1	0.8	3	50	0.95	4	2	0.01	-	-	130	●
1	0.8	6	50	0.95	4	2	0.01	-	-	131	●
1	0.8	8	50	0.95	4	2	0.01	-	-	132	●
1	0.8	10	50	0.95	4	2	0.01	-	-	133	●
1	0.8	12	50	0.95	4	2	0.01	-	-	134	●
1	0.8	16	50	0.95	4	2	0.01	-	-	135	●
1	0.8	20	60	0.95	4	2	0.01	-	-	136	●
1.2	1	6	50	1.15	4	2	0.01	-	-	137	●
1.2	1	10	50	1.15	4	2	0.01	-	-	138	○
1.5	1.2	8	50	1.45	4	2	0.02	-	-	139	●
1.5	1.2	12	50	1.45	4	2	0.02	-	-	140	●
1.5	1.2	16	50	1.45	4	2	0.02	-	-	141	●
1.5	1.2	18	60	1.45	4	2	0.02	-	-	142	●
2	1.6	4	50	1.95	4	2	0.02	-	-	143	●
2	1.6	8	50	1.95	4	2	0.02	-	-	144	●
2	1.6	12	50	1.95	4	2	0.02	-	-	145	●
2	1.6	16	50	1.95	4	2	0.02	-	-	146	●
2	1.6	20	60	1.95	4	2	0.02	-	-	147	●
2	1.6	25	75	1.95	4	2	0.02	-	-	148	●
3	2.4	8	50	2.85	6	2	0.03	-	-	149	●
3	2.4	10	50	2.85	6	2	0.03	-	-	150	●
3	2.4	16	60	2.85	6	2	0.03	-	-	151	●
3	2.4	20	60	2.85	6	2	0.03	-	-	152	●
3	2.4	25	75	2.85	6	2	0.03	-	-	153	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated



Application:
Radius milling cutter, standard design, for machining materials up to 65 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535

- With clearance
- Type H
- Chip angle -10°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16977200-210		220	200	155													105	155	130

							Type	H
							Surface	RockTec 65
							Tool holding device	HA parallel shank
							Tolerance of cutting edge Ø	e8
							Tolerance of shank Ø	h6
mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16977... Ident. No.	
2	4	8	40	1.85	4	2	0.025	200	●
2.5	4	10	40	2.35	4	2	0.03	201	●
3	5	14	50	2.8	4	2	0.035	202	●
4	8	20	50	3.7	4	2	0.035	203	●
5	9	20	50	4.6	6	2	0.04	204	●
6	10	20	50	5.5	6	2	0.05	205	●
8	12	30	64	7.4	8	2	0.07	206	●
10	14	32	70	9.2	10	2	0.08	207	●
12	16	38	75	11	12	2	0.09	208	●
16	32	46	90	15	16	2	0.1	209	●
20	38	58	100	19	20	2	0.12	210	○

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated



Application:
Radius milling cutter, long design, for machining materials up to 65 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535

- With clearance
- Type H
- Chip angle -10°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16977220-230		200	180	140													95	140	120

							Type	H
							Surface	RockTec 65
							Tool holding device	HA parallel shank
							Tolerance of cutting edge Ø	e8
							Tolerance of shank Ø	h6
mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16977... Ident. No.	
2	4	14	75	1.85	6	2	0.02	220	●
2.5	4	18	75	2.35	6	2	0.025	221	○
3	5	21	75	2.8	6	2	0.03	222	●
4	8	28	75	3.7	6	2	0.03	223	●
5	9	32	75	4.6	6	2	0.035	224	●
6	10	40	75	5.5	6	2	0.04	225	●
8	12	40	75	7.4	8	2	0.06	226	●
10	14	60	100	9.2	10	2	0.07	227	●
12	16	60	100	11	12	2	0.08	228	●
16	32	80	125	15	16	2	0.09	229	●
20	38	80	125	19	20	2	0.1	230	○

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

2 cutters, RockTec 65-coated

VHM | RockTec 65 | Typ H | Z 2 | 30° | HA



Application:
Radius milling cutter, extra long design, for machining materials up to 65 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -10°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16977240-250		190	170	130													90	130	110

Type	H
Surface	RockTec 65
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 52 HRC ● (mm)	16977... Ident. No.	
2	4	20	100	1.85	6	2	0.01	240	○
2.5	4	25	100	2.35	6	2	0.02	241	○
3	5	30	100	2.8	6	2	0.025	242	●
4	8	40	100	3.7	6	2	0.025	243	●
5	9	50	100	4.6	6	2	0.03	244	●
6	10	60	150	5.5	6	2	0.035	245	●
8	12	80	150	7.4	8	2	0.05	246	●
10	14	100	150	9.2	10	2	0.06	247	●
12	16	110	150	11	12	2	0.07	248	●
16	32	150	200	15	16	2	0.08	249	●
20	38	150	200	19	20	2	0.09	250	○

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated

VHM | RockTec 65 | Typ H | Z 4 | 30° | HA



Application:
Radius milling cutter, standard design, for machining materials up to 65 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -10°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16977260-268		220	200	155													105	155	130

Type	H
Surface	RockTec 65
Tool holding device	HA parallel shank
Tolerance of cutting edge Ø	e8
Tolerance of shank Ø	h6

mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 65 HRC ● (mm)	16977... Ident. No.	
3	5	14	50	2.8	6	4	0.025	260	●
4	8	20	50	3.7	6	4	0.035	261	●
5	9	20	50	4.6	6	4	0.04	262	●
6	10	20	50	5.5	6	4	0.05	263	●
8	12	30	64	7.4	8	4	0.07	264	●
10	14	32	70	9.2	10	4	0.08	265	●
12	16	38	75	11	12	4	0.09	266	●
16	32	46	90	15	16	4	0.1	267	●
20	38	58	100	19	20	4	0.12	268	●

Prod. Gr. 152

ATORN® Solid carbide radius cutter (Milling cutter design standard Company standard)

4 flutes, RockTec 65-coated





Application:
Radius milling cutter, long design, for machining materials up to 65 HRC, e.g. in dip cutting and mould construction.

Execution:
- Solid carbide ultra-fine grain
- Cutting edge finish
- HA shank in accordance with DIN 6535
- With clearance
- Type H
- Chip angle -10°
- RockTec 65-coated
- Radius tolerance = 0/-0.010 mm

Advantage:
- Excellent chip removal and temperature resistance
- Maximum service life thanks to RockTec 65 coating

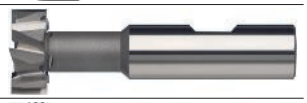
Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
16977270-278		200	**180**	140													95	140	120

									Type	H
									Surface	RockTec 65
									Tool holding device	HA parallel shank
									Tolerance of cutting edge Ø	e8
									Tolerance of shank Ø	h6
mm	mm	mm	mm	mm	mm	Z (PCS)	fz hard 65 HRC ● (mm)	16977... Ident. No.	
3	5	21	75	2.8	6	4	0.02	**270**	●
4	8	28	75	3.7	6	4	0.03	**271**	●
5	9	32	75	4.6	6	4	0.035	**272**	●
6	10	40	75	5.5	6	4	0.04	**273**	●
8	12	40	75	7.4	8	4	0.06	**274**	●
10	14	60	100	9.2	10	4	0.07	**275**	●
12	16	60	100	11	12	4	0.08	**276**	●
16	32	80	125	15	16	4	0.09	**277**	●
20	38	80	125	19	20	4	0.1	**278**	●

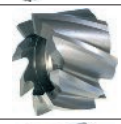
Prod. Gr. 152

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

HSS/HSSE profiling and disc milling cutter

		Cutting material	Type	P	M	N	K	S	H	
15005	HSSE graver	HSSE		●	○	●	●	○		
15461010-080	Quarter circle milling cutter HSSE Co 5 Concave		N	●	○	●	○	○		
15792	T-slot milling cutter HSSE Co 5	HSSE Co5	N	●	○	●	○	○		
15794	T-slot milling cutter HSSE Co 5	HSSE Co5	NF	●	○	●	○	○		
15800	Keyway cutter HSSE Co 5	HSSE Co5	H	●		●	○	●		
15804	Keyway cutter HSSE Co 5	HSSE Co5	N	●		●	○			
15806	Keyway cutter HSSE Co 5	HSSE Co5	N	●		●	○			
15814120-155	Angular milling cutter HSSE Co 5	HSSE Co5	N	●	○	○	○			
15815015-055	Angular milling cutter HSSE Co 5	HSSE Co5	N	●	○	○	○			
14312091-121	Double equal angle milling cutter HSS Type H	HSS	N	●	○	○	○			
14314	HSS single angle milling cutter Type H	HSS	H	●	○	○	○	○		
14332	Radius milling cutter HSSE Co 5 Convex, backed off			●	○	○	○	○		
14345	Profiling cutter HSSE Co 5 For Charpy test specimens		N	●	○	○	○	○		
14103	Narrow disc milling cutter HSSE Co 5 Type N		N	●	○	●	●	●		
14105	HSSE Co 5 narrow disc milling cutter Type N		N	●	○	●	●	●		
14123	Disc milling cutter HSSE Co 5 Type N		N	●	○	●	●	●		
14131	Disc milling cutter HSSE Co 5 Type H		H	●	●	○	●	●		

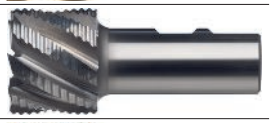
HSSE/HSSE PM shell end mill

	Cutting material	Z	Type	Surface	P	M	N	K	S	H	
14164		6	N		●	○	●	●			
14169		8	NF		●	○	●	○			
14168		8	NR		●	○	●	○			
14193		6	N		●	○	●	○			
14195		6	W		●	○	●	○			
14244		6	NF		●	○	●	○	○		
14248		8	NF	TiAlN	●	○	●	○	○		
14242		6	NR		●	○	●	○	○		
14247		10	NR	TiAlN	●	○	●	○	○		
14989	HSSE-PM	6	N		●	●	●	●	●		
14990	HSSE-PM	10	N	TiAlN	●	●	●	●	●		
14208	HSSE-PM	6	HF	TiAlN	●	○		●	●		
14207	HSSE-PM	10	HR	TiAlN	●	○		●	●		
14233	HSSE-PM	8	HR		●	○		●	●		
14992	HSSE-PM	10	NF	TiAlN	●	●	●	●	○		
14991	HSSE-PM	6	NR	TiAlN	●	●	●	●	○		

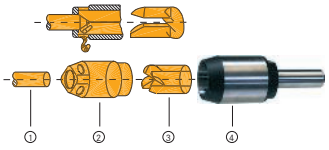
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

HSSE/HSSE PM angular milling cutter and radius cutter

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
15007	1	W		HA			●				
15020020-360	2	N		HB	●	○	○	●	○		
15023010-015	2	N	TiAlN	HB	●	○	○	●	○		
15061	2	W		HB	●	○	●		○		
15063	2	W		HB	●	○	●		○		
15053	2	N		HB	●	○	○	●	○		
15055	2	N	TiAlN	HB	●	○	○	●	○		
15091	3	N		HB	●	○	○	○	○		
15093	3	N	TiCN	HB	●	○	○	○	○		
15102	3	N		HB	●	○	○	○	○	○	
15105	3	N	TiAlN	HB	●	○	○	○	○	○	
15112	3	N		HB	●	○	○	○	○		
15118	3	N	TiAlN	HB	●	○	○	○	○		
15116	3	NR		HB	●	○	○	○	○		
15119	3	NR	TiAlN	HB	●	○	○	○	○		
15215	3	N	TiAlN	HB	●	○	●	○	○		
15124	3	N		HB	●	○	○	○	○		
15901	3	N	TiAlN	HB	●	●	○	○	●		
15159	3	NR	TiAlN	HB	●	●	○	○	●		
15158	3	W	TiAlN	HB	●	●	●	○	●		
15176	4	N		HB	●	○	○	○	○		
15178	6	N	TiAlN	HB	●	○	○	○	○		
15193	4	N		HB	●	○	○	○	○		
15195	6	N	TiAlN	HB	●	○	○	○	○		
15904	4	N	TiAlN	HB	●	○	○	○	○		
15324	6	N		HB	●	○	○	○	○		
15325	4	NR		HB	●	○	○	○	○		
15914	5	N	TiAlN	HB	●	●	○	○	●		
15188	4	N	TiAlN	HB	●	○	○	○	○		
15261	4	NR		HB	●	○	○	○	○		
15263	6	NR	TiAlN	HB	●	○	○	○	○		
15278	4	NF		HB	●	●	○	○	○		
15280	4	NF	TiAlN	HB	●	●	○	○	○		

	Z	Type	Surface	Tool holding device	P	M	N	K	S	H	
15272	4	NR		HB	●	●	○	○	○		
15275	4	NR	TiAlN	HB	●	●	○	○	○		
15290	4	HR	TiCN	HB	●	○	○	○	●		
15300	6	HR	TiCN	HB	●	○	○	○	●		
15269	4	NRF	TiAlN	HB	●	○	○	○	○		
15905	5	NR	TiAlN	HB	●	○	○	○	○		
15907	4	NF	TiAlN	HB	●	○	○	○	○		
15311	4	HR	TiAlN	HB	●	○	○	○	●		
15312	6	HF	TiAlN	HB	●	○	○	○	●		
15906	4	NR	TiAlN	HB	●	○	○	○	●		
15908	4	NF	TiAlN	HB	●	○	○	○	●		
15319	4	HR	TiAlN	HB	●	○	○	○	●		
15242	4	NR		HD	●	○	○	○	○		
15350	6	N		Morse taper shank	●	○	○	○	○		
15351	4	NR		Morse taper shank	●	○	○	○	○		
15251	6	N		HB	●	○	○	○	○		
15252	8	N	TiCN/TiN	HB	●	○	○	○	○		
15257	6	NR		HB	●	○	○	○	○		
15258	8	NR	TiCN/TiN	HB	●	○	○	○	○		
15361	2	N		HB	●	○	○	○	○		
15366	2	N		HB	●	○	○	○	○		

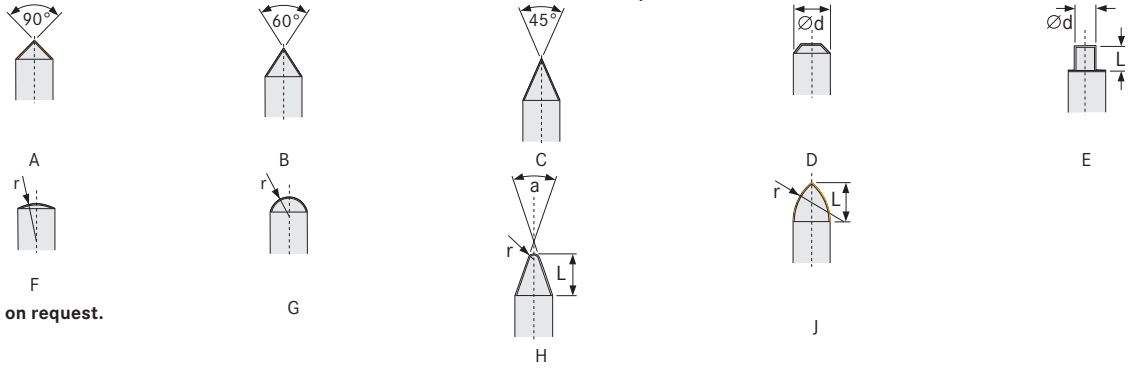
Milling tool for wire and rod ends



① Workpiece ② Centring ring
③ Cutter ④ Clamping chucks

Application: for centred rounding, pointing, levelling and chamfering of wire and rod ends and mass-produced parts with cylindrical or polygonal cross-sections. The HSS milling blade and workpiece centring discs are replaceable. The end-milling tools are used in an advantageous rotary motion.

Overview – blade shapes:



Prices on request.

ATORN® ORION® High-performance HSSE PM shell end mill

(Milling cutter design standard DIN 1880)

HSSE-PM | TiAlN | Typ N | Z 6 | Z 8 | Z 10 | 40°

Execution:
- Bore hole with longitudinal and lateral slot in conformity with DIN 138
- Cutting around the circumference and on the end face



No. 14989
Type N



No. 14990
Type N, TiAlN-coated

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
14989	44	32	24	26	24	78	201	66	50	37	42	84			13	10	10		
14990	73	53	40	40	43	130	335	62	70	110	83	140		63	22	17	17		

					ATORN®		ORION®	
				Type	N		N	
				Design of cutting edges	Smoothing		Smoothing	
				Twist angle	40°		40°	
				Surface	Uncoated		TiAlN	
Cutting edge Ø (mm)	Height (mm)	Bore Ø (mm)	Z (PCS)	fz steel 700 ● (mm)	14989... Ident. No.		14990... Ident. No.	
40	32	16	6	0.08	040	●	-	-
40	32	16	8	0.08	-	-	040	●
50	36	22	8	0.09	050	●	050	●
63	40	27	8	0.09	063	●	-	-
63	40	27	10	0.09	-	-	063	●
80	45	27	10	0.1	080	●	080	●
100	50	32	10	0.11	100	●	100	●

ORION = Prod. Gr. 1HH
ATORN® = Prod. Gr. 118

ATORN® High-performance HSSE PM shell end roughing mill
(Milling cutter design standard DIN 1880)

HSSE-PM | TiAlN | Typ HR | Typ HF | Z 6 | Z 8 | Z 10 | 30°

Execution:
- Bore hole with longitudinal and lateral slot in conformity with DIN 138
- Cutting around the circumference and on the end face
- **No. 14207–14208:** For dry milling with compressed air



No. 14207
Type HR, TiALN-coated



No. 14208
Type HF, TiALN-coated



No. 14233
Type HR

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
14207	73	53	40	40	43	130	335	62	70	110	83	140		63	22	17	17		
14208	73	53	40	40	43	130	335	62	70	110	83	140		63	22	17	17		
14233	44	32	24	26	24	78	201	66	50	37	42	84			13	10	10		

					Type	HR		HF		HR	
					Design of cutting edges	Roughing		Rough finishing		Roughing	
					Twist angle	30°		30°		30°	
					Surface	TiAlN		TiAlN		Uncoated	
Cutting edge Ø (mm)	Height (mm)	Bore Ø (mm)	Z (PCS)	fz steel 700 ● (mm)		14207... Ident. No.		14208... Ident. No.		14233... Ident. No.	
40	32	16	6	0.08		040	●	040	●	-	-
40	32	16	8	0.08		-	-	-	-	040	●
50	36	22	8	0.09		050	●	050	●	050	●
63	40	27	8	0.09		063	●	063	●	-	-
63	40	27	10	0.09		-	-	-	-	063	●
80	45	27	10	0.1		080	●	080	●	080	●

Prod. Gr. 118

ATORN® ORION® End mill, HSSE-PM (Milling cutter design standard DIN 844 B)

3 flutes, TiAlN coated

HSSE-PM | TiAlN | Typ NR | Typ N | Z 3 | 30° | 45° | HB

Application:
Universal end mill for plunge, groove and slot milling as well as for face and circumferential milling. Optimized cutting material for unstable clamping conditions and increased service life. Also suitable for milling with compressed air.

Execution:
- HSSE PM
- Centre cutting
- Straight shank pursuant to DIN 1835 HB
- TiAlN-coating for maximum service life
- **No. 15159:** Roughing teeth
- **No. 15901:** Finishing teeth



No. 15159



No. 15901

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
15159	78	51	35	43	43	130	325	70	70	110	85	140		75	23	23	20		
15901	78	51	35	43	40	130	325	110	85	70	70	140		75	23	23	20		

								ATORN®		ORION®	
							Type	NR		N	
							Surface	TiAlN		TiAlN	
							Tool holding device	HB parallel shank		HB parallel shank	
mm	mm	mm	mm	F mm	Z (PCS)	fz steel 700 ● (mm)		15159... Ident. No.		15901... Ident. No.	
6	13	57	6	0.1	3	0.057		060	●	060	●
8	19	69	10	0.1	3	0.078		080	●	080	●
10	22	72	10	0.1	3	0.093		100	●	100	●
12	26	83	12	0.2	3	0.108		120	●	120	●
14	26	83	12	0.2	3	0.115		140	●	-	-
16	32	92	16	0.2	3	0.12		160	●	160	●
18	32	92	16	0.2	3	0.13		180	●	-	-
20	38	104	20	0.2	3	0.145		200	●	200	●

ORION = Prod. Gr. 106
ATORN® = Prod. Gr. 118

ATORN® End mill, HSSE-PM (Milling cutter design standard DIN 844 K)

3 flutes, TiAlN coated

HSSE-PM | TiAlN | Typ W | Z 3 | 45° | 45° | HB



Application:
End mill for universal use when plunge milling, groove milling and keyway cutting as well as face milling and peripheral milling. Optimised cutting material for unstable clamping conditions and increased service life.

Execution:
- HSSE PM
- finishing teeth
- centre cutting
- TiAlN coating for maximum service life
- straight shank in accordance with DIN 1835 B

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
15158	78	51		43	43	130	325	110	70	70	85	140		75	23	23			

Type	W
Surface	TiAlN
Tool holding device	HB parallel shank

mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	15158... Ident. No.	
4	11	55	6	0.1	3	0.036	040	●
5	13	57	6	0.1	3	0.047	050	●
6	13	57	6	0.1	3	0.057	060	●
7	16	66	10	0.1	3	0.068	070	●

Type	W
Surface	TiAlN
Tool holding device	HB parallel shank

mm	mm	mm	mm	F mm	Z (PCS)	fz alu ● (mm)	15158... Ident. No.	
8	19	69	10	0.1	3	0.078	080	●
10	22	72	10	0.1	3	0.093	100	●
12	26	83	12	0.2	3	0.108	120	●
14	26	83	12	0.2	3	0.115	140	●
16	32	92	16	0.2	3	0.12	160	●
18	32	92	16	0.2	3	0.13	180	●
20	38	104	20	0.2	3	0.145	200	●

Prod. Gr. 118

ATORN® HPC HSSE PM end mill (Milling cutter design standard DIN 844 K)

4 flutes, TiAlN - coated

HSSE-PM | TiAlN | Typ N | Z 4 | Z 5 | 45° | HB | HPC



Application:
HPC end mill with an uneven twist for universal roughing and finishing in a wide range of materials. Optimized cutting material for unstable clamping conditions and increased service life.

Execution:
- HSSE PM
- Pursuant to DIN 844 K
- Straight shank according to DIN 1835 B
- TiAlN coating optimized for longer service life
- Centre cutting
- Edge protection chamfer
- Twist angle 35°/30-42°

Advantage:
- Extremely smooth running
- Reduces vibrations
- Ideal for machining in unstable clamping conditions
- Up to 30% increase in feed rate
- Enables greater surface quality

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
15914	40	32	18	24	19	85	265	43	50	40	45	110		40	15	15	15		

Type	N
Surface	TiAlN
Tool holding device	HB parallel shank

mm	mm	mm	mm	F mm	Z (PCS)	fz steel 700 ● (mm)	15914... Ident. No.	
6	13	57	6	0.1	4	0.047	060	●
8	19	69	10	0.1	4	0.072	080	●
10	22	72	10	0.1	4	0.084	100	●
12	26	83	12	0.2	4	0.096	120	●
16	32	92	16	0.2	5	0.115	160	●
18	32	92	16	0.2	5	0.12	180	●
20	38	104	20	0.2	5	0.13	200	●

Prod. Gr. 118

ATORN® ORION® HSSE PM end mill (Milling cutter design standard DIN 844 K)

4-6 flutes, TiAlN coated

HSSE-PM | TiAlN | Typ N | Z 4 | Z 6 | 30° | 45° | HB



No. 15188



No. 15902

Application:
No. 15188: End mill for universal machining in a wide range of materials. Optimised cutting material for unstable clamping conditions and increased service life.
No. 15902: End mill for universal machining in a wide range of materials. Optimized cutting material for unstable clamping conditions and increased service life.

Execution:
- HSSE PM

- **No. 15188:**
  - finishing teeth
  - centre cutting
  - TiAlN coating for maximum service life
  - straight shank in accordance with DIN 1835 B
  - also for dry milling using compressed air
- **No. 15902:**
  - Finishing teeth
  - Centre cutting
  - TiAlN-coating for maximum service life
  - Straight shank according to DIN 1835 B
  - Also for dry milling with compressed air

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
15188	78	51	35	43	38	130	325	110	85	70	70	140		75	23	23	20		
15902	78	51	35	43	43	130	325	70	70	110	85	140		75	23	23	20		

							ATORN®		ORION®	
						Type	N		N	
						Surface	TiAlN		TiAlN	
						Tool holding device	HB parallel shank		HB parallel shank	
mm	mm	mm	mm	F mm	Z (PCS)	fz steel 700 ● (mm)	15188... Ident. No.		15902... Ident. No.	
2	7	51	6	0.1	4	0.011	020	●	-	-
3	8	52	6	0.1	4	0.022	030	●	-	-
4	11	55	6	0.1	4	0.034	040	●	-	-
5	13	57	6	0.1	4	0.043	050	●	-	-
6	13	57	6	0.1	4	0.053	060	●	060	●
7	16	66	10	0.1	4	0.063	070	●	-	-
8	19	69	10	0.1	4	0.073	080	●	080	●
10	22	72	10	0.1	4	0.09	100	●	100	●
12	26	83	12	0.2	4	0.1	120	●	120	●
14	26	83	12	0.2	4	0.11	140	●	-	-
16	32	92	16	0.2	4	0.11	160	●	160	●
18	32	92	16	0.2	4	0.12	180	●	-	-
20	38	104	20	0.2	4	0.13	200	●	200	●
25	45	121	25	0.2	6	0.15	250	●	-	-
32	53	133	32	0.2	6	0.16	320	●	-	-

ORION = Prod. Gr. 106
ATORN® = Prod. Gr. 118

ATORN® End mill, HSSE-PM (Milling cutter design standard DIN 844 K)

4 flutes, TiAlN - coated

Application:
End mill for universal processing in a wide range of materials. Optimised flute material for delicate clamping situations and increased service life.

Execution:
- HSSE PM
- Finishing teeth
- Centre cutting

- TiAlN coating for outstanding service life
- Straight shank according to DIN 1835 B
- Also for dry milling with compressed air

Delivery:
10 mills in a case made of 15188

Notes:
Set in a case consisting of Ø
4/5/6/8/10/12/14/16/18/20 mm



Composition of set		4/5/6/8/10/12/14/16/18/20 mm
Number of pieces in assortment/set (PCS)		10
Type		N
15188...	Ident. No.	500
		●

ATORN® ORION® HSSE PM roughing cutter (Milling cutter design standard DIN 844 K)

4-6 flutes, TiAlN coated

HSSE-PM | TiAlN | Typ NRF | Typ NR | Typ NF | Z 4 | Z 5 | Z 6 | 30° | 45° | HB

Application:
Roughing cutter for universal machining in a wide range of materials.

Execution:
- HSSE PM
- TiAlN-coating for maximum service life
- Straight shank according to DIN 1835 B
- **No. 15269:**
  - Type NRF
  - Fine roughing teeth
- **No. 15905:**
  - Type NR
  - Roughing teeth
- **No. 15907:**
  - Type NF
  - Roughing and finishing teeth



No. 15269



No. 15905



No. 15907

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
15269	78	51	35	43	37	130	325	110	85	70	70	140		75	23	23	20		
15905	78	51	35	43	43	130	325	70	70	110	85	140		75	23	23	20		
15907	78	51	35	43	43	130	325	70	70	110	85	140		75	23	23	20		

							ATORN®		ORION®			
						Type	NRF		NR		NF	
						Surface	TiAlN		TiAlN		TiAlN	
						Tool holding device	HB parallel shank		HB parallel shank		HB parallel shank	
mm	mm	mm	mm	F mm	Z (PCS)	fz steel 700 ● (mm)	15269... Ident. No.		15905... Ident. No.		15907... Ident. No.	
6	13	57	6	0.1	4	0.038	060	●	060	●	060	●
8	19	69	10	0.1	4	0.052	080	●	080	●	080	●
10	22	72	10	0.1	5	0.078	100	●	100	●	100	●
12	26	83	12	0.2	5	0.09	120	●	120	●	120	●

							ATORN®		ORION®			
						Type	NRF		NR		NF	
						Surface	TiAlN		TiAlN		TiAlN	
						Tool holding device	HB parallel shank		HB parallel shank		HB parallel shank	
mm	mm	mm	mm	F mm	Z (PCS)	fz steel 700 ● (mm)	15269... Ident. No.		15905... Ident. No.		15907... Ident. No.	
14	26	83	12	0.2	5	0.1	140	●	-	-	-	-
16	32	92	16	0.2	5	0.1	160	●	160	●	160	●
18	32	92	16	0.2	5	0.11	180	●	-	-	-	-
20	38	104	20	0.2	5	0.12	200	●	200	●	200	●
25	45	121	25	0.2	5	0.13	250	●	-	-	-	-
32	53	133	32	0.2	6	0.18	320	●	-	-	-	-

ORION = Prod. Gr. 106
ATORN® = Prod. Gr. 118

ATORN® HSSE PM end mill (Milling cutter design standard DIN 844 K)

Type NRF

Application:
Roughing cutter for universal processing in a wide range of materials. Optimised flute material for delicate clamping situations and increased service life.

Execution:
- Roughing teeth, fine
- Type NRF
- TiAlN coating for increased service life
- Straight shank according to DIN 1835 B

Delivery:
8 mills in a case made of 15269

Notes:
Set in a case consisting of Ø 6/8/10/12/14/16/18/20 mm



Composition of set		6/8/10/12/14/16/18/20 mm
Number of pieces in assortment/set (PCS)		8
Type		NRF
15269...	Ident. No.	500
		●

Prod. Gr. 118

ATORN® HSSE PM roughing cutter (Milling cutter design standard DIN 844 K)

3-6 flutes, TiAlN coated

HSSE-PM | TiAlN | Typ HR | Z 5 | Z 6 | 45° | 45° | HB



Application:
Universal end mill for plunge, groove and slot milling as well as for face and circumferential milling.

Execution:
- HSSE PM
- Roughing teeth
- Centre cutting
- TiAlN-coating for maximum service life
- Straight shank according to DIN 1835 B

mm					16	20
mm					32	38
mm					92	104
mm					16	20
F mm					0.2	0.2
Z (PCS)					5	6
fz steel 1300 ● (mm)					0.095	0.13
	Type	Surface	Tool holding device			
15271...	HR	TiAlN	HB parallel shank	Ident. No.	160 ●	200 ●

Prod. Gr. 118

ATORN® HSSE PM roughing cutter (Milling cutter design standard DIN 844 K)

4-6 flutes, TiAlN coated

HSSE-PM | TiAlN | Typ HR | Typ HF | Z 4 | Z 5 | Z 6 | 35° | 30° | 45° | HB



No. 15311



No. 15312

Application:
Roughing cutter for universal machining.

Execution:
- HSSE PM
- Centre cutting
- Straight shank according to DIN 1835 B
- TiAlN-coating for maximum service life
- Also for dry milling with compressed air
- **No. 15311:**
  - HR - fine roughing teeth
  - Twist angle 35°
- **No. 15312:**
  - HRF - fine roughing and finishing teeth
  - Twist angle 30°

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plastics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
15311	78	51	35	43	37	130			80		70			75	23	23	20		
15312	78	51	35	43	43	130			70		85			75	23	23	20		

							Type	HR		HF	
							Surface	TiAlN		TiAlN	
							Tool holding device	HB parallel shank		HB parallel shank	
mm	mm	mm	mm	F mm	Z (PCS)	fz steel 700 ● (mm)		15311... Ident. No.		15312... Ident. No.	
6	13	57	6	0.2	4	0.042		060	●	060	●
8	19	69	10	0.2	4	0.057		080	●	080	●
10	22	72	10	0.2	4	0.069		100	●	100	●
12	26	83	12	0.2	4	0.08		120	●	120	●
14	26	83	12	0.2	4	0.083		140	●	140	●
16	32	92	16	0.2	4	0.09		160	●	160	●
18	32	92	16	0.2	4	0.1		180	●	180	●
20	38	104	20	0.2	5	0.13		200	●	200	●
25	45	121	25	0.2	5	0.14		250	●	250	●
28	45	121	25	0.2	5	0.15		-	-	280	●
30	45	121	25	0.2	6	0.15		300	●	300	●

Prod. Gr. 118

ATORN® HSSE PM roughing cutter (Milling cutter design standard DIN 844 L)

4-6 flutes, TiAlN coated

HSSE-PM | TiAlN | Typ HR | Z 4 | Z 5 | Z 6 | 30° | 45° | HB



Application:
Roughing cutter for universal machining.

Execution:
- HSSE PM

- Roughing teeth
- Centre cutting
- TiAlN-coating for maximum service life
- Straight shank according to DIN 1835 B

Application	Steel (N/mm²)			Stainless steel		Alu		Brass		Bronze		Plas-tics	Graphite G(C)FK	GG(G) GjMW	Titan-alloy	Nickel-alloy	Super-alloy	Hard mat.	
No.	<700	<1000	<1300	marten.	austen.	short	long	short	long	short	long							<55 HRC	<65 HRC
15319	78	51	**35**	**43**	37	130			85		70	140		75	**23**	23	20		

							Type	HR	
							Surface	TiAlN	
							Tool holding device	HB parallel shank	
mm	mm	mm	mm	F mm	Z (PCS)		fz steel 700 ● (mm)	15319... Ident. No.	
6	24	68	6	0.1	4		0.049	**060**	●
8	38	88	10	0.1	4		0.068	**080**	●
10	45	95	10	0.1	4		0.081	**100**	●
12	53	110	12	0.2	4		0.094	**120**	●
14	53	110	12	0.2	4		0.1	**140**	●
16	63	123	16	0.2	4		0.1	**160**	●
18	63	123	16	0.2	4		0.11	**180**	●
20	75	141	20	0.2	4		0.12	**200**	●
25	90	166	25	0.2	5		0.13	**250**	●
32	106	186	32	0.2	6		0.15	**320**	●

Prod. Gr. 118

ATORN interchangeable head system – the multifunctional milling system
high precision, rapid replacement, maximum productivity

with the new, modular interchangeable head milling system, HAHN+KOLB has added a high-precision and powerful tool system to its machining tool range.

increasing tool costs, more stringent requirements for process reliability and ease of operation continually call for new tool solutions. milling heads can be exchanged in the machine tool with simple and safe handling. this saves on setup costs and ensures reliable milling processes and outstanding milling results. the self-centring thread and axial and radial layout ensure maximum precision. a wide range of proven geometries are available with the WKS interface. deliverable holder variants include cylindrical and conical holders in steel and solid carbide designs.



fields of application:
- for ISO material groups P, M, N, K, and H
- for rough machining and smoothing of all contours
- flexible application in general mechanical engineering, forming and tool construction, the automotive industry and the aviation and aerospace industry
- perfect for use in series production
- particularly suitable for multiple-spindle automatic lathes without tool changer or lathes with driven tools

cost advantages:
- replacement of the head – shaft remains
- up to 50 cycles per shank possible
- interchangeable heads can be resharpened
- quick replacement – reduced off-peak times

flexibility:
modular system – the right tool for every application

cost advantage:
short machine downtimes due to quick tool change

geometries:
16 different geometries in Ø 10 - 20 mm for milling in a wide variety of materials

holder:
cylindrical and conical holders in short, long and extra-long ensure productivity, precision and variability

stability and accuracy:
highest stability and accuracy due to plan and cone system with self-centring thread

ATORN interchangeable head system – the interface in detail
optimum power and positive locking through innovative design

concentricity: concentricity accuracy of ±20 µm
flattening axial: provides the best rigidity
cone: honed, guarantees the highest concentricity
thread: special trapezoidal thread
pilot: for high system stability



ATORN interchangeable head system – assembly instructions



1. clean the interface on the milling head and tool holder



2. screw the milling head clockwise and hand-tighten into the interchangeable head holder (note: DANGER risk of injury! use gloves when mounting)

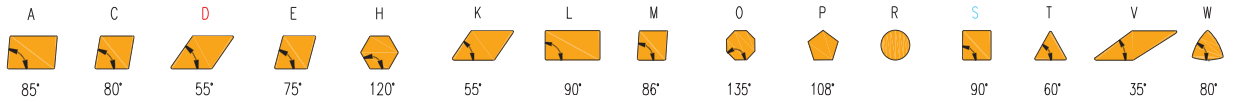


3. tighten the milling head with a torque wrench and the specified torques (see table) form-fit

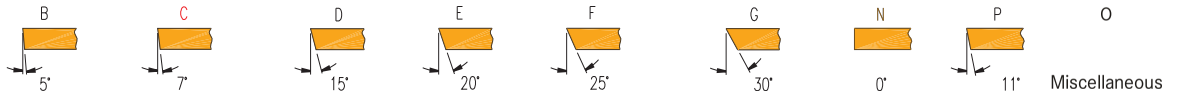
torques for mounting:

WK size	tightening torque
20	12
30	15
40	30
50	45

D	S	**1. Insert shape**



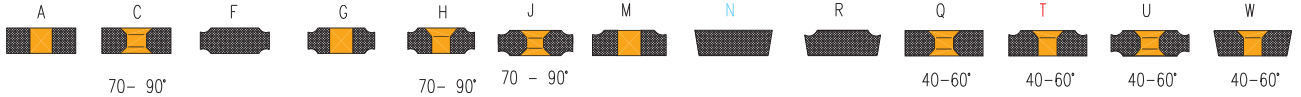
C	P	**2. Clearance angle**



M	K	**3. Tolerance class**

± tolerances (µm)	A	C	E	G	H	J	K	M	N	U
for incircle d	25	25	25	25	13	50–150	50–150	50–150	50–150	80–250
for test dimension m	5	13	25	25	13	5	13	80–200	80–200	130–380
for thickness s	25	25	25	50–130	25	25	25	50–130	25	130

T	N	**4. Insert type**



X Scalene insert shape or dimensions of symbols 5, 6, or 7 differing from the standard

11	12	**5. Cutter length**

C	04	05	06	08	09	12	16	19	25
D			07		11	15			
S			06		09	12	15	19	25
Incircle d	4.76	5.56	6.35	7.94	9.52	12.7	15.88	19.05	25.4

T	08	09	11	13	16	22	27	33
V			11	13	16			
W		03	04	05	06	08		
Incircle d	4.76	5.56	6.35	7.94	9.52	12.7	15.88	19.05

R	05	06	08	09	10	12	12
Incircle d	5	6	8	9,52	10	12	12.7
R	15	16	19	20	25	25	32
Incircle d	15.88	16	19.05	20	25	25.4	32

T3	03	**6. Insert thickness**



	01	T1	02	03	T3	04	05	06	07	09
Thickness s	1.59	1.98	2.38	3.18	3.97	4.76	5.56	6.35	7.94	9.52

08	ED	**7. Cutter angle**

Radius r – Corner radius

00	02	04	08	12	16	20	24	32
0	0.2	0.4	0.8	1.2	1.6	2.0	2.4	3.2

00	MO
Round plate (inch)	Round plate (metr.)

Setting angle – guillotine cutter

A	D	E	F	P	Z
45°	60°	75°	85°	90°	Misc.

Clearance angle – guillotine cutter

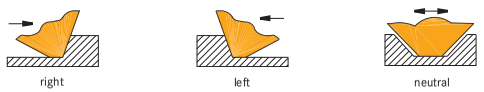
B	C	D	E	F	G	N	P	Z
5°	7°	15°	20°	25°	30°	0°	11°	Misc.

		8. Cutter version



Symbol N only if required

	R	**9. Cut direction**



Symbol N only if required

-41		**10. Additional indications**

These indications do not form part of the standard and are facultative.
e. g.–41 for chip former geometry
01520 for chip face bezel 0.15 mm × 20°

Example: turning **DCMT 11 T3 08-41**
Example: milling **SPKN 12 03 ED R**

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.
www.iconridge.com

Cemented carbide key



*HC 7620

① H = Cemented carbide
② C = Coated / W = Uncoated
③ 7 = Generation of cemented carbide grade
④ ISO Group 6 = P; 5 = M; 4 = K ; 3 = N; 2 = S
⑤ As per ISO Group P10; P20; P30;

***Note:** ORION cemented carbide grades follow the same pattern, with the difference that an O is placed in front, e.g. OHC 7625

overview: cemented carbide qualities ATORN/ORION

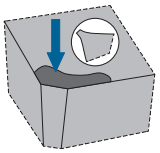
appli-cation	coating	range of applications 01 05 10 15 20 25 30 35 40 45
ISO P	CVD	HC7610
	CVD	HC7620
	CVD	HC7630
	CVD	OHC7615
	CVD	OHC7625
	CVD	OHC7635
ISO M	PVD	HC7510
	PVD	HC7520
	PVD	HC7530
	PVD	OHC7515
	PVD	OHC7520
	PVD	OHC7525
	PVD	OHC7530
	PVD	OHC7535
ISO K	CVD	OHC6410
	CVD	OHC6420
ISO N	CVD	OHC7310
	CVD	OHC6310
	CVD	OHW6310
	CVD	HC6310
	CVD	HW6310
ISO S	CVD	HC7210
	CVD	HC7220
		←← wear resistance toughness →→

cutting data on packaging



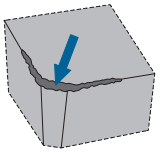
the HK ISO range of indexable inserts is always delivered with cut data on the packaging. this provides the user with a high degree of safety and good handling.

Indexable inserts - Types of wear and solution proposals



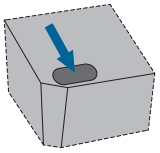
Built-up edges

- Select cutting material types with less friction resistance
- Increase the cutting speed
- Increase the feed
- Do not use water-soluble coolant
- Check coolant use
- Check indexable insert classification
- Check chip breaker selection
- Increase clearance angle
- Reduce chamfer and rounding of cutting edge



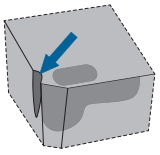
Brittle damage to the cutting edge

- Use tougher cemented carbide type
- Select less intensive cutting conditions
- Apply different cutting edge geometry
- Reduce feed when inserting into opening



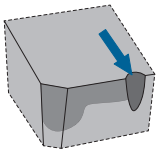
Scour wear

- Select harder cutting material
- Reduce cutting speed
- Reduce feed
- Reduce cutting depth
- Check coolant use
- Check chip breaker selection
- Increase clearance angle



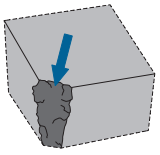
Oxidation gouging on secondary cutting edge

- Apply coated or wear-resistant cemented carbide types, if possible apply coated indexable inserts with Al2O3 content.
- Apply cooling emulsion or Increase cooling intensity
- Reduce cutting speed



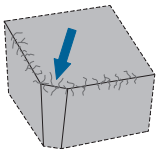
Notch wear on main cutting edge

- Apply coated or wear-resistant cemented carbide type, if possible apply coated indexable inserts with Al2O3 content.
- Use tool with a smaller adjustment angle
- Distribute chip unevenly



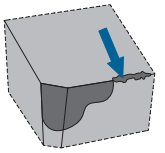
Breaking of cutting edge

- Select tougher cutting material
- Select cutting material type less sensitive to temperature fluctuations
- Reduce feed
- Reduce cutting depth
- Check chip breaker selection
- Increase size of chamfer and rounding of cutting edge
- Select machine with higher performance and rigidity



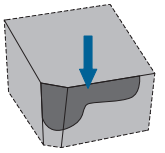
Ridge cracking at the cutting edge

- Select cutting material type less sensitive to temperature fluctuations
- Reduce cutting speed
- Reduce feed
- Reduce cutting depth
- Do not use water-soluble coolant
- Check coolant use
- Check chip breaker selection
- Increase clearance
- Reduce chamfer and rounding of cutting edge



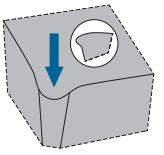
Damage to the cutting edge (outside opening)

- Change feed
- Select tool with different adjustment angle
- Apply different cutting edge geometry
- (different chip former)
- Use tougher cemented carbide type



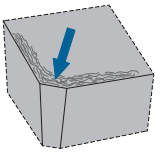
Breaking of cutting edge

- Select tougher cutting material
- Select cutting material type less sensitive to temperature fluctuations
- Reduce feed
- Reduce cutting depth
- Check chip breaker selection
- Increase size of chamfer and rounding of cutting edge
- Select machine with higher performance and rigidity



Plastic deformation

- Apply wear-resistant cemented carbide type
- Reduce cutting speed
- Reduce feed
- Apply cooling emulsion or Increase cooling intensity
- Apply indexable inserts with a larger rounding radius of the tip
- Apply indexable inserts with larger tip angle



Fatigue crack along the open space

- Select tougher cemented carbide type
- Change retracting and extending of tool
- Change contact conditions
- Apply different cutting edge geometry or Indexable inserts with a different design of cutting edge
- Change feed

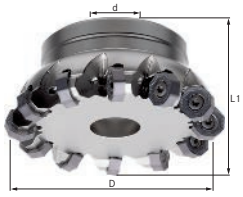
ATORN® High-performance 45° face milling cutter

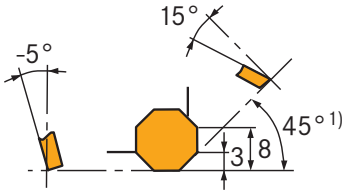
For indexable milling inserts ONGU

Application:
High-performance face milling cutters are tools for economic processing of steel and cast materials. The indexable insert can be used either way round and has a total of 16 cutting edges. Despite their low axial infeed values of max. 3 mm (4 mm) with an insert size of 12.7 mm (16 mm), the cutting edges allow significantly higher feed rates and make a considerable contribution to improved productivity. The low axial forces guarantee the best possible smoothness of the processed surfaces with low roughness depths (Rz < 15 Nm), even for rough machining.

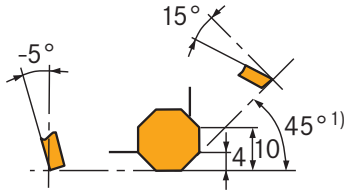
Execution:
- Up to Ø 100 mm with inner cooling
- Normal and fine pitch deliverable
- Wear-resistant, nickel-plated version
- Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm

Advantage:
- Reversible tip with 16 cutting edges
- High profitability thanks to the many cutting edges
- Reversible tip for use both as a roughing and a finishing insert
- High tooth feed and feed rates are possible





Ident. No. 200–214
WPL ONGU0505



Ident. No. 216–238
WPL ONGU0606

							High-performance 45° face milling cutter		Clamping screw for indexable inserts	
D (mm)	D1 max (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	16002... Ident. No.		16108... Ident. No.	
32	38	40	16	3	3	ONGU 0505..	200	○	085	●
32	38	40	16	3	4	ONGU 0505..	202	○	085	●
40	46	40	22	3	4	ONGU 0505..	204	○	085	●
40	46	40	22	3	5	ONGU 0505..	206	●	085	●
50	56	40	22	3	5	ONGU 0505..	208	●	085	●
50	56	40	22	3	7	ONGU 0505..	210	○	085	●
63	69	40	22	3	7	ONGU 0505..	212	●	085	●
63	69	40	22	3	9	ONGU 0505..	214	●	085	●
50	58	40	22	4	4	ONGU 0606..	216	●	086	●
50	58	40	22	4	6	ONGU 0606..	218	●	086	●
63	71	40	22	4	5	ONGU 0606..	220	●	086	●
63	71	40	22	4	8	ONGU 0606..	222	●	086	●
80	88	50	27	4	7	ONGU 0606..	224	●	086	●
80	88	50	27	4	10	ONGU 0606..	226	○	086	●
100	108	50	32	4	9	ONGU 0606..	228	●	086	●
100	108	50	32	4	12	ONGU 0606..	230	●	086	●
125	133	63	40	4	11	ONGU 0606..	232	●	086	●
125	133	63	40	4	15	ONGU 0606..	234	●	086	●
160	168	63	40	4	13	ONGU 0606..	236	○	086	●
160	168	63	40	4	19	ONGU 0606..	238	●	086	●

Prod. Gr. 108

ATORN® Indexable milling insert ONGU

For high-performance 45° face milling cutter no. 16002

Application:
Ident. No. 690, 694: Wide finishing plates for optimised surface qualities

Delivery:
Box quantity: 10 pieces

						Coated		Coated		Coated	
					Carbide type	HC4410		HC4625		HC4640	
					Material to be processed	Steel | Cast metal		Steel		Steel | Stainless steel | Special alloy	
					Suitable for material group P	○		●		●	
					Suitable for material group M					○	
					Suitable for material group N						
					Suitable for material group K	●					
					Suitable for material group S					○	
					Suitable for material group H						
	ISO name	Type	Knife edge length (mm)	Edge radius (mm)	Indexable insert type	16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	ONGU 0505 ANEN	Rough machining, smoothing	12.7	2	40	688	●	684	●	680	●
	ONGU 0606 ANEN	Rough machining, smoothing	16	2	41	692	●	686	●	682	●
	ONGU 0505 ANEN-SL	Wide finishing	12.7	2	40	690	●	-	-	-	-
	ONGU 0606 ANEN-SL	Wide finishing	16	2	41	694	●	-	-	-	-

Prod. Gr. 156

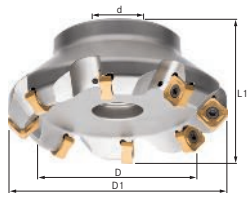
ATORN® Face milling cutters 45°

For milling cutter indexable inserts SN.X 1206

Application:
The indexable milling cutter allows economical face milling at medium cutting depths and rough machining of many materials including steel, VA, cast materials and aluminium. The robust reversible tip with eight cutting edges is particularly economical and has impressive universal possible applications. 6.35 mm insert thickness improves process reliability enormously and protects the support body.

Execution:
- Wear-resistant, nickel-plated version
- Normal and fine pitch

Advantage:
- Double-sided indexable insert with large chip angle and eight cutting edges
- Outstanding surface finish
- Very wide range of applications
- Approx. max. 5.5 mm
- Easy cutting with low cutting force



							Face milling cutters 45°		Clamping screw for indexable inserts	
D (mm)	D1 max (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	16023... Ident. No.		16108... Ident. No.	
50	63	40	22	5.5	4	SN.X 1206..	050	●	173	●
50	63	40	22	5.5	6	SN.X 1206..	051	●	173	●
63	76	40	22	5.5	6	SN.X 1206..	063	●	173	●
63	76	40	22	5.5	8	SN.X 1206..	064	●	173	●
80	93	50	27	5.5	7	SN.X 1206..	080	●	173	●
80	93	50	27	5.5	10	SN.X 1206..	081	●	173	●
100	113	50	32	5.5	8	SN.X 1206..	100	●	173	●
100	113	50	32	5.5	12	SN.X 1206..	101	●	173	●
125	138	63	40	5.5	10	SN.X 1206..	125	●	173	●
125	138	63	40	5.5	16	SN.X 1206..	126	●	173	●
160	173	63	40	5.5	12	SN.X 1206..	160	●	173	●
160	173	63	40	5.5	20	SN.X 1206..	161	○	173	●
200	213	63	60	5.5	14	SN.X 1206..	200	○	173	●

Prod. Gr. 108

ATORN® Indexable milling insert SN.X 1206..

For face milling cutter no. 16023

Delivery:
Packaging unit: 10 pieces

				Surface	Uncoated		Coated		Coated		Coated	
				Carbide type	HW4310		HC4410		HC4535		HC4630	
				Material to be processed	Non-ferrous metal		Steel | Cast metal		Steel | Stainless steel		Steel	
				Suitable for material group P			○		●		●	
				Suitable for material group M					●			
				Suitable for material group N	●							
				Suitable for material group K			●					
				Suitable for material group S								
				Suitable for material group H								
	ISO name	Knife edge length (mm)	Edge radius (mm)		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	SNEX 1206 ANN-MA	12.7	2.36		270	●	-	-	-	-	-	-
	SNMX 1206 ANN-MM1	12.7	2.36		-	-	271	●	272	●	273	●

Prod. Gr. 156

ATORN® Face milling cutter 45°

For milling cutter indexable inserts SAHT 1306..

Application:
For machining stainless steels and other long-chipping materials. For face milling, chamfering, rough machining and finishing.

Execution:
- Wear-resistant, nickel-plated version
- With robust support design
- Clamping screw tightening torque (indexable insert) M5 = 8 Nm

Advantage:
- Particularly smooth cut and low noise generation
- Safe chip removal due to helical chips
- Indexable insert with sharp blade particularly suited to milling VA



D (mm)	D1 max (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	Face milling cutter 45° 16025... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
50	61	40	22	6	4	SAHT 1306..	150	●	115	●
63	74	40	22	6	5	SAHT 1306..	163	●	115	●
80	91	50	27	6	6	SAHT 1306..	180	●	115	●
100	111	50	32	6	7	SAHT 1306..	200	●	115	●
125	136	63	40	6	8	SAHT 1306..	225	●	115	●

Prod. Gr. 155

ATORN® Indexable milling insert SAHT 1306..

For face milling cutter no. 16025/16027

Delivery:
Packaging unit: 10 pieces

	ISO name	Knife edge length (mm)	Edge radius (mm)	Surface	Coated		Coated		Coated	
				Carbide type	HC4410		HC4540		HC4640	
				Material to be processed	Steel | Stainless steel | Non-ferrous metal		Stainless steel | Special alloy		Steel | Stainless steel | Special alloy	
				Suitable for material group P	○				○	
				Suitable for material group M	○		●		●	
				Suitable for material group N	●					
				Suitable for material group K						
				Suitable for material group S			○		●	
				Suitable for material group H						
					16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	SAHT 1306AA EN	13.5	0.8		192	●	191	●	190	●

Prod. Gr. 156

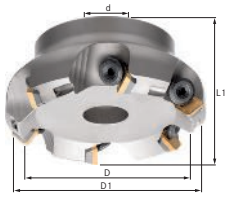
ATORN® Face milling cutter 45°

For milling cutter indexable inserts SEEN 1203, SEER 1203

Application:
Universal use in all materials.

Execution:
- Wear-resistant, nickel-plated version
- Indexable milling inserts for clamping using precision supports

Advantage:
- Safe clamping with plate screw
- High cutting performance even in low-powered machines
- Variable pitch for smooth running



D (mm)	D1 max (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	Face milling cutter 45° 16022... Ident. No.		Shims 16108... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.		Clamping screw for shims 16108... Ident. No.	
50	63	48	22	6	4	SE.. 1203..	050	●	175	●	176	●	177	●
63	76	40	22	6	5	SE.. 1203..	063	●	175	●	176	●	177	●
80	93	50	27	6	6	SE.. 1203..	080	●	175	●	176	●	177	●
100	113	50	32	6	6	SE.. 1203..	100	●	175	●	176	●	177	●
125	138	63	40	6	7	SE.. 1203..	125	●	175	●	176	●	177	●
160	173	63	40	6	7	SE.. 1203..	160	●	175	●	176	●	177	●
200	213	63	60	6	10	SE.. 1203..	200	○	175	●	176	●	177	●
250	263	63	60	6	13	SE.. 1203..	250	●	175	●	176	●	177	●

Prod. Gr. 108

ATORN® Indexable milling insert SE.. 1203..

For face milling cutter 16022

Application:
Ident. No. 124, 134: * Reversible tip optimised for machining steel

Delivery:
Packaging unit: 10 pieces

			Surface	Coated		Coated		Coated		Coated		
			Carbide type	HC4410		HC4620		HC4620		HC4626		
			Material to be processed	Steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Cast metal		Steel | Stainless steel | Cast metal		Steel | Cast metal | Hardened material	
			Suitable for material group P	○		●		●		●		
			Suitable for material group M			●		○				
			Suitable for material group N	○								
			Suitable for material group K	●		●		○		●		
			Suitable for material group S									
			Suitable for material group H							○		
	ISO name	Knife edge length (mm)	Corner chamfer (mm)	16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		
	SEEN 1203 AF-SN	12.7	1.6	122	●	123	●	124	●	125	●	
	SEEN 1203 AF-FN	12.7	1.6	-	-	121	●	-	-	-	-	
	SEER 1203 AF-EN	12.7	1.6	-	-	131	●	-	-	-	-	
	SEER 1203 AF-SN	12.7	1.6	-	-	133	●	134	●	135	●	

Prod. Gr. 156

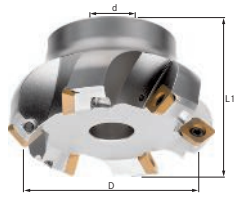
ATORN® Face milling cutter 45°

For milling cutter indexable inserts SEET 1204, SEEW 1204

Application:
Universal use in all materials.

Execution:
- Wear-resistant, nickel-plated version

- With robust support design
- Extremely soft cut
- Variable pitch for smooth running
- Clamping screw tightening torque (indexable insert) M5 = 8 Nm



							Face milling cutter 45°		Clamping screw for indexable inserts		Retaining screw for support	
D (mm)	D1 max (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	16024... Ident. No.		16108... Ident. No.		16108... Ident. No.	
40	53	40	16	6	3	SE.. 1204..	040	●	130	●	136	●
50	63	48	22	6	4	SE.. 1204..	050	●	130	●	144	●
50	63	48	22	6	5	SE.. 1204..	051	●	130	●	144	●
63	76	48	22	6	5	SE.. 1204..	063	●	130	●	144	●
63	76	48	22	6	6	SE.. 1204..	064	●	130	●	144	●
80	93	50	27	6	6	SE.. 1204..	080	●	130	●	140	●
80	93	50	27	6	7	SE.. 1204..	081	●	130	●	140	●
100	113	50	32	6	6	SE.. 1204..	100	●	130	●	142	●
100	113	50	32	6	8	SE.. 1204..	101	●	130	●	142	●
125	138	63	40	6	7	SE.. 1204..	125	●	130	●	143	●
125	138	63	40	6	9	SE.. 1204..	126	●	130	●	143	●
160	173	63	40	6	8	SE.. 1204..	160	●	130	●	143	●
160	173	63	40	6	10	SE.. 1204..	161	○	130	●	143	●
200	213	63	60	6	12	SE.. 1204..	200	○	130	●	143	●
250	263	63	60	6	16	SE.. 1204..	250	○	130	●	143	●

Prod. Gr. 108

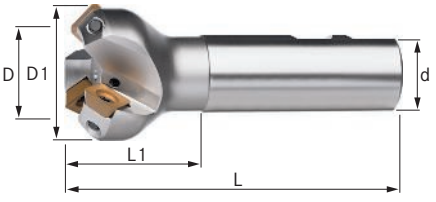
ATORN® Face milling cutter 45° with Weldon shank

For milling cutter indexable inserts SEET 1204, SEEW 1204

Application:
Universal use in all materials.

Execution:
- Weldon shank
- Wear-resistant, nickel-plated version

- With robust support design
- Extremely soft cut
- Variable pitch for smooth running
- Clamping screw tightening torque (indexable insert) M5 = 8 Nm



							Face milling cutter 45° with Weldon shank		Clamping screw for indexable inserts	
D (mm)	D1 max (mm)	L (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	16024... Ident. No.		16108... Ident. No.	
25	38	100	25	6	2	SE.. 1204..	325	●	130	●
32	45	110	25	6	3	SE.. 1204..	332	●	130	●

Prod. Gr. 108

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® Milling insert SE.. 1204..

For face milling cutter no. 16024

Application:
Ident. No. 721: * Optimally suited for dry machining

Delivery:
Ident. No. 151–160: Packaging unit: 10 pieces
Ident. No. 713–721: Box quantity: 10 pieces

	Surface			Uncoated		Coated		Coated		Coated		Coated	
	Carbide type			HW4410		HC4410		HC4640		HC4630		HC4620	
	Material to be processed			Non-ferrous metal		Steel | Stainless steel | Non-ferrous metal | Cast metal | Hardened material		Steel | Stainless steel | Cast metal		Steel | Cast metal		Steel | Stainless steel | Cast metal | Special alloy | Hardened material	
	Suitable for material group P					○		●		●		●	
	Suitable for material group M					○		●				●	
	Suitable for material group N			●		●							
	Suitable for material group K					●		○		●		●	
	Suitable for material group S											○	
	Suitable for material group H					●						○	
	ISO name	Knife edge length (mm)	Corner chamfer (mm)	16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	SEET 1204 AF-FN	12.7	1.6	160	●	-	-	-	-	-	-	-	-
	SEET 1204 AF-SN	12.7	1.6	-	-	151	●	152	●	153	●	-	-
	SEEW 1204 AF-EN	12.7	1.6	-	-	-	-	715	●	-	-	719	●
	SEEW 1204 AF-SN	12.7	1.6	-	-	717	●	716	●	721	●	713	●

Prod. Gr. 156

ATORN 90° high-performance angular milling cutter

everywhere a straight edge needs to be created in steel, cast iron, stainless steel or non-ferrous materials, ATORN makes precise angular milling cutting possible. the 90° angular milling cutters have excellent machining properties.

the entire spectrum of our new angular milling cutting tools offers basic bodies in 5 versions. the high number of teeth makes it possible to achieve large feeds. the highly positive geometry and uneven pitch ensure soft cutting and smooth operation. extra-long end mills are suitable for working with especially deep projections.

flexible complete program

- Ø range 10-100 mm
- with shaft, thread and location hole
- angular milling cutter and long edge milling cutter
- with tight and wide division

highly positive indexable inserts

- cutting depth ap max. = up to 16.5mm
- 2 geometries
- corner radii of 0.2 - 4 mm
- 6 cemented carbide grades
- low power consumption

exact 90°

- angular mill cutting without offsets during rough machining and finishing reduces post-processing efforts

high productivity

- large cutting depths
- high feed rates
- high removal rates

ATORN®



ATORN ATORN 90° high-performance angular milling cutter

4 indexable insert sizes – ready for any task



ADKX 0602..



ADKX 0903..

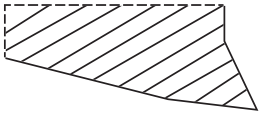
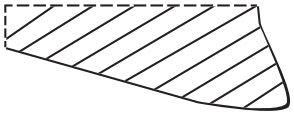


ADKX 1204..



ADKX 1705..

ATORN indexable insert form 90° high-performance angular milling cutter

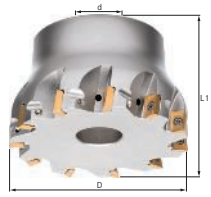
	chip shape	description
 **ADHX..**	 **FR-ALC (sharp edge)**	**for aluminium** specially ground indexable inserts geometry with a polished chip surface and sharp cutting edges for machining non-ferrous materials (aluminium, soft copper alloys and plastics)
 **ADKX..**	 **SR and SR-TR (chamfered and rounded)**	**for universal machining** universal indexable inserts geometry with all-round protection chamfer for machining steel and cast materials as well as stainless steels. version – TR with chip surface topography.

ATORN® Angular milling cutter 90°

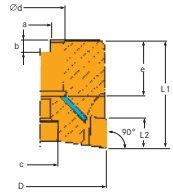
For indexable milling inserts AP.. 1003.. / AP.. 1604..

Application:
For universal use in all materials.

Execution:
- Wear-resistant, nickel-plated version
- With internal cooling
- **No. 16017:** Clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm
- **No. 16019:** Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm



No. 16017



No. 16017

D (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	Angular milling cutter 90° 16017... Ident. No.		16019... Ident. No.		Retaining screw for support 16108... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
40	40	16	9.3	6	21 | 22	AP.. 1003..	341	●	-	-	138	●	225	●
50	40	22	9.3	7	21 | 22	AP.. 1003..	351	●	-	-	138	●	225	●
63	40	22	9.3	8	21 | 22	AP.. 1003..	364	●	-	-	138	●	225	●
80	50	27	9.3	11	21 | 22	AP.. 1003..	380	●	-	-	140	●	225	●
100	50	32	9.3	12	21 | 22	AP.. 1003..	400	●	-	-	142	●	225	●
40	40	16	14.9	4	27 | 28	AP.. 1604..	-	-	020	●	-	-	129	●
50	40	22	14.9	5	27 | 28	AP.. 1604..	-	-	021	●	-	-	129	●
63	40	22	14.9	6	27 | 28	AP.. 1604..	-	-	022	●	-	-	129	●
80	50	27	14.9	7	27 | 28	AP.. 1604..	-	-	023	●	-	-	129	●
100	50	32	14.9	8	27 | 28	AP.. 1604..	-	-	024	●	-	-	129	●
125	63	40	14.9	9	27 | 28	AP.. 1604..	-	-	025	●	-	-	129	●
160	63	40	14.9	10	27 | 28	AP.. 1604..	-	-	026	●	-	-	129	●
200	63	60	14.9	13	27 | 28	AP.. 1604..	-	-	027	○	-	-	129	●
250	63	60	14.9	16	27 | 28	AP.. 1604..	-	-	028	○	-	-	129	●

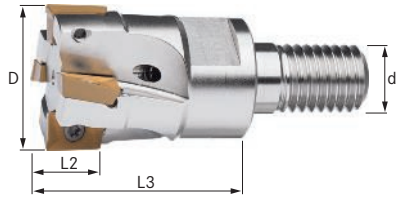
Prod. Gr. 108

ATORN® Angular milling cutter 90° with thread

For indexable milling inserts AP.. 1003.. / AP.. 1604..

Application:
For universal use in all materials.

Execution:
- With screw-in thread
- Wear-resistant, nickel-plated version
- With internal cooling
- Clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm



D (mm)	L3 (mm)	d	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	Angular milling cutter 90° with thread 16017... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
16	25	M8	9.3	2	21	AP.. 1003..	160	●	225	●
20	30	M10	9.3	3	21	AP.. 1003..	161	●	225	●
25	35	M12	9.3	4	21	AP.. 1003..	162	●	225	●

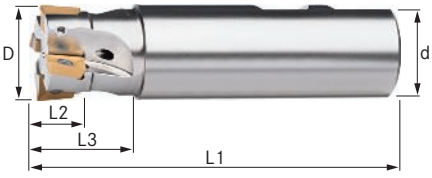
Prod. Gr. 108

ATORN® 90° angular milling cutter with Weldon shank

For indexable milling inserts AP.. 1003.. / AP.. 1604..

Application:
For universal use in all materials.

Execution:
- **No. 16017:**
  - with weld-on shank
  - wear-proof, nickel-plated design
  - with inner cooling
  - clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm
- **No. 16019:**
  - With Weldon shank
  - Wear-resistant, nickel-plated version
  - With internal cooling
  - Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm



No. 16017 010–16017 032, 16017 157–16017 247

D (mm)	L2 (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	90° angular milling cutter with Weldon shank 16017... Ident. No.		16019... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
10	24	80	16	9.3	1	21 | 22	AP.. 1003..	010	●	-	-	225	●
10	24	150	16	9.3	1	21 | 22	AP.. 1003..	140	●	-	-	225	●
12	24	80	16	9.3	1	21 | 22	AP.. 1003..	012	●	-	-	225	●
12	24	150	16	9.3	1	21 | 22	AP.. 1003..	141	●	-	-	225	●
14	24	80	16	9.3	1	21 | 22	AP.. 1003..	014	●	-	-	225	●
15	25	85	16	9.3	2	21 | 22	AP.. 1003..	015	●	-	-	225	●
15.7	25	85	16	9.3	2	21 | 22	AP.. 1003..	157	○	-	-	225	●

								90° angular milling cutter with Weldon shank				Clamping screw for indexable inserts	
D (mm)	L2 (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	16017... Ident. No.		16019... Ident. No.		16108... Ident. No.	
16	25	85	16	9.3	2	21 | 22	AP.. 1003..	016	●	-	-	225	●
16	100	150	16	9.3	2	21 | 22	AP.. 1003..	142	●	-	-	225	●
17	25	85	16	9.3	2	21 | 22	AP.. 1003..	017	●	-	-	225	●
18	25	85	20	9.3	2	21 | 22	AP.. 1003..	018	●	-	-	225	●
18	25	150	16	9.3	2	21 | 22	AP.. 1003..	146	●	-	-	225	●
19.7	25	90	20	9.3	3	21 | 22	AP.. 1003..	197	○	-	-	225	●
20	25	90	20	9.3	3	21 | 22	AP.. 1003..	020	●	-	-	225	●
20	100	150	20	9.3	3	21 | 22	AP.. 1003..	143	●	-	-	225	●
22	25	95	25	9.3	3	21 | 22	AP.. 1003..	022	●	-	-	225	●
24.7	25	95	25	9.3	4	21 | 22	AP.. 1003..	247	○	-	-	225	●
25	25	95	25	9.3	4	21 | 22	AP.. 1003..	025	●	-	-	225	●
25	25	150	20	9.3	4	21 | 22	AP.. 1003..	144	●	-	-	225	●
25	44	100	25	14.9	2	27 | 28	AP.. 1604..	-	-	001	●	129	●
25	60	200	25	14.9	2	27 | 28	AP.. 1604..	-	-	002	●	129	●
28	25	95	25	9.3	4	21 | 22	AP.. 1003..	028	●	-	-	225	●
30	25	95	25	9.3	4	21 | 22	AP.. 1003..	030	●	-	-	225	●
32	26	95	25	9.3	5	21 | 22	AP.. 1003..	032	●	-	-	225	●
32	26	150	25	9.3	5	21 | 22	AP.. 1003..	145	●	-	-	225	●
32	50	110	32	14.9	3	27 | 28	AP.. 1604..	-	-	003	●	129	●
32	60	200	32	14.9	3	27 | 28	AP.. 1604..	-	-	004	●	129	●
40	45	115	32	14.9	4	27 | 28	AP.. 1604..	-	-	005	●	129	●

Prod. Gr. 108

ATORN® Bore/counter sink milling cutter 90° with Weldon shank

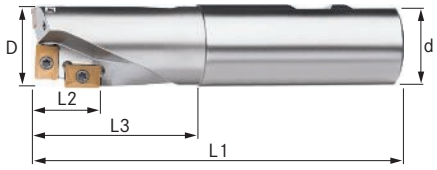
For indexable milling inserts AP.. 1003.. / AP.. 1604..

Application:
For drilling/countersinking in all materials.

Execution:
- With Weldon shank
- Wear-resistant, nickel-plated version
- Robust supports

- **No. 16017:** Clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm
- **No. 16019:** Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm

Advantage:
- High cutting performance
- Safe chip removal thanks to positive cutting geometry



No. 16017

									Bore/counter sink milling cutter 90° with Weldon shank				Clamping screw for indexable inserts	
D (mm)	L3 (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Number of indexable inserts (PCS)	Indexable insert type	Suitable for indexable inserts	16017... Ident. No.		16019... Ident. No.		16108... Ident. No.	
20	35	90	20	17	2	3	21	AP.. 1003..	050	●	-	-	225	●
25	50	110	25	19	2	3	21	AP.. 1003..	052	●	-	-	225	●
20	30	150	20	17	2	3	21	AP.. 1003..	051	●	-	-	225	●
25	50	150	25	19	2	3	21	AP.. 1003..	053	●	-	-	225	●
32	50	130	32	30	2	3	27	AP.. 1604..	-	-	010	●	129	●

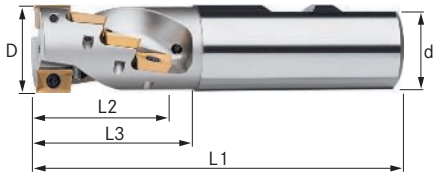
Prod. Gr. 108

ATORN® Long edge milling cutter 90° with Weldon shank

For indexable milling inserts AP.. 1003..

Application:
No. 16018: For universal use in all materials for rough cutting.
No. 16019: For universal rough cutting in all materials.

Execution:
- **No. 16018:**
  - with weld-on shank
  - wear-proof, nickel-plated design
  - with inner cooling
  - clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm
- **No. 16019:**
  - With Weldon shank
  - Wear-resistant, nickel-plated version
  - With internal cooling
  - Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm



No. 16018

D (mm)	L2 (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Number of indexable inserts (PCS)	Indexable insert type	Suitable for indexable inserts	Long edge milling cutter 90° with Weldon shank 16018... Ident. No.		16019... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
20	28	87	20	28	1	4	21	AP.. 1003..	020	●	-	-	225	●
25	37	105	25	36	2	8	21	AP.. 1003..	025	●	-	-	225	●
32	46	115	32	45	2	10	21	AP.. 1003..	032	●	-	-	225	●
40	55	130	32	54	3	18	21	AP.. 1003..	040	●	-	-	225	●
25	29	105	25	29	1	2	27	AP.. 1604..	-	-	501	○	129	●
32	44	115	32	44	2	6	27	AP.. 1604..	-	-	502	●	129	●
40	58	130	32	58	2	8	27	AP.. 1604..	-	-	503	●	129	●

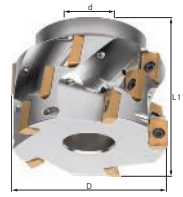
Prod. Gr. 108

ATORN® Long edge milling cutter 90°

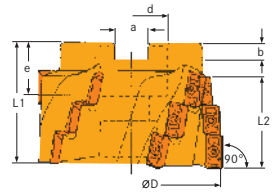
For indexable milling inserts AP.. 1003.. / AP.. 1604..

Application:
For universal rough cutting in all materials.

Execution:
- With internal cooling
- **No. 16018:**
  - Robust support design for high-performance milling
  - Clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm
- **No. 16019:**
  - Wear-resistant, nickel-plated version
  - Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm



No. 16019



No. 16019

D (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Number of indexable inserts (PCS)	Indexable insert type	Suitable for indexable inserts	Long edge milling cutter 90° 16018... Ident. No.		16019... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
40	50	16	37	3	12	21	AP.. 1003..	142	●	-	-	225	●
50	60	22	46	3	15	21	AP.. 1003..	152	●	-	-	225	●
63	60	27	46	4	20	21	AP.. 1003..	162	○	-	-	225	●
50	50	27	30	3	6	27	AP.. 1604..	-	-	510	●	129	●
63	60	27	44	4	12	27	AP.. 1604..	-	-	511	●	129	●
80	60	32	44	5	15	27	AP.. 1604..	-	-	512	●	129	●
100	60	40	44	6	18	27	AP.. 1604..	-	-	513	○	129	●

Prod. Gr. 108

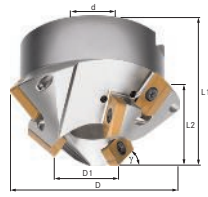
ATORN® 15°, 30°, 45°, 60°, 75° and variable x° chamfer cutters

For indexable milling inserts AP.. 1003.. / AP.. 1604..

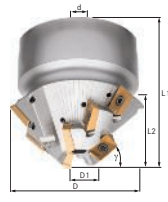
Application:
Universal use for rough cutting of chamfers. Ideal for preliminary machining of welding seams. Recess formation possible thanks to indexable insert tolerances; improved finish can be achieved using APHT indexable inserts.

Execution:
- nickel-plated support
- any required chamfer angle is available (minimum acceptance 2 pieces)
- **Ident. No. 015–075:** clamping screw tightening torque (indexable insert) M4 = 5.2 Nm
- **Ident. No. 115–175:** clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm

Delivery:
Supplied with clamping screws and wrench



Ident. No. 015–075



Ident. No. 115–175

Chamfer angle (Degree)	D (mm)	D1 (mm)	Max. chamfer width (mm)	Max. chamfer height (mm)	Max. chamfer length (mm)	L1 (mm)	d (mm)	Number of cutting edges (PCS)	Number of indexable inserts (PCS)	Indexable insert type	Suitable for indexable inserts	15°, 30°, 45°, 60°, 75° and variable x° chamfer cutters 16055... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
15	70	17	27	7	27.5	50	22	3	9	21	AP.. 1003..	115	●	225	●
30	65	17	24	13	27.5	50	22	3	9	21	AP.. 1003..	130	●	225	●
45	56	17	19	19	27.5	50	22	3	9	21	AP.. 1003..	145	●	225	●
60	45	17	13	24	27.5	50	16	3	9	21	AP.. 1003..	160	●	225	●
75	33	19	7	27	27.5	60	16	3	9	21	AP.. 1003..	175	●	225	●
15	94	35	29.5	8	30	50	27	3	6	27	AP.. 1604..	015	●	129	●
30	88	35	26.5	15	30	50	27	3	6	27	AP.. 1604..	030	●	129	●
45	77.8	35	21.4	21.5	30	50	27	3	6	27	AP.. 1604..	045	●	129	●
60	65	35	15.1	26.5	30	50	27	3	6	27	AP.. 1604..	060	●	129	●
75	50.7	35	8	29.5	30	60	22	3	6	27	AP.. 1604..	075	●	129	●

Prod. Gr. 155

ATORN® Indexable milling insert AP.. 10..

For cutters with indexable inserts no. 16017/16018/16055

Delivery:
Ident. No. 095–108: Box quantity: 10 pieces
Ident. No. 109: Packaging unit: 10 pieces

					Surface	Uncoated		Coated		Coated		Coated		Coated		Coated	
					Carbide type	HW4415		HC4535		HC4540		HC4615		HC4626		HC4635	
					Material to be processed	Non-ferrous metal		Steel | Stainless steel | Special alloy		Steel | Stainless steel | Cast metal | Special alloy		Steel		Steel | Cast metal | Hardened material		Steel | Cast metal	
					Suitable for material group P			●		●		●		●		●	
					Suitable for material group M			●		●							
					Suitable for material group N	●											
					Suitable for material group K					○				●		○	
					Suitable for material group S			●		●							
					Suitable for material group H									○			
	ISO name	Knife edge length (mm)	Edge radius (mm)	Indexable insert type	16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	APHX 100304 FR-ALU	10.5	0.4	21	103	●	-	-	-	-	-	-	-	-	-	-
	APKT 1003 PDER-S	10.5	0.5	21	-	-	095	●	-	-	097	●	-	-	099	●
	APKT 1003 PDER-M	11	0.5	22	-	-	-	-	108	●	-	-	-	-	-	-
	APKT 1003 PDER-M	11	0.5	22	-	-	-	-	-	-	-	-	109	●	-	-

Prod. Gr. 156

ATORN® Indexable milling insert AP.. 10..

For cutters with indexable inserts no. 16017/16018/16055

Delivery:
Box quantity: 10 pieces

					Surface	Coated		Coated		Coated	
					Carbide type	HC4540		HC4410		HC4620	
					Material to be processed	Steel | Stainless steel | Cast metal | Special alloy		Non-ferrous metal | Cast metal		Steel | Cast metal	
					Suitable for material group P	●				●	
					Suitable for material group M	●					
					Suitable for material group N			●			
					Suitable for material group K	○		●		○	
					Suitable for material group S	●					
					Suitable for material group H						
	ISO name	Knife edge length (mm)	Edge radius (mm)	Indexable insert type	16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	APKT 100308 PDER	11	0.8	22	100	●	-	-	-	-
	APKT 100312 PDER	11	1.2	22	101	●	-	-	-	-
	APKT 100320 PDER	11	2	22	102	●	-	-	-	-
	APKT 1003 PDER-M	11	0.5	22	-	-	105	●	-	-
	APKT 1003 PDER-M	11	0.5	22	-	-	-	-	107	●

Prod. Gr. 156

ATORN® Indexable milling insert AP.. 16..

For cutters with indexable inserts no. 16019/16055

Delivery:
Packaging unit: 10 pieces

					Surface	Uncoated		Coated		Coated		Coated	
					Carbide type	HW4415		HC4540		HC4620		HC4626	
					Material to be processed	Non-ferrous metal		Steel | Stainless steel | Cast metal | Special alloy		Steel | Stainless steel | Cast metal | Special alloy		Steel | Cast metal	
					Suitable for material group P			●		●		●	
					Suitable for material group M			●		○			
					Suitable for material group N	●							
					Suitable for material group K			○		●		●	
					Suitable for material group S			●		○			
					Suitable for material group H								
	ISO name	Knife edge length (mm)	Edge radius (mm)	Indexable insert type	16109... Ident. No.			16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	APHX 160404 FR-ALU	17	0.4	27	115	●		-	-	-	-	-	-
	APKT 160408 PDER	17.3	0.8	28	-	-		111	●	110	●	-	-
	APKT 160404 HM	17.3	0.4	28	-	-		116	●	-	-	-	-
	APKT 160416 HM	17.3	1.6	28	-	-		117	●	-	-	-	-
	APKT 160431 HM	17.3	3.1	28	-	-		118	●	-	-	-	-
	APKT 160408 PDER	17.3	0.8	28	-	-		-	-	-	-	112	●
	APHT 160408 PDR	17	0.8	27	-	-		-	-	-	-	119	●

Prod. Gr. 156

ATORN® ORION® Indexable milling insert AP.. 16..

For cutters with indexable inserts no. 16019/16055

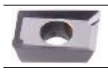
Delivery:
Packaging unit: 10 pieces

						ATORN®						ORION®	
					Surface	Coated		Coated		Coated		Coated	
					Carbide type	HC4535		HC4615		HC4635		HC4620	
					Material to be processed	Steel | Stainless steel		Steel		Steel | Cast metal		Steel | Stainless steel	
					Suitable for material group P	●		●		●		●	
					Suitable for material group M	●						○	
					Suitable for material group N								
					Suitable for material group K					○			
					Suitable for material group S								
					Suitable for material group H								
	ISO name	Knife edge length (mm)	Edge radius (mm)	Indexable insert type	16109... Ident. No.			16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	APKT 1604 PDER-S	17	0.8	27	128	●		127	●	129	●	-	-
	APKT 160408 PDER	17.88	0.8	28	-	-		-	-	-	-	140	●

ORION = Prod. Gr. 133
ATORN® = Prod. Gr. 156

ATORN® Indexable milling insert ADHX

Delivery:
Box quantity: 10 pieces

			Surface	Uncoated		Coated		Coated		Coated	
			Carbide type	HW4410		HC4410		HC4630		HC4540	
			Material to be processed	Stainless steel | Non-ferrous metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel		Steel | Stainless steel	
			Suitable for material group P			○		○		●	
			Suitable for material group M	○		○		●		○	
			Suitable for material group N	●		●					
			Suitable for material group K			●					
			Suitable for material group S								
			Suitable for material group H								
	ISO name	Knife edge length (mm)	Edge radius (mm)	16113... Ident. No.		16113... Ident. No.		16113... Ident. No.		16113... Ident. No.	
	ADHX 090304 FR-ALC	9.52	0.4	203	●	204	●	-	-	-	-
	ADHX 090304 ER	9.52	0.4	-	-	207	●	-	-	-	-
	ADHX 090304 ER-IN	9.52	0.4	-	-	-	-	208	●	-	-
	ADHX 110305 FR-ALC	11.1	0.5	213	●	214	●	-	-	-	-
	ADHX 110305 ER	11.1	0.5	-	-	-	-	-	-	216	●
	ADHX 110305 ER-IN	11.1	0.5	-	-	-	-	218	●	-	-
	ADKX 110305 ER	11.1	0.5	-	-	242	●	-	-	241	●
	ADKX 110312 SR-TR	11.1	1.2	-	-	246	●	-	-	-	-

Prod. Gr. 155

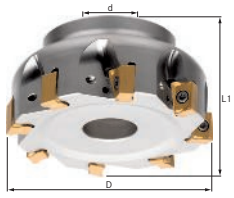
ATORN® Angular milling cutter 90°

For milling cutter indexable inserts LNMX

Application:
4 flutes per indexable milling insert and special chip shape geometry for profitability and high cutting rates when milling faces, milling corners, trimming and milling grooves.

Execution:
- Wear-resistant, nickel-plated version
- With internal cooling

Advantage:
- 4 cutting edges on one double-sided indexable insert
- Special chip shape geometry for low power consumption
- Thick inserts



							Angular milling cutter 90°		Clamping screw for indexable inserts	
D (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	16016... Ident. No.		16108... Ident. No.	
40	40	16	9	5	1	LNMX 1006..	340	●	171	●
50	40	22	9	7	1	LNMX 1006..	350	●	171	●
50	40	22	14	5	2	LNMX 1510..	450	●	172	●
63	40	22	9	9	1	LNMX 1006..	363	●	171	●
63	40	22	14	6	2	LNMX 1510..	463	●	172	●
80	50	27	14	7	2	LNMX 1510..	480	●	172	●
100	50	32	14	8	2	LNMX 1510..	500	●	172	●

Prod. Gr. 108

ATORN® Angular milling cutter 90° with Weldon shank

For milling cutter indexable inserts LNMX

Application:
Four cutting edges per milling insert and special chip breaker geometry result in profitability and high chip removal rates during facing, angular cutting, trimming, and groove cutting.

Execution:
- with weld-on shank
- wear-proof, nickel-plated design
- with inner cooling

Advantage:
- 4 cutting edges on double-sided indexable insert
- special chip breaker geometry enables low power consumption
- large insert thickness



								Angular milling cutter 90° with Weldon shank		Clamping screw for indexable inserts	
D (mm)	L2 (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	**16016...** Ident. No.		**16108...** Ident. No.	
20	30	100	20	9	3	1	LNMX 1006..	**320**	●	**171**	●
25	35	115	25	9	3	1	LNMX 1006..	**325**	●	**171**	●
32	40	125	25	9	4	1	LNMX 1006..	**332**	●	**171**	●

Prod. Gr. 108

ATORN® Indexable milling insert LNMX

For angular milling cutter no. 16016

Delivery:
Packaging unit: 10 pieces

					Surface	Uncoated		Coated		Coated		Coated	
					Carbide type	HW4310		HC4410		HC4535		HC4630	
					Material to be processed	Non-ferrous metal		Steel | Cast metal		Steel | Stainless steel		Steel	
					Suitable for material group P			○		●		●	
					Suitable for material group M					●			
					Suitable for material group N	●							
					Suitable for material group K			●					
					Suitable for material group S								
					Suitable for material group H								
	ISO name	Knife edge length (mm)	Edge radius (mm)	Indexable insert type	**16109...** Ident. No.			**16109...** Ident. No.		**16109...** Ident. No.		**16109...** Ident. No.	
	LNMX 100605 PNR-MM	10	0.5	1	**250**	●		-	-	-	-	-	-
	LNMX 100605 PNR-MM	10	0.5	1	-	-		**251**	●	**252**	●	**253**	●
	LNMX 151008 PNR-MM	15	0.8	2	**254**	●		-	-	-	-	-	-
	LNMX 151008 PNR-MM	15	0.8	2	-	-		**255**	●	**256**	●	**257**	●

Prod. Gr. 156

ATORN tangential milling systems
extreme performance meets high profitability

the tangential indexable milling systems with 4 and 8 cutting edges have been developed for roughing and semi-finishing operations in steel and cast iron. the program includes supports in the diameter range from 50 to 160 mm and indexable inserts with cutting depths down to 11.5 mm.

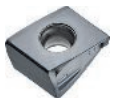
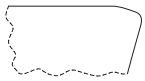
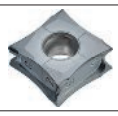
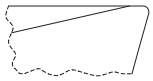
process reliability through tangential installation position
the tangential installation position of the reversible tips brings some characteristic features. the favourable supporting surface and clamping force ratio provides maximum stability. even at high cutting performance, the tools make the process extremely reliable.

profitability through good machining properties
the stable indexable inserts have a positive chip angle resulting in excellent cutting behaviour and low machine power consumption. this allows the service life of the cutting edge to be greatly increased. this has a direct and positive impact on the tool costs.

cost savings through cycle time reduction
the ratio of tool diameter to number of teeth in combination with the high realisable feed rate provides enormous material removal rates. this means much shorter cycle times are achieved, which significantly reduces process costs or cost per part.





	chip shape	description
	 SR (chamfered and rounded)	▪ 4-blade indexable insert for stable processes ▪ infeed depth to ap max 11.5 mm ▪ stable geometry for wide range of applications
	 ER (rounded)	▪ 8-blade indexable insert for a high level of profitability ▪ infeed depth to ap max 10 mm ▪ soft cutting geometry for reduced chipping forces



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

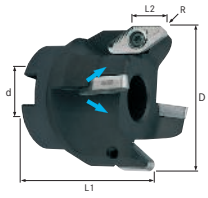
ATORN® Plunge mill for non-ferrous metals and plastics

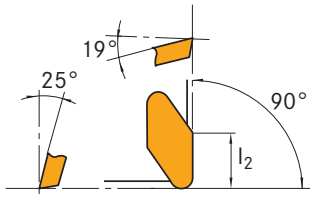
For milling cutter indexable inserts VCGT 2205..

Application:
Ideal for processes such as excavation and plunge milling in aluminium and plastics with the highest usage values. The robust and precision-ground VPGT/VCGT reversible tip is ideal for plunge milling without a pilot bore thanks to its optimised shape and cutting geometry. Excellent chip removal thanks to polished cutting faces and large chip spaces; enables high cutting rates with minimal built-up edge formation.

Execution:
- Robust support design for high-performance milling
- With internal cooling
- Clamping screw tightening torque (indexable insert) M5 = 8 Nm

Advantage:
- Low cutting forces
- Large corner radii for reduced wear
- Very high material removal rate
- Highest feed rates possible
- Also ideal for cutting plastics





D (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	**Plunge mill for non-ferrous metals and plastics** 16032... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
42	55	16	15	3	VCGT 2205..	042	●	126	●
52	55	22	15	3	VCGT 2205..	052	●	126	●
66	60	27	15	4	VCGT 2205..	066	●	126	●
80	60	27	15	4	VCGT 2205..	080	●	126	●
100	60	32	15	5	VCGT 2205..	100	●	126	●

Prod. Gr. 155

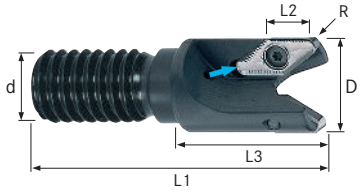
ATORN® Plunge mill for non-ferrous metals and plastics with thread

For milling cutter indexable inserts VPGT 1604.., VCGT 2205..

Application:
Ideal for processes such as excavation and plunge milling in aluminium and plastics with the highest usage values. The robust and precision-ground VPGT/VCGT reversible tip is ideal for plunge milling without a pilot bore thanks to its optimised shape and cutting geometry. Excellent chip removal thanks to polished cutting faces and large chip spaces; enables high cutting rates with minimal built-up edge formation.

Execution:
- With screw-in thread
- Robust support design for high-performance milling
- With internal cooling
- Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm, M5 = 8 Nm

Advantage:
- Low cutting forces
- Large corner radii for reduced wear
- Very high material removal rate
- Highest feed rates possible
- Also ideal for cutting plastics



D (mm)	L3 (mm)	L1 (mm)	d	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	**Plunge mill for non-ferrous metals and plastics with thread** 16032... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
25	21	40	M12	14	2	VPGT 1604..	026	●	125	●
32	29	50	M16	15	2	VCGT 2205..	033	●	126	●
42	29	50	M16	15	3	VCGT 2205..	041	●	126	●

Prod. Gr. 155

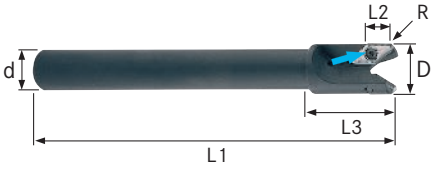
ATORN® Plunge mill for non-ferrous metals and plastics with straight shank

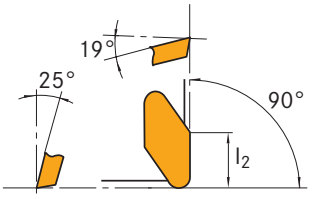
For milling cutter indexable inserts VPGT 1604.., VCGT 2205..

Application:
Ideal for processes such as excavation and plunge milling in aluminium and plastics with the highest usage values. The robust and precision-ground VPGT/VCGT reversible tip is ideal for plunge milling without a pilot bore thanks to its optimised shape and cutting geometry. Excellent chip removal thanks to polished cutting faces and large chip spaces; enables high cutting rates with minimal built-up edge formation.

Execution:
- With straight shank
- Robust support design for high-performance milling
- With internal cooling
- Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm, M5 = 8 Nm

Advantage:
- Low cutting forces
- Large corner radii for reduced wear
- Very high material removal rate
- Highest feed rates possible
- Also ideal for cutting plastics





D (mm)	L2 (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	**Plunge mill for non-ferrous metals and plastics with straight shank** 16032... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
25	40	200	20	14	2	VPGT 1604..	025	●	125	●
32	50	220	25	15	2	VCGT 2205..	032	●	126	●

Prod. Gr. 155

ATORN® Indexable milling insert VCGT, VPGT

For indexable insert cutter no. 16032

Delivery:
Box quantity: 10 pieces

	ISO name	Knife edge length (mm)	Edge radius (mm)	Surface: Uncoated		Surface: Coated	
				Carbide type: HW4410		Carbide type: HC4410	
				Material to be processed: Non-ferrous metal		Material to be processed: Non-ferrous metal	
				Suitable for material group P			
				Suitable for material group M			
				Suitable for material group N	●		●
				Suitable for material group K			
				Suitable for material group S			
				Suitable for material group H			
				16113... Ident. No.		16113... Ident. No.	
	VPGT 1604012-ALM	16.6	1.2	042	●	043	●
	VCGT 220530-ALM	22.1	3	044	●	045	●

Prod. Gr. 155

ATORN high-feed milling cutter – small cutter very large
high material removal rate, broad field of application

the new ATORN high-feed milling cutter is the perfect application for rough machining small and medium-sized components. the positive high-feed geometry of the uniform, small indexable insert drills allows for the highest material removal rate even with less powerful machining centres. two different indexable insert geometries in two different cutting grades ensure that almost all materials commonly used in tool and mould construction can be processed. the high-feed milling cutter is available as screw-on mill cutter in diameters from 16 – 42 mm with 2 – 6 cutting edges as well as arbour milling cutters with a diameter of 40 – 80 mm with up to 9 cutting edges. all cutting edges are supplied through internal coolant supply. only one size of indexable inserts is required for all tool diameters.

advantages:
- high material removal rate even with less powerful machining centres
- high feed rates feasible
- low storage costs for the indexable inserts

features:
- universal indexable insert geometry for a wide application spectrum
- positive geometry of the indexable insert for soft cut
- uniform size of the indexable inserts
- internal cooling on all cutting edges

ATORN®



High-feed milling cutter

Definition: For HSC machining, the cutting speed and feed rates are significantly increased and the cutting depth is significantly reduced.
The ATORN® high-feed milling cutter is a high-performance tool with wide-ranging applications for modern tool machines. Applications in die and mould making and general mechanical engineering.

Advantages: High material removal rate, high surface quality, high dimensional and shape accuracy. Four-cutter indexable insert with large inner circle, innovative coating for robust cutting edges and wide-ranging applications, considerable indexable insert thickness for robust machining processes.

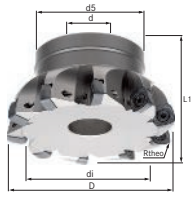


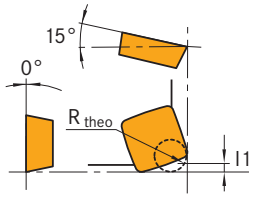
ATORN® High-feed milling cutter
For indexable milling inserts XCNT 120520..

Application:
Dramatically increase your productivity and make great cost-savings – with the high-feed milling cutters. The unique cutting geometries provide extremely smooth running and low cutting forces at maximum feed rates. Our extensive program offers solutions for a wide range of applications in modern machine tools, whether in die and mould making or in general mechanical engineering.

Execution:
- Wear-resistant, nickel-plated version
- Robust supports
- With internal cooling
- Variable pitch
- Tightening torque (indexable insert) M3.5 = 3.5 Nm

Advantage:
- Broad range of application
- Minimum-vibration milling even for long mounting lengths
- Optimum roughing tool
- Tooth feed possible up to 3 mm
- Reduces production times





D (mm)	di (mm)	L3 (mm)	d (mm)	Theoretical radius (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	High-feed milling cutter 16026... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
42	23	40	16	3.5	1.9	3	3	XCN. 1205..	260	●	107	●
42	23	40	16	3.5	1.9	4	3	XCN. 1205..	261	●	107	●
52	33.1	40	22	3.5	1.9	4	3	XCN. 1205..	262	●	107	●
52	33.1	40	22	3.5	1.9	5	3	XCN. 1205..	263	●	107	●
66	47.1	50	27	3.5	1.9	6	3	XCN. 1205..	264	●	107	●
66	47.1	50	27	3.5	1.9	7	3	XCN. 1205..	265	●	107	●
80	61.2	50	27	3.5	1.9	8	3	XCN. 1205..	266	●	107	●
100	81.2	50	32	3.5	1.9	10	3	XCN. 1205..	267	●	107	●

Prod. Gr. 155

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

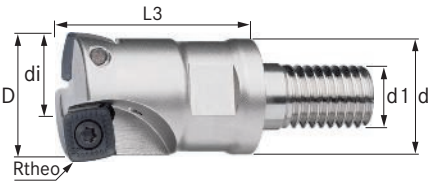
ATORN® High-feed milling cutters with thread

For indexable milling inserts: XCN 0703.., XCN. 09T3

Application:
Dramatically increase your productivity and make great cost-savings – with the high-feed milling cutters. The unique cutting geometries provide extremely smooth running and low cutting forces at maximum feed rates. Our extensive program offers solutions for a wide range of applications in modern machine tools, whether in die and mould making or in general mechanical engineering.

Execution:
- With screw-in thread
- Wear-resistant, nickel-plated version
- Robust supports
- With internal cooling
- Variable pitch
- Tightening torque (indexable insert) M3.5 = 3.5 Nm

Advantage:
- Broad range of application
- Minimum-vibration milling even for long mounting lengths
- Tooth feed possible up to 3 mm
- Reduces production times



									High-feed milling cutters with thread		Clamping screw for indexable inserts	
D (mm)	di (mm)	L3 (mm)	d1	Theoretical radius (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	16026... Ident. No.		16108... Ident. No.	
20	6.9	30	M10	1.5	1	2	1	XCN. 0703..	250	●	161	●
25	12	33	M12	1.5	1	3	1	XCN. 0703..	251	●	161	●
32	17	43	M16	2.5	1.2	4	2	XCN. 09T3..	252	●	162	●
35	20	43	M16	2.5	1.2	4	2	XCN. 09T3..	253	●	162	●
42	27	43	M16	2.5	1.2	5	2	XCN. 09T3..	254	●	162	●

Prod. Gr. 155

ATORN® Indexable milling insert XCN

for high-feed milling cutter no. 16026

Delivery:
Packaging unit: 10 pieces

						Surface	Coated	Coated
						Carbide type	HC4410	HC4640
						Material to be processed	Steel | Non-ferrous metal | Cast metal	Steel | Stainless steel | Cast metal
						Suitable for material group P	●	●
						Suitable for material group M		●
						Suitable for material group N	●	
						Suitable for material group K	●	●
						Suitable for material group S		
						Suitable for material group H		
	ISO name	Knife edge length (mm)	Radius, theoretical (mm)	Edge radius (mm)	Indexable insert type	16109... Ident. No.		16109... Ident. No.	
	XCNT 070308 SN-TR	7.94	1.5	0.8	1	210	●	211	●
	XCNT 09T312 SN-TR	9.52	2.5	1.2	2	212	●	213	●
	XCNT 120520 SN-TR	12.7	3.5	2	3	214	●	215	●
	XCNW 070308 SN	7.94	1.5	0.8	1	216	●	217	●
	XCNW 09T312 SN	9.52	2.5	1.2	2	218	●	219	●
	XCNW 120520 SN	12.7	3.5	2	3	220	●	221	●

Prod. Gr. 155

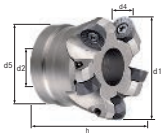
ATORN® Facing and copy milling heads

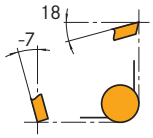
For milling cutter indexable inserts RCKX, OCKX, XCKX, XOKX, SAHT

Application:
With a total of 5 different insert types in different cemented carbide grades, there is a wide range of application possibilities. Minimum-vibration milling is guaranteed with low chipping forces and good chip removal for round, square or octagonal inserts. The low cutting force reduces the drive power required by up to 25%, which facilitates use on less efficient machines without issue.

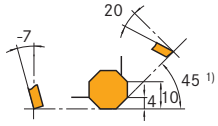
Execution:
- Wear-resistant, nickel-plated version
- With internal cooling
- Clamping screw tightening torque (indexable insert) M5 = 8 Nm

Advantage:
- Versatile with its 5 different insert types
- Low chipping forces
- Minimum-vibration milling
- Low power consumption
- High axial infeed

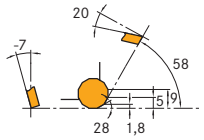




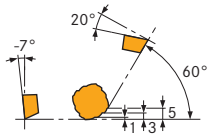
Ident. No. 152
RCKX1606



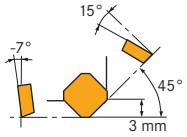
Ident. No. 166
OCKX0606



Ident. No. 180
XCKX1606



Ident. No. 200
XOKX 1606



Ident. No. 225
SAHT 1306

					Facing and copy milling heads		Clamping screw for indexable inserts	
D (mm)	L1 (mm)	d (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	16027... Ident. No.			
52	40	22	4	RCKX 1606.. | OCKX 0606.. | XCKX 1606.. | XOKX 1606.. | SAHT 1306	152	●	115	●
66	50	27	5	RCKX 1606.. | OCKX 0606.. | XCKX 1606.. | XOKX 1606.. | SAHT 1306	166	●	115	●
80	50	27	6	RCKX 1606.. | OCKX 0606.. | XCKX 1606.. | XOKX 1606.. | SAHT 1306	180	●	115	●
100	50	32	7	RCKX 1606.. | OCKX 0606.. | XCKX 1606.. | XOKX 1606.. | SAHT 1306	200	●	115	●
125	63	40	8	RCKX 1606.. | OCKX 0606.. | XCKX 1606.. | XOKX 1606.. | SAHT 1306	225	●	115	●

Prod. Gr. 155

ATORN® Indexable milling insert RCKX, OCKX, XCKX, XOKX, SAHT

For facing and copy milling cutter no. 16027

Delivery:
Box quantity: 10 pieces

				Surface	Coated		Coated		Coated	
				Carbide type	HC4410		HC4640		HC4410	
				Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel		Steel | Stainless steel | Cast metal	
				Suitable for material group P	○		●		●	
				Suitable for material group M	○		○		●	
				Suitable for material group N	●					
				Suitable for material group K	●				●	
				Suitable for material group S						
				Suitable for material group H						
	ISO name	Knife edge length (mm)	Edge radius (mm)	16113... Ident. No.			16113... Ident. No.		16113... Ident. No.	
	RCKX 1606 MO-TR	-	-	004	●		006	●	-	-
	RCKX 1606 MO-TRT	-	-	008	●		-	-	-	-
	RCKX 1606 MO-TT	-	-	-	-		-	-	010	●
	OCKX 0606 AD-TR	16	0.5	024	●		025	●	-	-
	OCKX 0606 AD-TRT	16	0.5	026	●		-	-	-	-
	XCKK 1606 ZDR-TR	-	-	-	-		032	●	-	-
	XOKX 1606 ZD-TR	32	0.5	037	●		-	-	035	●

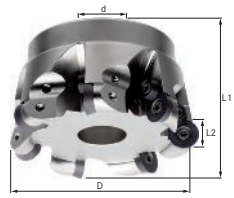
Prod. Gr. 155

ATORN® Copy and face milling cutter heads

For indexable milling inserts: RD..1003.., RD..12T3.., RD..1604..

Application:
For face milling and copy milling, light and medium chipping

Execution:
- Wear-resistant, nickel-plated version
- With internal cooling
- Clamping screw tightening torque (indexable insert) M3.5 = 3.5 Nm, M4.5 = 7.6 Nm



							Copy and face milling cutter heads		Clamping screw for indexable inserts		Clamping claw	
D (mm)	L1 (mm)	d (mm)	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	16035... Ident. No.		16108... Ident. No.		16108... Ident. No.	
42	44	16	2.5	6	32	RD.. 1003..	340	●	145	●	-	-
52	50	22	3	4	34	RD.. 1604..	350	●	146	●	148	●
52	50	22	3	5	33	RD.. 12T3..	351	●	145	●	147	●
66	50	27	4	5	34	RD.. 1604..	366	●	146	●	148	●
66	50	27	4	6	33	RD.. 12T3..	367	●	145	●	147	●
80	50	27	4	6	34	RD.. 1604..	380	●	146	●	148	●
100	55	32	4	7	34	RD.. 1604..	400	●	146	●	148	●

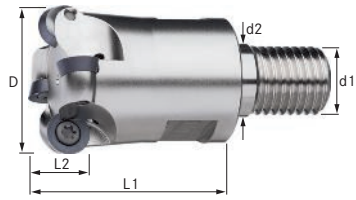
Prod. Gr. 108

ATORN® Copy and face milling cutter heads with thread

For milling cutter indexable inserts RD..0501.., RD..0702.., RD..12T3..

Application:
For face milling and copy milling, light and medium chipping

Execution:
- Wear-resistant, nickel-plated version
- With internal cooling
- Clamping screw tightening torque (indexable insert) M1.8 = 0.7 Nm, M2.5 = 1.2 Nm, M3.5 = 3.5 Nm



							Copy and face milling cutter heads with thread		Clamping screw for indexable inserts		Clamping claw	
D (mm)	L1 (mm)	d1	max. ap (mm)	Number of cutting edges (PCS)	Indexable insert type	Suitable for indexable inserts	16035... Ident. No.		16108... Ident. No.		16108... Ident. No.	
10	18	M6	1.5	2	30	RD.. 0501..	210	●	149	●	-	-
15	23	M8	2	2	31	RD.. 0702..	215	●	157	●	-	-
15	23	M8	2	3	31	RD.. 0702..	216	●	157	●	-	-
20	30	M10	2.5	2	32	RD.. 1003..	220	●	145	●	-	-
20	30	M10	2	4	31	RD.. 0702..	221	●	157	●	-	-
25	35	M12	2	5	31	RD.. 0702..	225	●	157	●	-	-
25	35	M12	2.5	3	32	RD.. 1003..	226	●	145	●	-	-
30	43	M16	2.5	4	32	RD.. 1003..	230	●	145	●	-	-
35	43	M16	3	3	33	RD.. 12T3..	235	●	145	●	147	●
35	43	M16	2.5	4	32	RD.. 1003..	236	●	145	●	-	-

Prod. Gr. 108

ATORN® Indexable milling insert RD..

For copying and face milling cutter no. 16035

Delivery:
Box quantity: 10 pieces

	Surface		Coated		Coated		Coated		Coated	
	Carbide type		HC4430		HC4410		HC4640		HC4640	
	Material to be processed		Cast metal | Hardened material		Steel | Non-ferrous metal | Cast metal | Special alloy		Steel | Stainless steel		Steel | Stainless steel	
	Suitable for material group P				●		●		●	
	Suitable for material group M						●		○	
	Suitable for material group N				○					
	Suitable for material group K		○		●					
	Suitable for material group S				○					
	Suitable for material group H		●							
	ISO name	Indexable insert type	**16109...** Ident. No.		**16109...** Ident. No.		**16109...** Ident. No.		**16109...** Ident. No.	
	RDHW 0501 MOS	30	**053**	●	**-**	-	**-**	-	**-**	-
	RDHW 0702 MOS	31	**059**	●	**057**	●	**058**	●	**-**	-
	RDHW 1003 MOS	32	**063**	●	**061**	●	**062**	●	**-**	-
	RDHW 12T3 MOS	33	**073**	●	**071**	●	**072**	●	**-**	-
	RDHW 1604 MO	34	**083**	●	**081**	●	**-**	-	**-**	-
	RDKT 1003 MOTT	32	**-**	-	**-**	-	**-**	-	**092**	●
	RDKT 12T3 MOTT	33	**-**	-	**-**	-	**-**	-	**094**	●
	RDKT 1604 MOTT	34	**-**	-	**-**	-	**-**	-	**096**	●

Prod. Gr. 156

ATORN® Disc milling cutter, A-CUT

For AIMC, AIMJ or AIPV cutting inserts

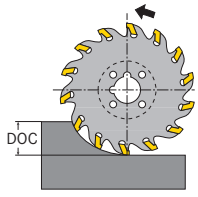
Application:
For slotting, cutting and notching. Use AIPV cutting inserts for precise grooves.

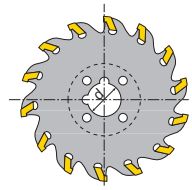
Execution:
- For clamped reversible tips
- for suitable inserts, please refer to the piercing tools area.
- **Ident. No. 001–003:** Type 1
- **Ident. No. 010–015:** Type 2

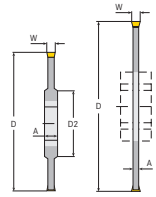
Delivery:
Delivery: includes ejector; cutting inserts not included

Notes:
A drive set must be used for type 2. Maximum rotation speed must not be exceeded.









											Disc milling cutter, A-CUT			
										Adapter type	Type 1		Type 2	
ASC code	D (mm)	W (mm)	D2 (mm)	d (mm)	A (mm)	Number of cutting edges (PCS)	Max. cutting depth (mm)	Max. rotation speed (U/min(rpm))	Driving tenon set type	Indexable insert type	16101... Ident. No.		16101... Ident. No.	
100 1.6-22A	100	1.6	39	22	2.4	10	30.5	800	-	AIMC.. | AIMJ.. | AIPV..	001	○	-	-
125 1.6-27A	125	1.6	64	27	2.4	12	30.5	640	-	AIMC.. | AIMJ.. | AIPV..	002	○	-	-
100 2-22A	100	2.2	39	22	2.4	10	30.5	800	-	AIMC.. | AIMJ.. | AIPV..	003	○	-	-
100 3-22K	100	3.1	-	22	2.4	6	27	800	AR22-46	AIMC.. | AIMJ.. | AIPV..	-	-	010	●
125 3-32K	125	3.1	-	32	2.4	8	35	640	AR32-55	AIMC.. | AIMJ.. | AIPV..	-	-	011	●
160 3-40K	160	3.1	-	40	2.4	10	40	500	AR40-80	AIMC.. | AIMJ.. | AIPV..	-	-	012	○
100 4-22K	100	4.1	-	22	3.2	6	27	800	AR22-46	AIMC.. | AIMJ.. | AIPV..	-	-	013	○
125 4-32K	125	4.1	-	32	3.2	8	22.5	640	AR32-55	AIMC.. | AIMJ.. | AIPV..	-	-	014	○
160 4-40K	160	4.1	-	40	3.2	10	40	500	AR40-80	AIMC.. | AIMJ.. | AIPV..	-	-	015	○

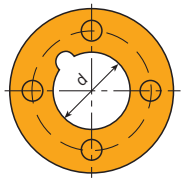
Prod. Gr. 155

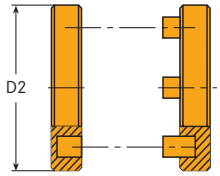


ATORN® Driver sets

For disc milling cutter, type 2

Application:
For use with disc milling cutter type 2.





Driving tenon set type	D2 (mm)	d (mm)	b (mm)	Driver sets 16101... Ident. No.	
AR22-46	46	22	10	100	○
AR32-55	55	32	10	101	○
AR40-80	80	40	10	102	○

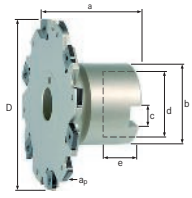
Prod. Gr. 155

ATORN® Disc milling cutter with collar

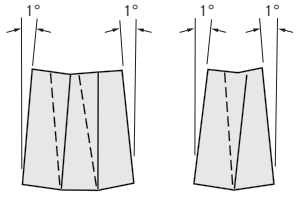
For reversible tips SNHX...

Application:
For slotting, cutting and notching in all materials.

Execution:
- For bolted reversible tips
- Cuts on three sides
- Generates a slight roof shape in the groove base
- Without collar
- Clamping screw tightening torque (indexable insert) M3.5 = 3.5 Nm, M4 = 5.2 Nm



ap = cut width



Axial angle -3° radial angle -12°

D (mm)	ap (mm)	Cutting depth ae (mm)	b (mm)	d (mm)	a (mm)	Number of cutting edges (PCS)	Number of indexable inserts (PCS)	Suitable for indexable inserts	Disc milling cutter with collar 16102... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
63	4	10.5	40	22	50	4	8	SNHX 1102T	101	○	020	●
63	5	10.5	40	22	50	4	8	SNHX 1103T	102	○	021	●
63	6	10.5	40	22	50	3	6	SNHX 1203T	103	○	022	●
80	4	20.2	40	22	50	5	10	SNHX 1102T	104	○	020	●
80	5	20.2	40	22	50	5	10	SNHX 1103T	105	○	021	●
80	6	20.2	40	22	50	4	8	SNHX 1203T	106	○	022	●
100	4	24.2	48	27	50	6	12	SNHX 1102T	107	○	020	●
100	5	24.2	48	27	50	6	12	SNHX 1103T	108	○	021	●
100	6	24.2	48	27	50	5	10	SNHX 1203T	109	○	022	●
100	10	24.2	48	27	50	5	10	SNHX 1205T	110	○	023	●
125	6	23.7	70	40	50	6	12	SNHX 1203T	111	○	022	●
125	10	23.7	70	40	50	6	12	SNHX 1205T	112	○	023	●
160	6	41.2	70	40	50	8	16	SNHX 1203T	113	○	022	●
160	10	41.2	70	40	50	8	16	SNHX 1205T	114	○	023	●

Prod. Gr. 155

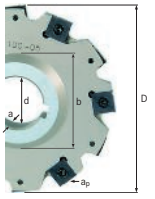
ATORN® Disc milling cutters
for reversible tips SNHX...

Application:
For slotting, cutting and notching in all materials.

Execution:
- For bolted reversible tips

- Cuts on three sides
- Generates a slight roof shape in the groove base
- Without collar
- Clamping screw tightening torque (indexable insert) M3.5 = 3.5 Nm, M4 = 5.2 Nm





ap = cut width

								Disc milling cutters		Clamping screw for indexable inserts	
D (mm)	W (mm)	D2 (mm)	d (mm)	A (mm)	Number of cutting edges (PCS)	Max. cutting depth (mm)	Indexable insert type	16102... Ident. No.		16108... Ident. No.	
63	4	34	22	8	4	14	SNHX 1102T	125	○	020	●
63	5	34	22	8	4	14	SNHX 1103T	126	○	021	●
63	6	34	22	8	3	14	SNHX 1203T	127	○	022	●
80	4	34	22	8	5	22	SNHX 1102T	128	○	020	●
80	5	34	22	8	5	22	SNHX 1103T	129	○	021	●
80	6	34	22	8	4	22	SNHX 1203T	130	○	022	●
100	4	45	25	12	6	27	SNHX 1102T	131	○	020	●
100	5	45	25	12	6	27	SNHX 1103T	132	○	021	●
100	6	45	25	12	5	27	SNHX 1203T	133	○	022	●
100	10	58	25	12	5	27	SNHX 1205T	137	○	023	●
125	4	58	40	12	6	31	SNHX 1102T	138	○	020	●
125	5	58	40	12	6	31	SNHX 1103T	139	○	021	●
125	6	58	40	12	6	31	SNHX 1203T	140	○	022	●
125	10	58	40	12	6	31	SNHX 1205T	144	○	023	●
160	4	68	40	12	9	44	SNHX 1102T	146	○	020	●
160	5	68	40	12	9	44	SNHX 1103T	147	○	021	●
160	6	68	40	12	8	44	SNHX 1203T	148	○	022	●
160	10	68	40	12	8	44	SNHX 1205T	152	○	023	●
160	14	68	40	14	5	44	SNHX 1205T	154	○	023	●
200	4	72	50	12	9	62	SNHX 1102T	155	○	020	●
200	5	72	50	12	9	62	SNHX 1103T	156	○	021	●
200	6	72	50	12	9	62	SNHX 1203T	157	○	022	●
200	10	72	50	12	9	62	SNHX 1205T	159	○	023	●
200	14	72	50	14	6	62	SNHX 1205T	161	○	023	●
250	10	72	50	12	12	87	SNHX 1205T	163	○	023	●

Prod. Gr. 155

ATORN® Indexable milling insert SNHX 11/12
For indexable disc milling cutter no. 16102

Delivery:
Packaging unit: 10 pieces

		Surface	Uncoated		Coated	
		Carbide type	HW4415		HC4630	
		Material to be processed	Non-ferrous metal		Steel | Stainless steel | Cast metal	
		Suitable for material group P			●	
		Suitable for material group M			●	
		Suitable for material group N	●			
		Suitable for material group K			●	
		Suitable for material group S				
		Suitable for material group H				
	ISO name	Knife edge length (mm)	16109... Ident. No.		16109... Ident. No.	
	SNHX 1102T	11	201	●	200	●
	SNHX 1103T	11	203	●	202	●
	SNHX 1203T	13	205	●	204	●
	SNHX 1205T	13	207	●	206	●

Prod. Gr. 156

ATORN® Chamfer and centring cutters

For milling cutter indexable inserts TCMX 16T3..

Application:
centring and NC spot drilling, chamfering, V-groove milling, lathe facing

Execution:
- with straight shank and clamping surface in accordance with DIN 1835 B
- Shaft tolerance h6
- With internal cooling
- Clamping screw tightening torque (indexable insert) M4 = 5.2 Nm



								Chamfer and centring cutters		Clamping screw for indexable inserts	
D min. (mm)	D max. (mm)	Chamfer angle (Degree)	L1 (mm)	L3 (mm)	d (mm)	Number of cutting edges (PCS)	Suitable for indexable inserts	16107... Ident. No.		16108... Ident. No.	
20	0.2	45	40	115	20	1	TCMX 16T3..	470	●	129	●
20	0.2	45	60	150	20	1	TCMX 16T3..	475	●	129	●
20	0.2	45	80	200	20	1	TCMX 16T3..	480	●	129	●

Prod. Gr. 108

ATORN® Chamfer and centring indexable insert TCMT

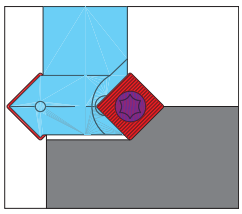
For chamfer and centring cutters no. 16107

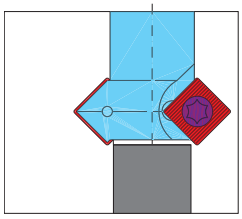
Delivery:
Box quantity: 10 pieces

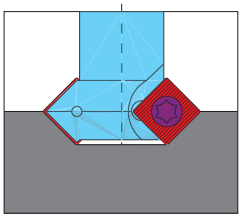
				Surface	TiN
				Carbide type	HC4625
				Material to be processed	Steel | Stainless steel | Cast metal
				Suitable for material group P	●
				Suitable for material group M	○
				Suitable for material group N	
				Suitable for material group K	○
				Suitable for material group S	
				Suitable for material group H	
	ISO name	Knife edge length (mm)	Edge radius (mm)	16109... Ident. No.	
	TCMX 16T32R..	16	0.2	675	●

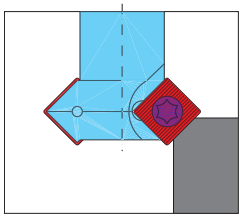
Prod. Gr. 156

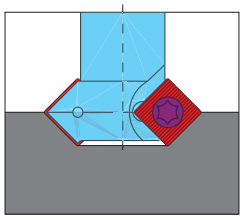
Application examples: chamfer cutter

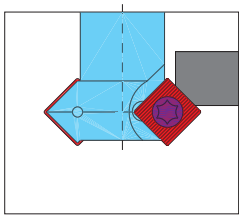

Face milling

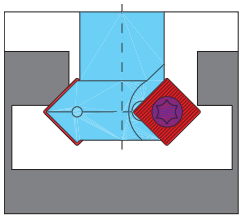

Face milling of narrow webs

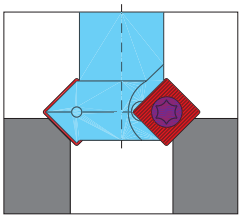

Profile milling of slots

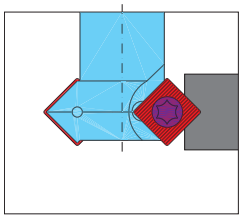

Transverse chamfering


Chamfering bores, circular


Reverse chamfering


T-slot chamfering


90° countersinking of holes, axial

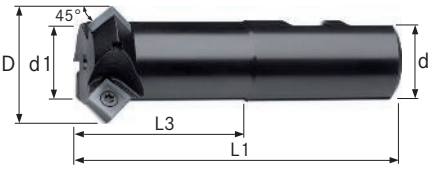

90° Vee block chamfering

ATORN® Double 45° chamfer cutter

For indexable milling inserts SDMW 0903.., SDMT 0903.., SPMW 1204.., SPMT 1204..

Application:
Universal use for chamfering and deburring.

Execution:
- with straight shank in accordance with DIN 1835 B
- clamping screw tightening torque (indexable insert) M3.5 = 3.5 Nm, M4.5 = 4.5 Nm



Chamfer angle (Degree)	D (mm)	d1 (mm)	L3 (mm)	L1 (mm)	d (mm)	Number of cutting edges (PCS)	Suitable indexable insert no.	Suitable for indexable inserts	**Double 45° chamfer cutter** 16107... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
45	28.8	16	37	85	16	2	4	SD.. 0903..	216	●	106	●
45	37.3	20	45	95	20	2	5 | 6	SP.. 1204..	220	●	108	●
45	42.3	25	54	110	25	2	5 | 6	SP.. 1204..	225	●	108	●
45	49.3	32	65	125	32	3	5 | 6	SP.. 1204..	232	●	108	●

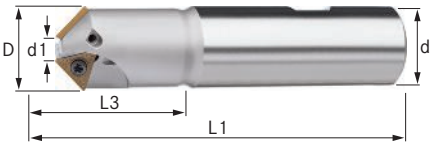
Prod. Gr. 108

ATORN® 30°, 45°, 60° chamfer cutter

For indexable milling inserts TCMT 1102.., TCMT 16T3..

Application:
Universal use for chamfering and deburring.

Execution:
- with straight shank in accordance with DIN 1835 B
- Shaft tolerance h6
- Clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm, M4 = 5.2 Nm



Chamfer angle (Degree)	D (mm)	d1 (mm)	L3 (mm)	L1 (mm)	d (mm)	Number of cutting edges (PCS)	Suitable indexable insert no.	Suitable for indexable inserts	**30°, 45°, 60° chamfer cutter** 16107... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.	
45	16	1.2	20	70	12	1	1	TC.. 1102..	316	●	110	●
45	21	6.2	35	90	20	2	1	TC.. 1102..	321	●	110	●
45	32.5	10.4	42	100	25	2	2	TC.. 16T3..	332	●	129	●
60	16	5.4	20	70	12	1	1	TC.. 1102..	416	●	110	●
60	26	15.8	35	90	20	1	1	TC.. 1102..	425	●	110	●
60	35	20	39	100	25	2	2	TC.. 16T3..	435	●	129	●
30	32	6	38	100	25	2	2	TC.. 16T3..	532	●	129	●

Prod. Gr. 108

ATORN® Adjustable chamfer cutter

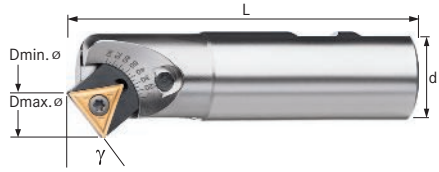
For indexable milling inserts TCMT, SPMW, SPMT

Application:
Universal chamfer cutter for deburring, chamfering and countersinking in rigid operating conditions. Cannot be used on drills.

Execution:
- adjustable from 10° to 80°
- with straight shank in accordance with DIN 1835 B
- nickel-plated support

- +/- 2.5° scale tolerance
- for precise adjustments, please use an adjustment device
- clamping screw tightening torque (indexable insert) M2.5 = 1.2 Nm, M4 = 5.2 Nm, M4.5 = 7.6 Nm
- **Ident. No. 166:** with replacement box for using TCMT 16.. and SPM.1204 indexable inserts

Notes:
accessory tool: max. cutting depth 1 mm



D (mm)	Min./ max. chamfer angle	Min./ max. Ø at 10 degrees	Min./ max. Ø at 45 degrees	Min./ max. Ø at 80 degrees	L (mm)	d (mm)	Number of cutting edges (PCS)	Insert type	Suitable for indexable inserts	**Adjustable chamfer cutter** 16107... Ident. No.		Clamping screw for spare box 16108... Ident. No.		Clamping screw for indexable inserts 16108... Ident. No.		Spare box for chamfer cutter 16108... Ident. No.	
20	10-80 Degree	5-26 mm	14-27 mm	20-24 mm	100	20	1	1	TC.. 1102..	162	●	151	●	154	●	512	●
25	10-80 Degree	5-32 mm	11-33 mm	23-27 mm	100	25	1	1	TC.. 1102..	164	●	152	●	129	●	513	●
25	10-80 Degree	5-32 mm	11-33.5 mm	23-31 mm	100	25	1	2 | 5 | 6	TC.. 1102.. | TC.. 16T3.. | SP.. 1204..	166	●	153	●	156	●	515	●

Prod. Gr. 108

ATORN® Indexable milling insert TCMT, SDMT, SPMW, SPMT

For cutters with indexable inserts no. 16107

Delivery:
Packaging unit: 10 pieces

					Surface	Uncoated		Uncoated		Coated		Coated	
					Carbide type	HW4620		HW4410		HC4625		HC4410	
					Material to be processed	Steel		Stainless steel | Non-ferrous metal		Steel | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal	
					Suitable for material group P	●				●		○	
					Suitable for material group M			○				○	
					Suitable for material group N			●				●	
					Suitable for material group K					●			
					Suitable for material group S							●	
					Suitable for material group H								
	ISO name	Knife edge length (mm)	Edge radius (mm)	Indexable insert type	16109... Ident. No.			16109... Ident. No.		16109... Ident. No.		16109... Ident. No.	
	TCMT 110202	11	0.2	1	601	●		600	●	-	-	-	-
	TCMT 16T304	16	0.4	2	611	●		610	●	613	●	-	-
	SPMW 120408	12	0.8	5	651	●		-	-	-	-	653	●
	SPMT 120408	12.7	0.8	6	661	●		660	●	-	-	663	●

Prod. Gr. 156

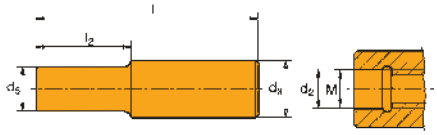
ATORN® Solid carbide drive arbours

With screw-in thread

Application:
for mounting screw-on die-sinking cutters

Execution:
- solid carbide
- With straight shank HA (tolerance h6)
- Morse taper shanks on request





Thread dimension	l2 (mm)	d5 (mm)	l (mm)	d3 (mm)	16150... Ident. No.	
M6	38	9.7	110	10	100	○
M6	53	9.7	140	10	101	○
M6	37	9.7	122	12	102	○
M6	52	9.7	142	12	103	○
M8	42	13	142	16	104	○
M8	57	13	177	16	105	○
M10	45	18	144	20	106	○
M10	78	18	194	20	107	○
M12	60	21	160	25	108	○
M12	90	21	210	25	109	○
M16	59	28	182	32	110	○
M16	99	28	232	32	111	○

Prod. Gr. 155

Determination of the correct design for lathing



The following structural designs are distinguished for lathing:

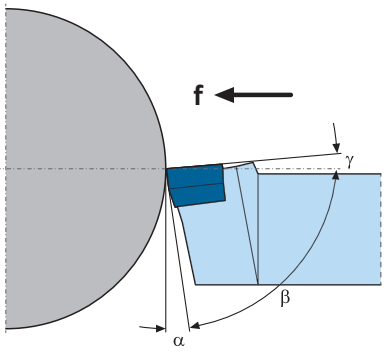
negative structural design

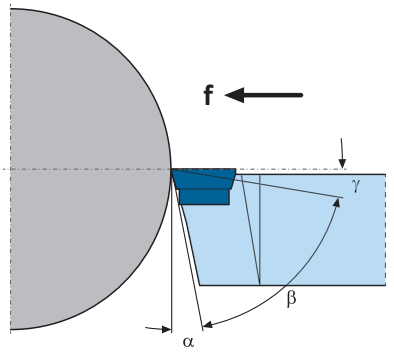
the negative structural design has been developed for rough pre-machining and is characterised by excellent force absorption. with this structural design, high infeeds are possible and heavy duty machining steps, such as interrupted cuts or overtightening of scale films, can be implemented.

prerequisites for this design are stable workpiece clamping and a stable machine.

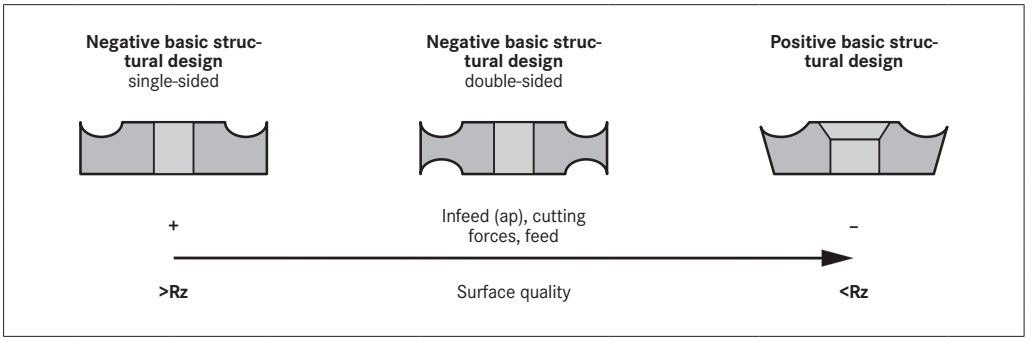
Positive structural design

The positive structural design has been developed for the final finishing of components with high surface quality. Positive engagement with the workpiece minimises cutting forces. This structural shape offers particular advantages in the case of unstable tool clamping or machining conditions, such as in the event of a high projection length in internal machining.



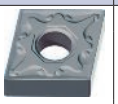


The following graph again illustrates the correlation:



Selection of indexable insert design

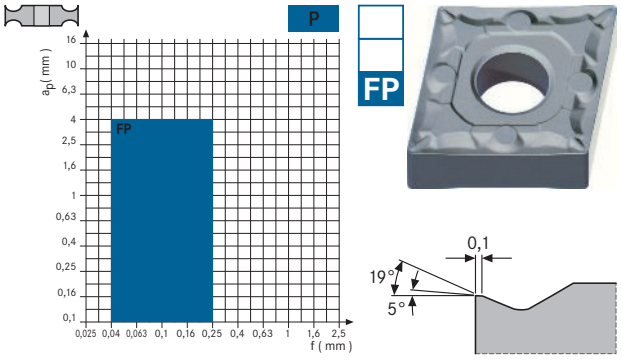
After correctly selecting the appropriate structural design, determining the insert form is an important component during machining. The following table illustrates the issue:

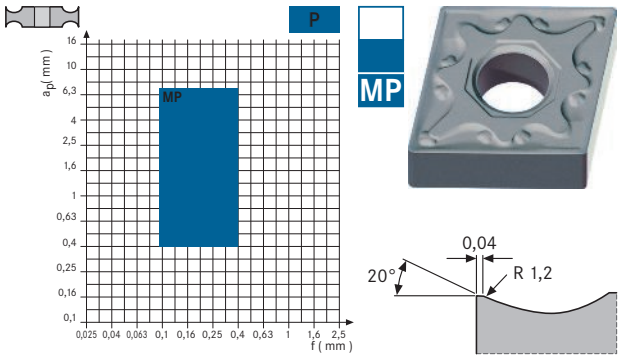
Machining type	R	S	C	W	T	D	V
		 90°	 80°	 80°	 60°	 55°	 35°
Rough machining with favourable cutting conditions	⊕⊕	⊕⊕	⊕⊕	⊕			
Rough machining with unfavourable cutting conditions	⊕⊕	⊕⊕	⊕	⊕			
Medium machining with favourable cutting conditions		⊕	⊕⊕	⊕	⊕⊕	⊕⊕	
Medium machining with unfavourable cutting conditions		⊕⊕	⊕⊕	⊕⊕	⊕	⊕	
Smoothing			⊕⊕	⊕⊕	⊕⊕	⊕⊕	⊕⊕
Longitudinal turning and facing			⊕⊕	⊕⊕			
Profile turning				⊕⊕	⊕⊕	⊕⊕	⊕⊕
Low vibrations					⊕⊕	⊕⊕	⊕⊕
Machining of hard materials	⊕⊕	⊕⊕					

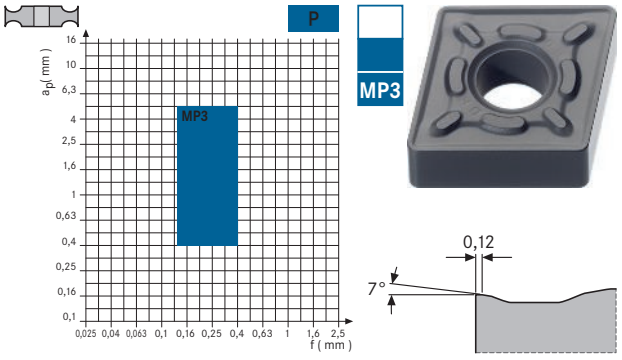
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

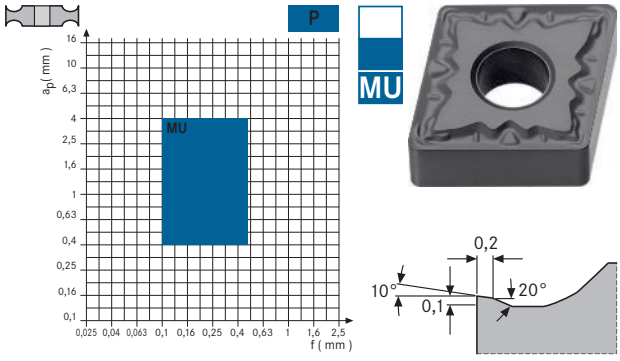
selection of chip breaker – negative chip breaker
steel materials

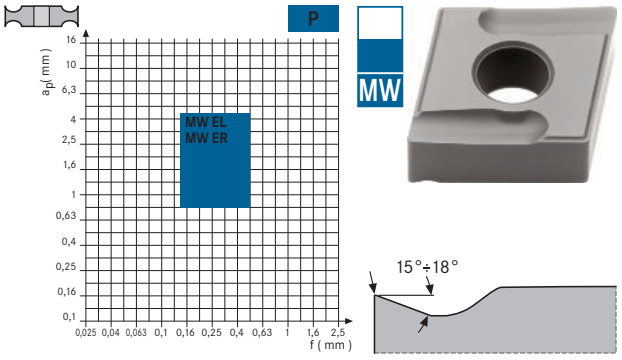
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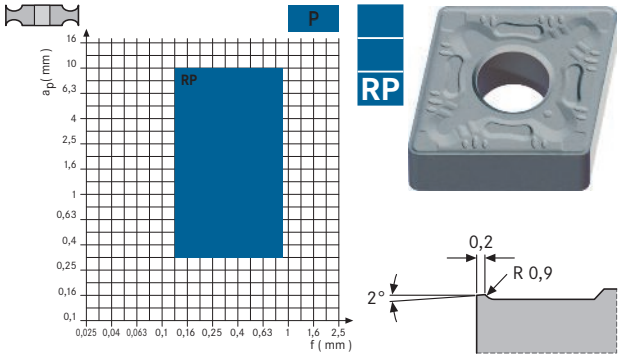


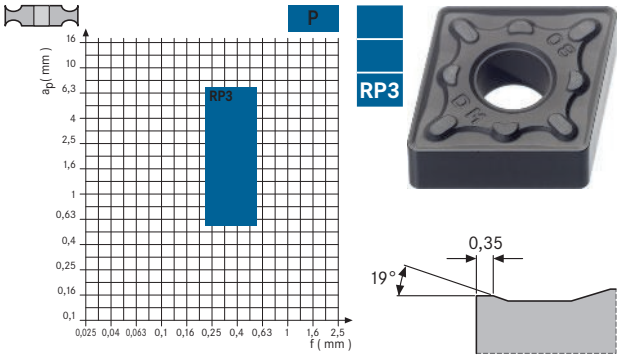


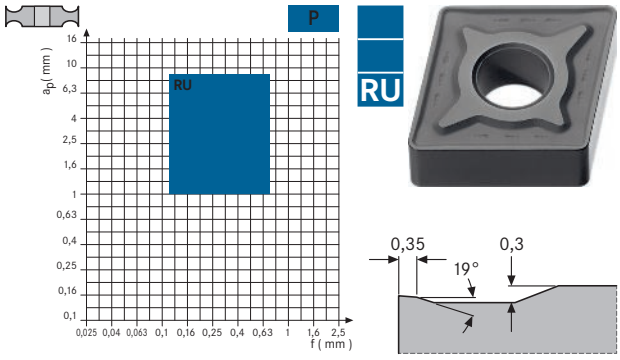


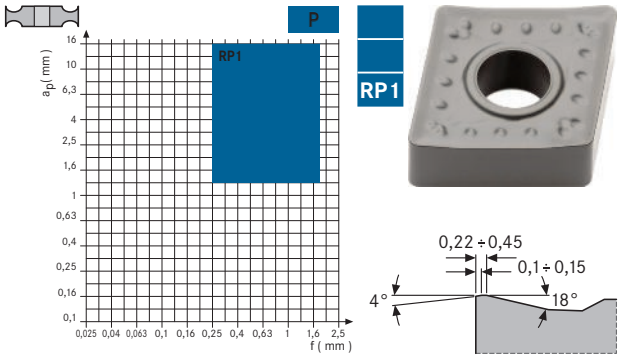






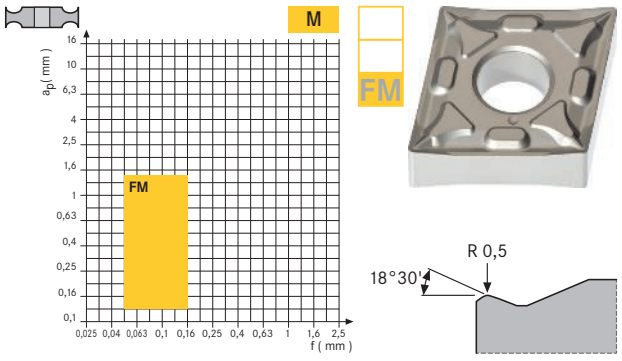


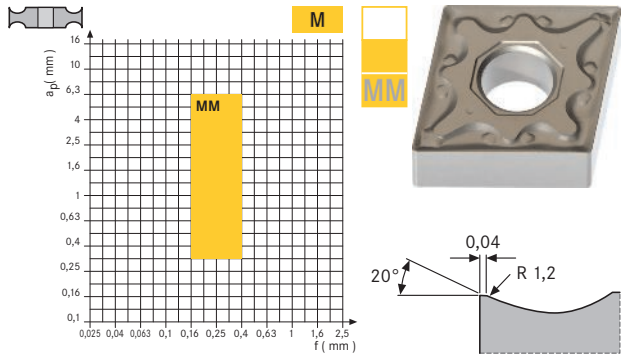


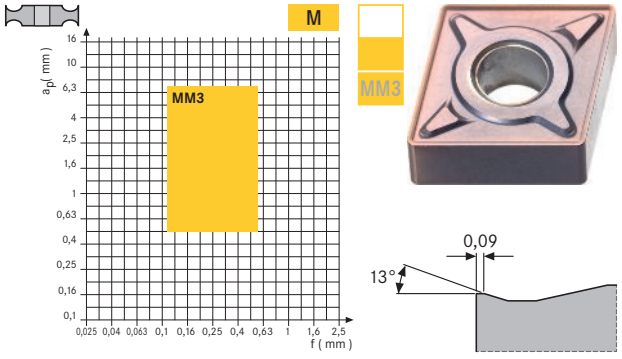


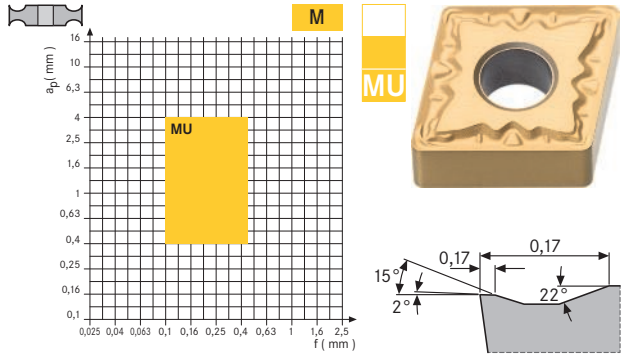
selection of chip breaker – negative chip breaker
stainless steels

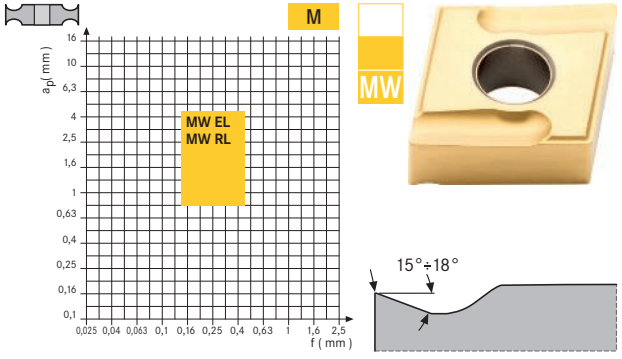
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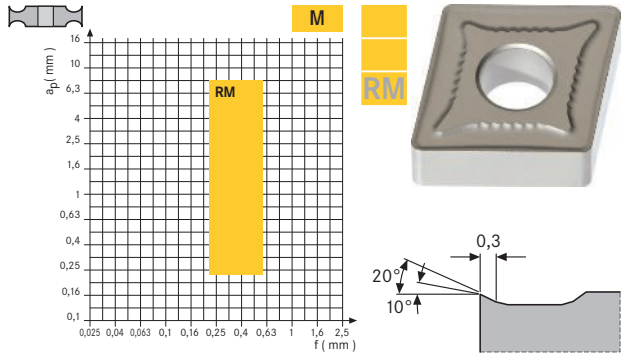


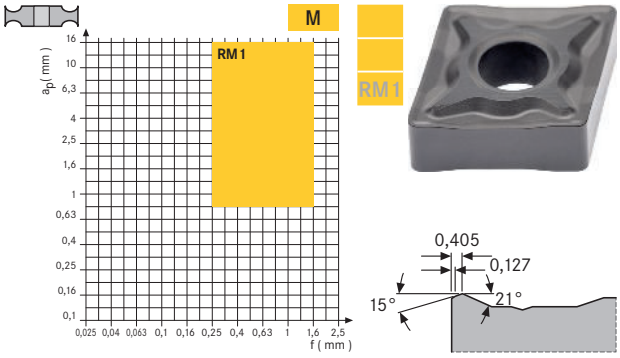


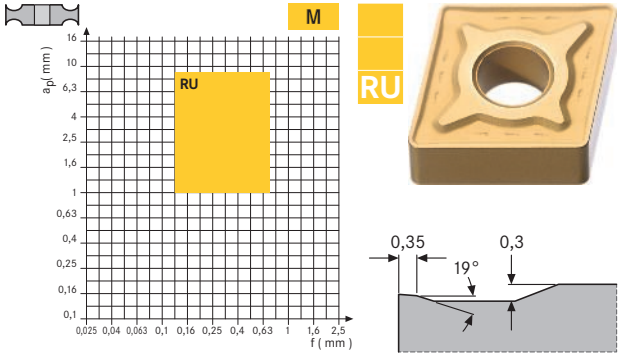






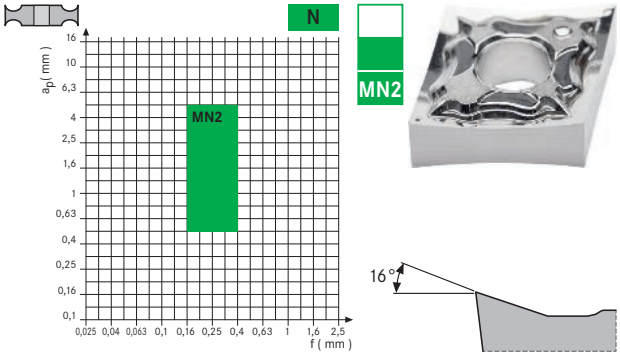






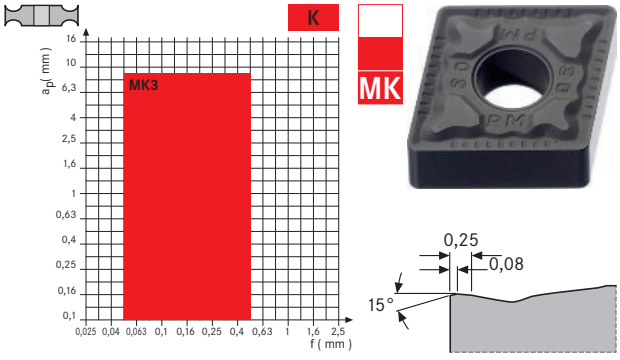
selection of chip breaker – negative chip breaker
non-ferrous metals

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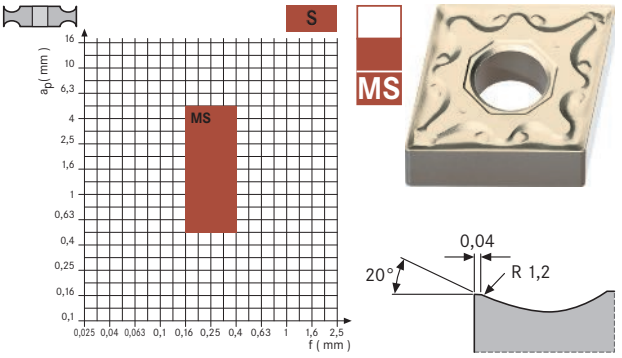
selection of chip breaker – negative chip breaker
cast materials

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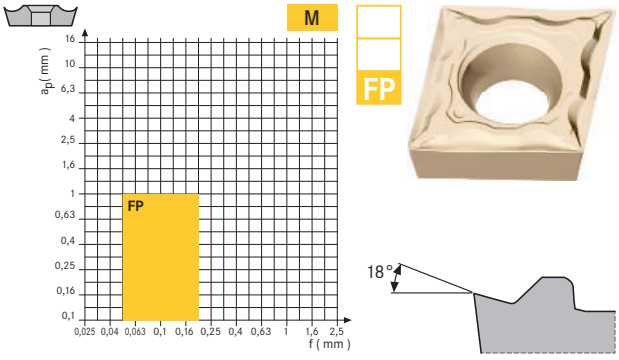
selection of chip breaker – negative chip breaker
special alloys

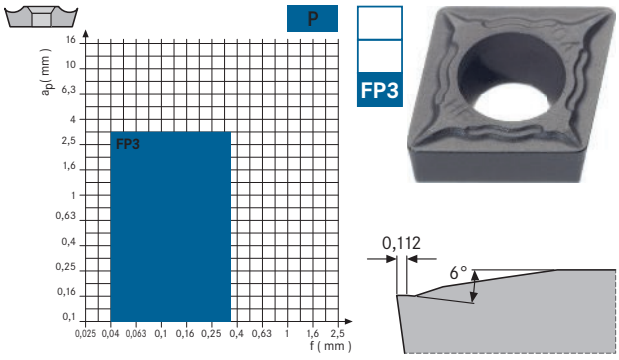
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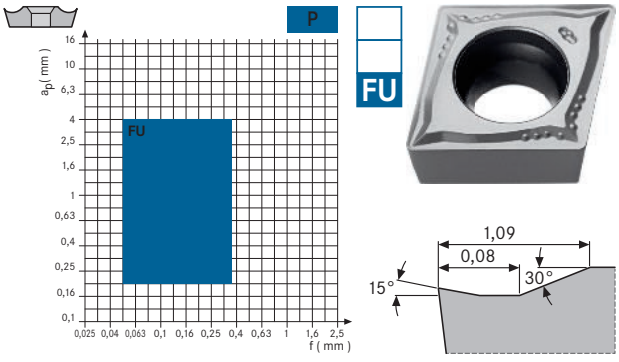


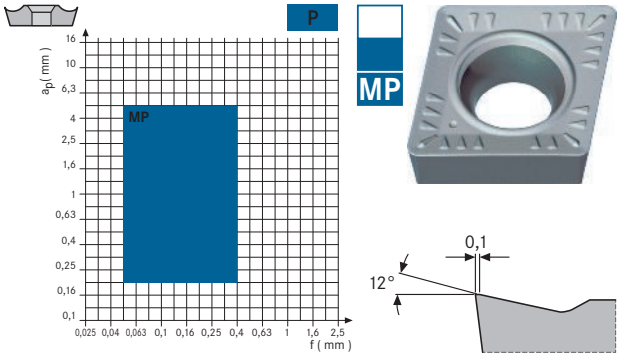
selection of chip breaker – positive chip breaker
steel materials

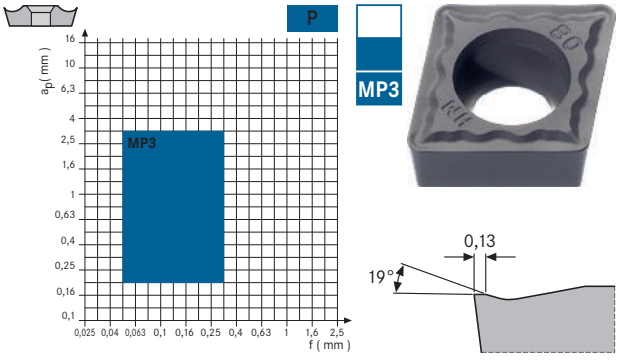
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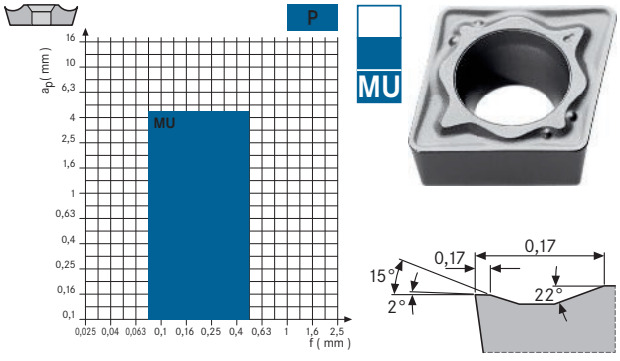


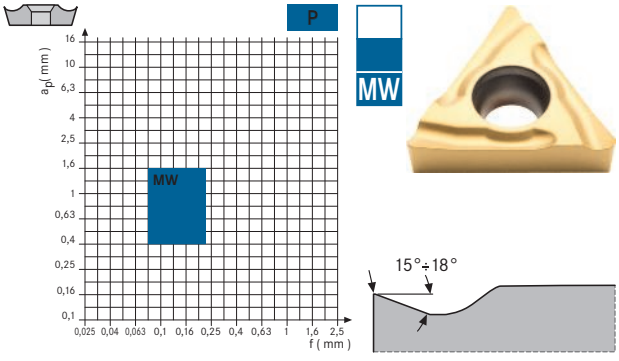






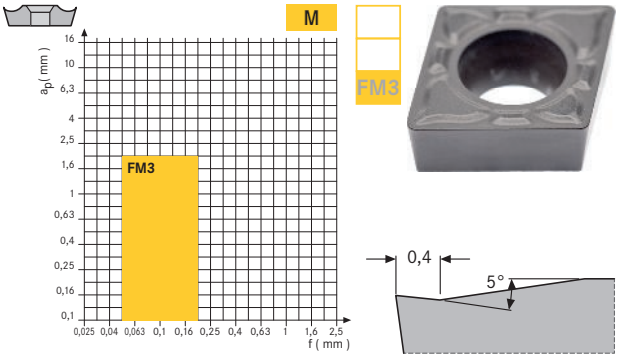


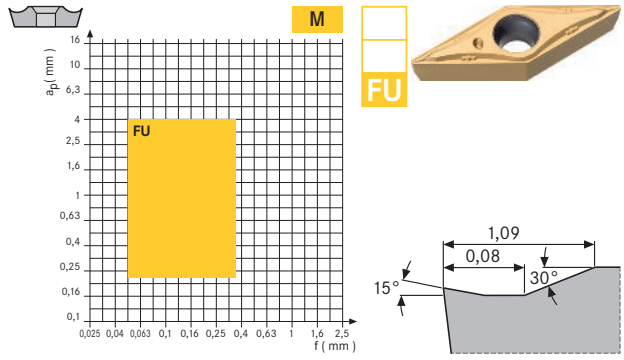


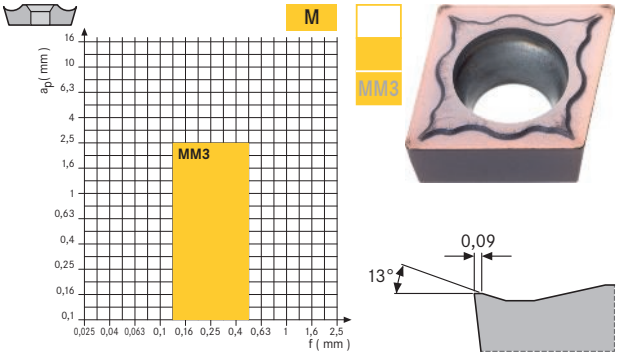


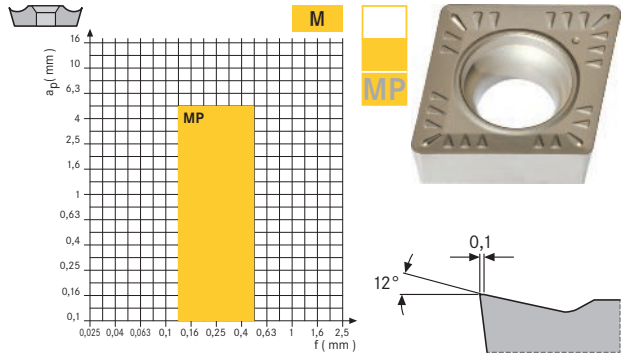
selection of chip breaker – positive chip breaker
stainless steels

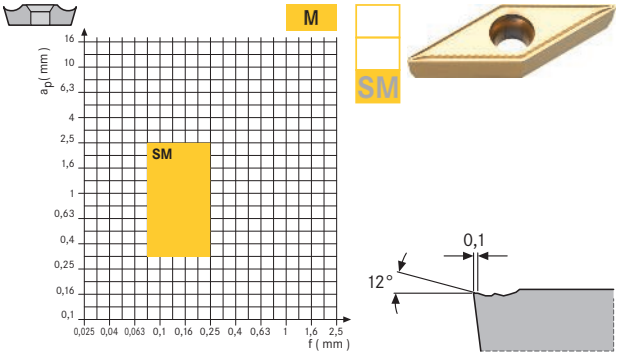
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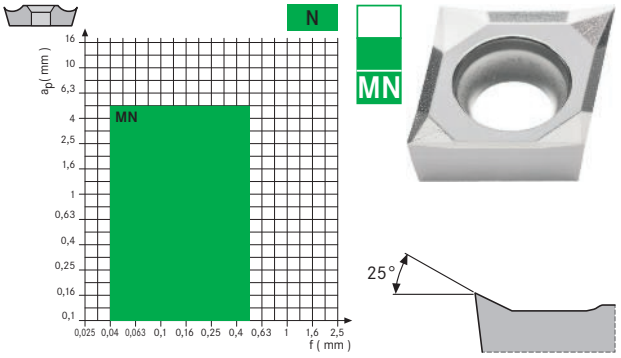


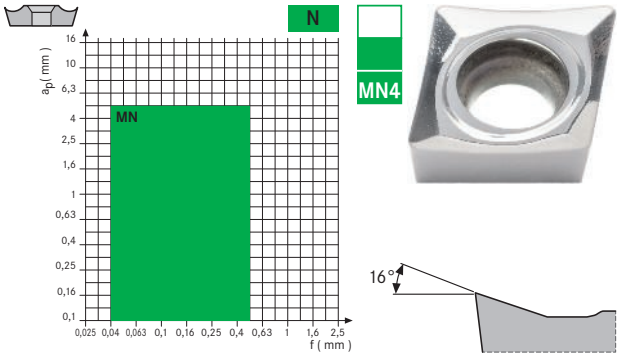


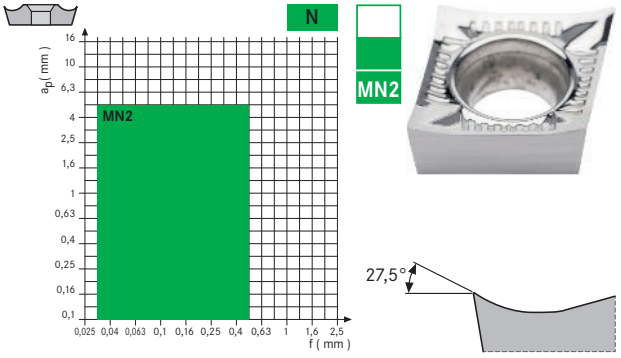


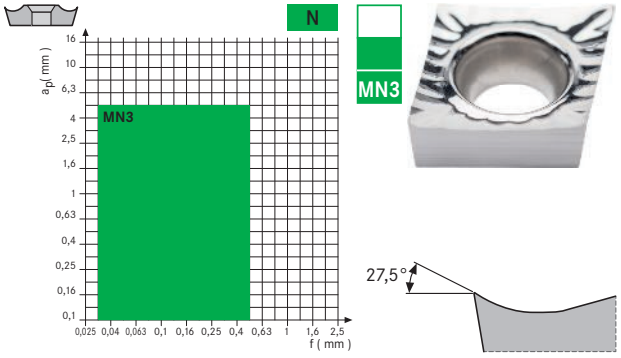
selection of chip breaker – positive chip breaker
non-ferrous metals

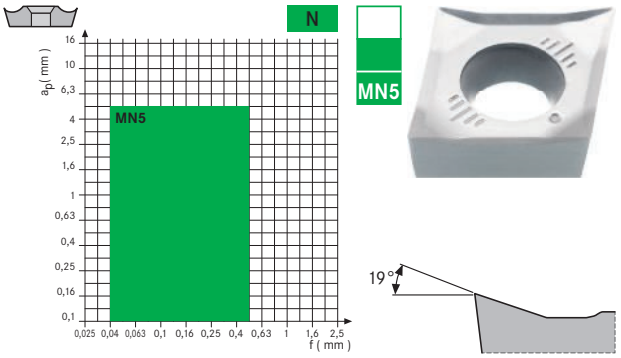
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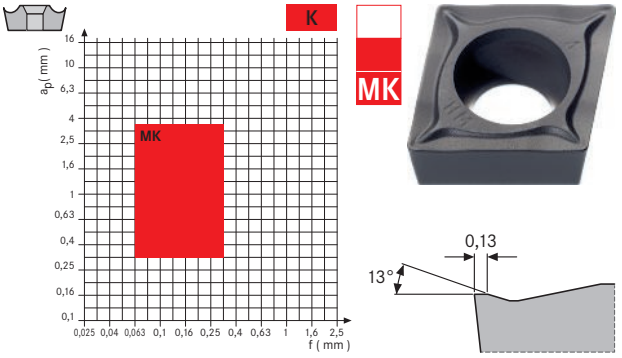






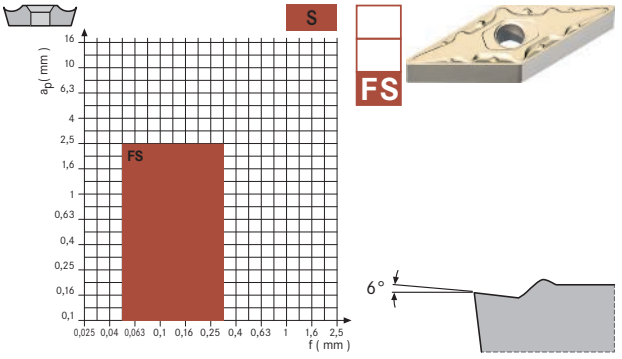
selection of chip breaker – positive chip breaker
cast materials

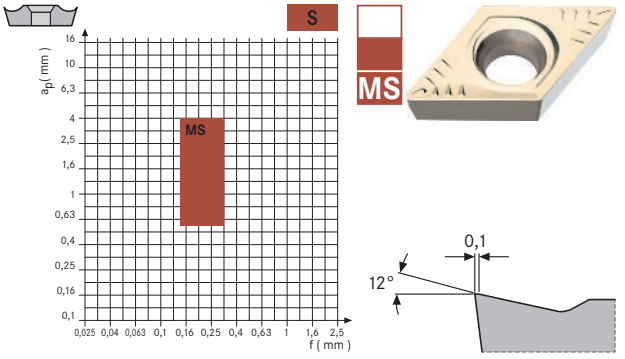
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selection of chip breaker – positive chip breaker
special alloys

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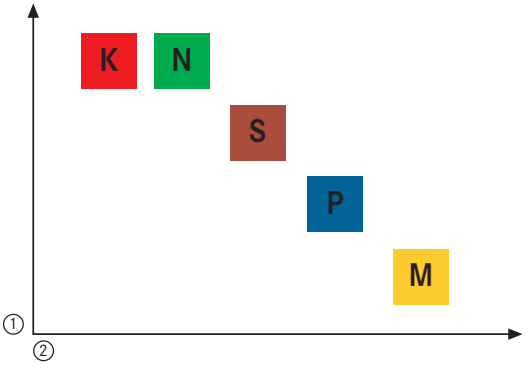


Selection of cemented carbide grade

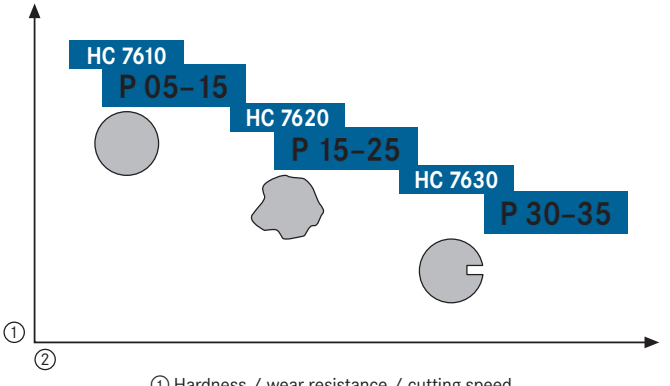
When selecting the cemented carbide grade, the following basic substrates are available to the user. A distinction is made between the following basic substrates in terms of hardness and wear resistance:

The various basic substrates can produce very hard qualities or a high level of toughness depending on the composition.

- Very hard substrates are identified by a low numeral P10
- Very tough substrates are identified by a high numeral P30



① Hardness ② Toughness



① Hardness / wear resistance / cutting speed
② Toughness / breaking strength

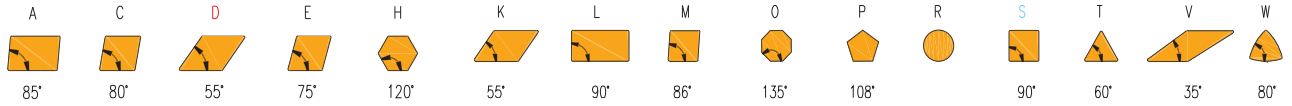
Good cutting conditions

Average cutting conditions

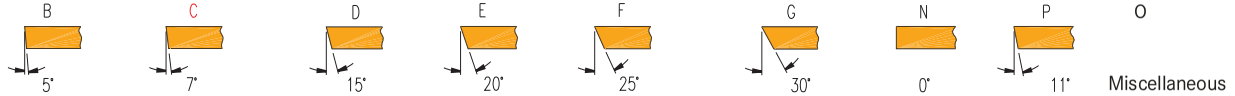
Unfavourable cutting conditions

As illustrated in the diagram, hard substrates can only be used under favourable cutting conditions. These substrates are very hard and wear-resistant but will break under difficult cutting conditions. In the case of unfavourable cutting conditions, we use very tough substrates that are highly impact-resistant but less wear-resistant.

D — 1. Insert shape



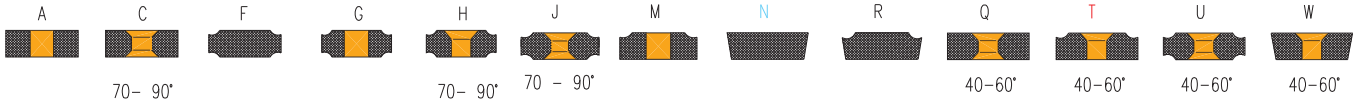
C — 2. Clearance angle



M — 3. Tolerance class

± tolerances (µm)	A	C	E	G	H	J	K	M	N	U
for incircle d	25	25	25	25	13	50–150	50–150	50–150	50–150	80–250
for test dimension m	5	13	25	25	13	5	13	80–200	80–200	130–380
for thickness s	25	25	25	50–130	25	25	25	50–130	25	130

T — 4. Insert type



X
Scalene insert shape or dimensions of the symbols 5, 6 or 7 deviating from the standard

11 — 5. Cutter length

C	04	05	06	08	09	12	16	19	25
D			07		11	15			
S			06		09	12	15	19	25
Incircle d	4.76	5.56	6.35	7.94	9.52	12.7	15.88	19.05	25.4

T	08	09	11	13	16	22	27	33
V			11	13	16			
W		03	04	05	06	08		
Incircle d	4.76	5.56	6.35	7.94	9.52	12.7	15.88	19.05

R	05	06	08	09	10	12	12
Incircle d	5	6	8	9.52	10	12	12.7
R	15	16	19	20	25	25	32
Incircle d	15.88	16	19.05	20	25	25.4	32

T3 — 6. Insert thickness



	01	T1	02	03	T3	04	05	06	07	09
Thickness s	1.59	1.98	2.38	3.18	3.97	4.76	5.56	6.35	7.94	9.52

08 — 7. Cutter angle

Radius r	00	02	04	08	12	16	20	24	32
Corner radius	0	0.2	0.4	0.8	1.2	1.6	2.0	2.4	3.2

00	MO
Round plate (inch)	Round plate (metr.)

8. Cutter version



Symbols only if required

9. Cut direction



Symbol N only if required

-MP — 10. Additional indications

These indications do not form part of the standard and are facultative.
e. g. -AS3 for chip shaper geometry "medium stress"

Example: turning **DCMT 11 T3 08-MP**

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.
www.iconridge.com

Cemented carbide key



*HC 7620

① H = Cemented carbide
② C = Coated / W = Uncoated
③ 7 = Generation of cemented carbide grade
④ ISO Group 6 = P; 5 = M; 4 = K ; 3 = N; 2 = S
⑤ As per ISO Group P10; P20; P30;

***Note:** ORION cemented carbide grades follow the same pattern, with the difference that an O is placed in front, e.g. OHC 7625

overview: cemented carbide qualities ATORN/ORION

appli-cation	coating	range of applications 01 05 10 15 20 25 30 35 40 45
ISO P	CVD	HC7610
	CVD	HC7620
	CVD	HC7630
	CVD	OHC7615
	CVD	OHC7625
	CVD	OHC7635
ISO M	PVD	HC7510
	PVD	HC7520
	PVD	HC7530
	PVD	OHC7515
	PVD	OHC7520
	PVD	OHC7525
	PVD	OHC7530
	PVD	OHC7535
ISO K	CVD	OHC6410
	CVD	OHC6420
ISO N	CVD	OHC7310
	CVD	OHC6310
	CVD	OHW6310
	CVD	HC6310
	CVD	HW6310
ISO S	CVD	HC7210
	CVD	HC7220
		←← wear resistance toughness →→

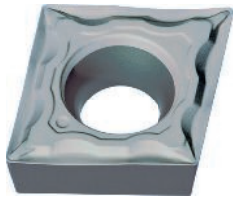
cutting data on packaging

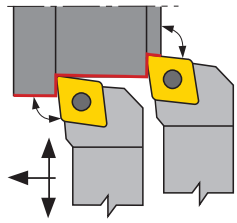


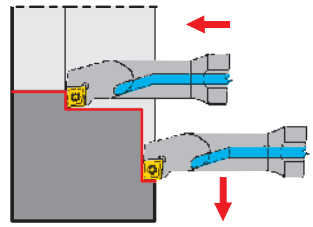
the HK ISO range of indexable inserts is always delivered with cut data on the packaging. this provides the user with a high degree of safety and good handling.

CC.. Indexable inserts - for longitudinal turning and facing

For longitudinal turning and facing





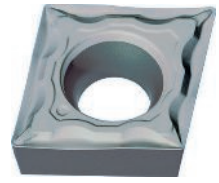


ATORN® CCMT smoothing positive

ISO P

Carbide type			HC7610		HC7620	
Machining conditions for indexable insert			Good		Medium	
Vc in steel ●			140-380 m/min		110-320 m/min	
Vc in cast iron ●			140-240 m/min		140-260 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CCMT 060202-FP	0.1-1.5 mm	0.05-0.16 mm/U	058	●	059	●
CCMT 060204-FP	0.1-1.5 mm	0.05-0.16 mm/U	060	●	061	●
CCMT 09T302-FP	0.1-1 mm	0.04-0.12 mm/U	062	●	063	●
CCMT 09T304-FP	0.1-1.5 mm	0.05-0.16 mm/U	064	●	065	●
CCMT 09T308-FP	0.1-2.5 mm	0.08-0.2 mm/U	066	●	067	●
CCMT 120404-FP	0.1-1.5 mm	0.05-0.16 mm/U	068	●	069	●
CCMT 120408-FP	0.1-2.5 mm	0.08-0.2 mm/U	070	●	071	●

Prod. Gr. 156



FP – finishing



ATORN® CCMT Wiper positive

ISO P

Carbide type			HC7620		HC7630	
Machining conditions for indexable insert			Medium		Unfavourable	
Vc in steel ●			110-320 m/min		80-220 m/min	
Vc in cast iron ●			140-260 m/min			
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CCMT 09T304-WP	0.5-4 mm	0.12-0.4 mm/U	092	●	093	●
CCMT 09T308-WP	0.7-4 mm	0.15-0.5 mm/U	094	●	095	●
CCMT 120404-WP	0.5-4 mm	0.12-0.4 mm/U	096	●	107	●
CCMT 120408-WP	0.7-4 mm	0.15-0.5 mm/U	097	●	106	●

Prod. Gr. 156



WP – wiper

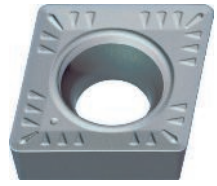


ATORN® CCMT medium machining positive

ISO P

Carbide type			HC7610		HC7620		HC7630	
Machining conditions for indexable insert			Good		Medium		Unfavourable	
Vc in steel ●			140-380 m/min		110-320 m/min		80-220 m/min	
Vc in cast iron ●			140-240 m/min		140-260 m/min			
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.		17863... Ident. No.	
CCMT 060204-MP	0.4-3 mm	0.12-0.25 mm/U	074	●	075	●	076	●
CCMT 09T304-MP	0.4-3 mm	0.12-0.25 mm/U	080	●	081	●	082	●
CCMT 09T308-MP	0.6-4 mm	0.16-0.35 mm/U	083	●	084	●	085	●
CCMT 120404-MP	0.4-3 mm	0.12-0.25 mm/U	086	●	087	●	088	●
CCMT 120408-MP	0.6-5 mm	0.16-0.4 mm/U	089	●	090	●	091	●

Prod. Gr. 156



MP – medium machining



ATORN® CCMT medium machining positive
ISO M

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel	80-210 m/min		90-160 m/min	
		Vc in special alloys	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CCMT 060204-MP	0.4-2.5 mm	0.12-0.25 mm/U	605	●	606	●
CCMT 09T304-MP	0.4-2.5 mm	0.12-0.25 mm/U	607	●	608	●
CCMT 09T308-MP	0.6-4 mm	0.16-0.35 mm/U	609	●	610	●
CCMT 120408-MP	0.6-5 mm	0.16-0.4 mm/U	611	●	612	●
CCMT 120412-MP	0.8-5 mm	0.18-0.5 mm/U	613	●	614	●

Prod. Gr. 156



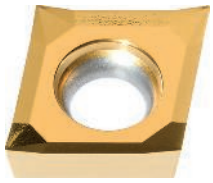
MP medium machining



ATORN® CCGT medium machining positive
ISO N

		Carbide type	HC4625	
		Machining conditions for indexable insert	Medium	
		Vc in steel	120-450 m/min	
		Vc in non-ferrous metals	150-300 m/min	
		Vc in stainless steel	30-50 m/min	
		Vc in cast iron	150-500 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.	
CCGT 030102 R-F	0.2-1.5 mm	0.05-0.1 mm/U	782	●
CCGT 030102 L-F	0.2-1.5 mm	0.05-0.1 mm/U	784	●

Prod. Gr. 156



MN – medium machining



ATORN® CCGT medium machining positive
ISO N

		Carbide type	HW6310	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals	110-600 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.	
CCGT 060202-MN	0.2-1.5 mm	0.04-0.12 mm/U	709	●
CCGT 060204-MN	0.3-1.8 mm	0.05-0.16 mm/U	719	●
CCGT 09T302-MN	0.2-2 mm	0.04-0.12 mm/U	729	●
CCGT 09T304-MN	0.3-2.5 mm	0.05-0.16 mm/U	739	●
CCGT 09T308-MN	0.5-3 mm	0.08-0.2 mm/U	749	●
CCGT 120402-MN	0.2-3.5 mm	0.04-0.12 mm/U	759	●
CCGT 120404-MN	0.3-4 mm	0.05-0.16 mm/U	769	●
CCGT 120408-MN	0.5-5 mm	0.08-0.2 mm/U	779	●

Prod. Gr. 156



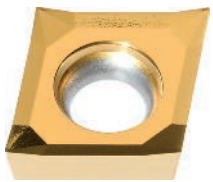
MN medium machining



ATORN® CCGT medium machining positive
ISO N

		Carbide type	HC6310	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals	160-1000 m/min	
		Vc in stainless steel	120-200 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.	
CCGT 060202-MN	0.2-1.5 mm	0.04-0.12 mm/U	711	●
CCGT 060204-MN	0.3-1.8 mm	0.05-0.16 mm/U	721	●
CCGT 09T302-MN	0.2-2 mm	0.04-0.12 mm/U	731	●
CCGT 09T304-MN	0.3-2.5 mm	0.05-0.16 mm/U	741	●
CCGT 09T308-MN	0.5-3 mm	0.08-0.2 mm/U	751	●
CCGT 120402-MN	0.2-3.5 mm	0.04-0.12 mm/U	761	●
CCGT 120404-MN	0.3-4 mm	0.05-0.16 mm/U	771	●
CCGT 120408-MN	0.5-5 mm	0.08-0.2 mm/U	781	●

Prod. Gr. 156



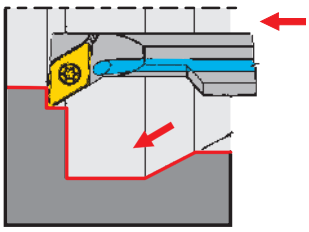
MN – medium machining

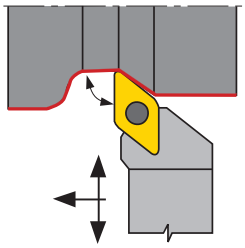




DC.. Indexable inserts - for longitudinal and copy turning
For longitudinal and copy turning







ATORN® DCMT smoothing positive
ISO P

		Carbide type	HC7610		HC7620	
		Machining conditions for indexable insert	Good		Medium	
		Vc in steel ●	160-380 m/min		110-320 m/min	
		Vc in cast iron ●	140-280 m/min		140-260 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DCMT 070202-FP	0.1-1 mm	0.04-0.12 mm/U	047	●	048	●
DCMT 070204-FP	0.1-1.5 mm	0.05-0.16 mm/U	049	●	050	●
DCMT 11T302-FP	0.1-1 mm	0.04-0.12 mm/U	051	●	052	●
DCMT 11T304-FP	0.1-1.5 mm	0.05-0.16 mm/U	053	●	054	●
DCMT 11T308-FP	0.1-2.5 mm	0.08-0.2 mm/U	-	-	056	●

Prod. Gr. 156



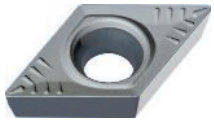
FP finishing



ATORN® DCMT medium machining positive
ISO P

		Carbide type	HC7610		HC7620		HC7630	
		Machining conditions for indexable insert	Good		Medium		Unfavourable	
		Vc in steel ●	160-380 m/min		110-320 m/min		80-220 m/min	
		Vc in cast iron ●	140-280 m/min		140-260 m/min			
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.		17864... Ident. No.	
DCMT 070204-MP	0.4-2 mm	0.12-0.2 mm/U	061	●	062	●	063	●
DCMT 070208-MP	0.6-2 mm	0.16-0.25 mm/U	064	●	068	●	066	●
DCMT 11T304-MP	0.4-3 mm	0.12-0.25 mm/U	-	-	072	●	073	●
DCMT 11T308-MP	0.6-4 mm	0.16-0.3 mm/U	-	-	079	●	080	●

Prod. Gr. 156



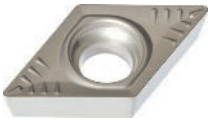
MP medium machining



ATORN®
ISO M

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel ●	80-210 m/min		90-160 m/min	
		Vc in special alloys ●	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DCMT 070204-MP	0.4-2 mm	0.12-0.2 mm/U	606	●	607	●
DCMT 070208-MP	0.6-2 mm	0.16-0.25 mm/U	608	●	-	-
DCMT 11T304-MP	0.4-2 mm	0.16-0.25 mm/U	609	●	610	●
DCMT 11T308-MP	0.6-4 mm	0.16-0.3 mm/U	611	●	612	●

Prod. Gr. 156



MP medium machining



ATORN® DCGT medium machining positive
ISO N

		Carbide type	HW6310	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals ●	130-1300 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.	
DCGT 070202-MN	0.2-1.5 mm	0.04-0.12 mm/U	709	●
DCGT 070204-MN	0.3-1.8 mm	0.05-0.16 mm/U	719	●
DCGT 11T302-MN	0.2-2 mm	0.04-0.12 mm/U	729	●
DCGT 11T304-MN	0.3-2.5 mm	0.05-0.16 mm/U	739	●
DCGT 11T308-MN	0.5-3 mm	0.08-0.2 mm/U	749	●

Prod. Gr. 156



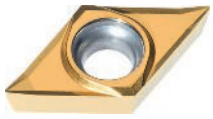
MN medium machining



ATORN® DCGT medium machining positive
ISO N

		Carbide type	HC6310	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals ●	160-1000 m/min	
		Vc in stainless steel ●	120-200 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.	
DCGT 070202-MN	0.2-1.5 mm	0.04-0.12 mm/U	711	●
DCGT 070204-MN	0.3-1.8 mm	0.05-0.16 mm/U	721	●
DCGT 11T302-MN	0.2-2 mm	0.04-0.12 mm/U	731	●
DCGT 11T304-MN	0.3-2.5 mm	0.05-0.16 mm/U	741	●
DCGT 11T308-MN	0.5-3 mm	0.08-0.2 mm/U	751	●

Prod. Gr. 156



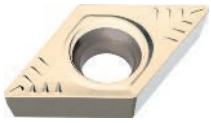
MN medium machining



ATORN® DCMT medium machining positive
ISO S

		Carbide type	HC7210		HC7220	
		Machining conditions for indexable insert	Medium		Medium	
		Vc in stainless steel ●	120-190 m/min		120-190 m/min	
		Vc in special alloys ●	30-60 m/min		30-60 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DCMT 070208-MS	0.6-2 mm	0.16-0.25 mm/U	859	●	860	●
DCMT 11T308-MS	0.6-4 mm	0.16-0.3 mm/U	861	●	862	●

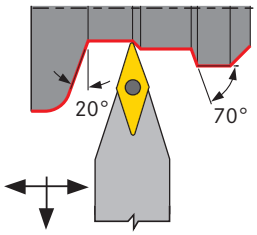
Prod. Gr. 156

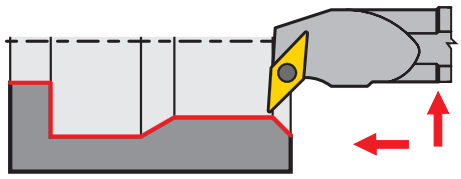


MS medium machining



VB.. Indexable inserts - for longitudinal and copy turning
For longitudinal and copy turning

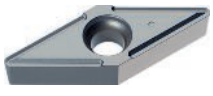




ATORN® VBMT smoothing positive
ISO P

		Carbide type	HC7610		HC7620	
		Machining conditions for indexable insert	Good		Medium	
		Vc in steel ●	200-380 m/min		140-320 m/min	
		Vc in cast iron ●	180-280 m/min		160-260 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.		17866... Ident. No.	
VBMT 160404-SP	0.3-2 mm	0.08-0.25 mm/U	001	●	002	●
VBMT 160408-SP	0.6-2.5 mm	0.12-0.3 mm/U	004	●	005	●
VBMT 160412-SP	1-2.5 mm	0.15-0.3 mm/U	-	-	008	●

Prod. Gr. 156



SP finishing



ATORN® VBMT smoothing positive
ISO M

		Carbide type	HC7520	
		Machining conditions for indexable insert	Medium	
		Vc in stainless steel ●	80-210 m/min	
		Vc in special alloys ●	30-60 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VBMT 160404-SM	0.3-2 mm	0.08-0.25 mm/U	609	●
VBMT 160408-SM	0.6-2.5 mm	0.12-0.25 mm/U	610	●

Prod. Gr. 156



SP finishing



ATORN® VBMT smoothing positive
ISO S

		Carbide type	HC7220		HC7210	
		Machining conditions for indexable insert	Medium		Medium	
		Vc in stainless steel ●	120-230 m/min		120-230 m/min	
		Vc in special alloys ●	30-60 m/min		30-60 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.		17866... Ident. No.	
VBMT 110308-SS	0.5-1.6 mm	0.12-0.3 mm/U	650	●	649	●
VBMT 160408-SS	0.6-2.5 mm	0.12-0.3 mm/U	651	●	-	-

Prod. Gr. 156

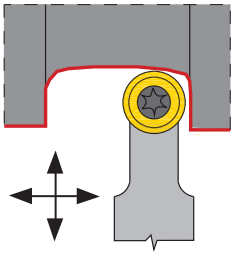


SM finishing



RC.. Indexable inserts - for longitudinal and copy turning
For longitudinal and copy turning





ATORN® RCMT medium machining positive
ISO P

		Carbide type	HC6620	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	190-340 m/min	
		Vc in cast iron ●	180-310 m/min	
ISO name	min./max. ap	f min./max.	17865... Ident. No.	
RCMT 0602-MP	1-1.5 mm	0.15-0.4 mm/U	014	●
RCMT 0803-MP	1-2 mm	0.15-0.4 mm/U	019	●
RCMT 10T3-MP	1-2.5 mm	0.15-0.4 mm/U	024	●
RCMT 1204-MP	1-3 mm	0.15-0.4 mm/U	034	●

Prod. Gr. 156



MP – medium machining



ATORN® RCMT medium machining positive
ISO M

		Carbide type	HC6530	
		Machining conditions for indexable insert	Medium	
		Vc in stainless steel ●	110-200 m/min	
		Vc in special alloys ●	30-60 m/min	
ISO name	min./max. ap	f min./max.	17865... Ident. No.	
RCMT 0602-MM	1-1.2 mm	0.15-0.5 mm/U	018	●
RCMT 0803-MM	1-1.8 mm	0.15-0.5 mm/U	021	●
RCMT 10T3-MM	1-2.2 mm	0.15-0.5 mm/U	028	●
RCMT 1204-MM	1-2.5 mm	0.15-0.5 mm/U	038	●

Prod. Gr. 156

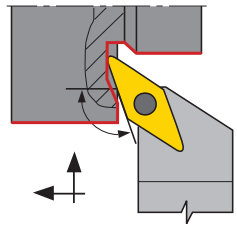


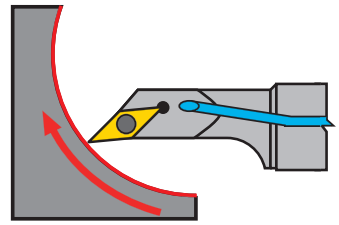
MM – medium machining



VC.. Indexable inserts - for longitudinal and copy turning
For longitudinal and copy turning







ATORN® VCMT smoothing positive
ISO P



FP finishing

		Carbide type	HC7610		HC7620	
		Machining conditions for indexable insert	Good		Medium	
		Vc in steel ●	160-380 m/min		110-320 m/min	
		Vc in cast iron ●	140-280 m/min		140-260 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.		17866... Ident. No.	
VCMT 110302-FP	0.1-1 mm	0.04-0.12 mm/U	025	●	027	●
VCMT 110304-FP	0.1-1.5 mm	0.05-0.16 mm/U	029	●	033	●
VCMT 160402-FP	0.1-1 mm	0.04-0.12 mm/U	035	●	037	●
VCMT 160404-FP	0.1-1.5 mm	0.05-0.16 mm/U	039	●	045	●

Prod. Gr. 156

ATORN® VCMT medium machining positive
ISO P



MP medium machining

		Carbide type	HC7610		HC7620		HC7630	
		Machining conditions for indexable insert	Good		Medium		Unfavourable	
		Vc in steel ●	160-380 m/min		110-320 m/min		80-220 m/min	
		Vc in cast iron ●	140-280 m/min		140-260 m/min			
ISO name	min./max. ap	f min./max.	17866... Ident. No.		17866... Ident. No.		17866... Ident. No.	
VCMT 110304-MP	0.4-2.5 mm	0.12-0.2 mm/U	051	●	052	●	055	●
VCMT 110308-MP	0.6-3 mm	0.16-0.25 mm/U	057	●	060	●	061	●
VCMT 160404-MP	0.4-2.5 mm	0.12-0.25 mm/U	062	●	063	●	064	●
VCMT 160408-MP	0.6-3 mm	0.16-0.3 mm/U	065	●	066	●	067	●

Prod. Gr. 156

ATORN® VCMT smoothing positive
ISO M



FM finishing

		Carbide type	HC7520	
		Machining conditions for indexable insert	Medium	
		Vc in stainless steel ●	80-240 m/min	
		Vc in special alloys ●	30-60 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VCMT 160404-FM	0.1-1.5 mm	0.05-0.16 mm/U	601	●

Prod. Gr. 156

ATORN® VCMT medium machining positive
ISO M



MP medium machining

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel ●	80-240 m/min		90-160 m/min	
		Vc in special alloys ●	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.		17866... Ident. No.	
VCMT 110304-MP	0.4-2.5 mm	0.12-0.3 mm/U	602	●	603	●
VCMT 110308-MP	0.6-3 mm	0.16-0.3 mm/U	604	●	-	-
VCMT 160404-MP	0.4-2.5 mm	0.16-0.25 mm/U	605	●	606	●
VCMT 160408-MP	0.6-3.0 mm	0.12-0.3 mm/U	607	●	608	●

ATORN® VCGT medium machining positive
ISO N



MN medium machining



		Carbide type	HW6310	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals ●	130-1300 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VCGT 110302-MN	0.2-1 mm	0.04-0.12 mm/U	709	●
VCGT 110304-MN	0.3-1.5 mm	0.05-0.16 mm/U	719	●
VCGT 160404-MN	0.3-2 mm	0.05-0.16 mm/U	739	●
VCGT 160408-MN	0.5-3 mm	0.08-0.2 mm/U	749	●

Prod. Gr. 156

ATORN® VCGT medium machining positive
ISO N



MN medium machining



		Carbide type	HC6310	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals ●	160-1000 m/min	
		Vc in stainless steel ●	120-200 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VCGT 110302-MN	0.2-1 mm	0.04-0.12 mm/U	711	●
VCGT 110304-MN	0.3-1.5 mm	0.05-0.16 mm/U	721	●
VCGT 160404-MN	0.3-2 mm	0.05-0.16 mm/U	741	●
VCGT 160408-MN	0.5-3 mm	0.08-0.2 mm/U	751	●

Prod. Gr. 156

ATORN® VCGT smoothing positive
ISO S



FS finishing

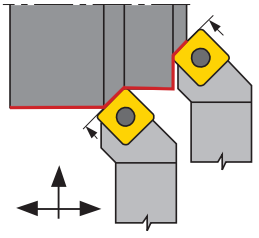


		Carbide type	HC7220	
		Machining conditions for indexable insert	Medium	
		Vc in stainless steel ●	120-190 m/min	
		Vc in special alloys ●	30-60 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VCMT 160404-FS	0.1-1.5 mm	0.05-0.16 mm/U	680	●

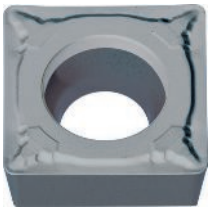
Prod. Gr. 156

SC.. Indexable inserts - for longitudinal turning and facing
For longitudinal turning and facing





ATORN® SCMT smoothing positive
ISO P



FP finishing



		Carbide type	HC7620	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	110-320 m/min	
		Vc in cast iron ●	140-240 m/min	
ISO name	min./max. ap	f min./max.	17867... Ident. No.	
SCMT 09T304-FP	0.1-1.5 mm	0.05-0.15 mm/U	142	●
SCMT 09T308-FP	0.1-1.8 mm	0.05-0.18 mm/U	144	●

Prod. Gr. 156

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® SCMT medium machining positive
ISO P

			Carbide type	HC7620		HC7630	
			Machining conditions for indexable insert	Medium		Unfavourable	
			Vc in steel ●	110-320 m/min		80-220 m/min	
			Vc in cast iron ●	140-240 m/min			
ISO name	min./max. ap	f min./max.		17867... Ident. No.		17867... Ident. No.	
SCMT 09T304-MP	0.4-3 mm	0.12-0.25 mm/U		147	●	148	●
SCMT 09T308-MP	0.6-4 mm	0.16-0.35 mm/U		152	●	153	●
SCMT 120404-MP	0.4-3 mm	0.12-0.25 mm/U		157	●	-	-
SCMT 120408-MP	0.6-4 mm	0.16-0.4 mm/U		160	●	-	-

Prod. Gr. 156



MP medium machining



ATORN® SCMT medium machining positive
ISO M

			Carbide type	HC7520	
			Machining conditions for indexable insert	Medium	
			Vc in stainless steel ●	80-220 m/min	
			Vc in special alloys ●	30-60 m/min	
ISO name	min./max. ap	f min./max.		17867... Ident. No.	
SCMT 09T304-MP	0.4-3 mm	0.12-0.25 mm/U		650	●
SCMT 09T308-MP	0.6-4 mm	0.16-0.35 mm/U		654	●
SCMT 120408-MP	0.6-5 mm	0.16-0.4 mm/U		657	●

Prod. Gr. 156



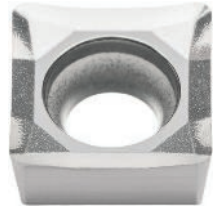
MP medium machining



ATORN® SCMT medium machining positive
ISO N

			Carbide type	HC6310	
			Machining conditions for indexable insert	Good	
			Vc in non-ferrous metals ●	160-3000 m/min	
			Vc in stainless steel ●	80-220 m/min	
ISO name	min./max. ap	f min./max.		17867... Ident. No.	
SCGT 09T308-MN	0.7-4 mm	0.1-0.35 mm/U		700	●

Prod. Gr. 156



MN medium machining



p. 586 p. 523

ATORN® SCMT medium machining positive
ISO N

			Carbide type	HW6310	
			Machining conditions for indexable insert	Good	
			Vc in non-ferrous metals ●	130-2400 m/min	
ISO name	min./max. ap	f min./max.		17867... Ident. No.	
SCGT 09T308-MN	0.7-4 mm	0.1-0.35 mm/U		701	●

Prod. Gr. 156



MN medium machining

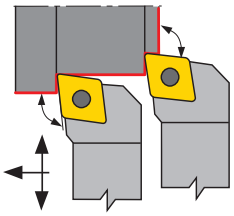


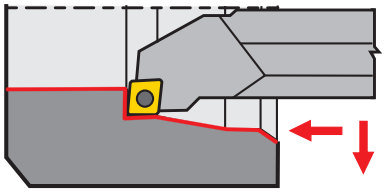
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ICON RIDGE

CN.. Indexable inserts - for longitudinal turning and facing
For longitudinal turning and facing



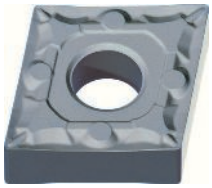




ATORN® CNMG smoothing negative
ISO P

		Carbide type	HC7610		HC7620	
		Machining conditions for indexable insert	Good		Medium	
		Vc in steel ●	110-420 m/min		80-350 m/min	
		Vc in cast iron ●	110-320 m/min		60-290 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CNMG 120404-FP	0.1-1.5 mm	0.04-0.2 mm/U	098	●	099	●
CNMG 120408-FP	0.2-2 mm	0.08-0.25 mm/U	100	●	101	●

Prod. Gr. 156



FP finishing



ATORN® CNMG Wiper negative
ISO P

		Carbide type	HC7620	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	80-350 m/min	
		Vc in cast iron ●	60-290 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.	
CNMG 120408-WP	0.7-4 mm	0.15-0.5 mm/U	200	●

Prod. Gr. 156



WP – wiper



ATORN® CNMG medium machining negative
ISO P

		Carbide type	HC7620		HC7630		HC7610	
		Machining conditions for indexable insert	Medium		Unfavourable		Good	
		Vc in steel ●	80-350 m/min		60-220 m/min		110-420 m/min	
		Vc in cast iron ●	60-290 m/min				110-320 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.		17863... Ident. No.	
CNMG 120404-MP	0.5-4 mm	0.1-0.18 mm/U	102	●	103	●	-	-
CNMG 120408-MP	0.6-5 mm	0.15-0.25 mm/U	105	●	108	●	104	●
CNMG 120412-MP	0.8-4 mm	0.18-0.3 mm/U	161	●	162	●	160	●
CNMG 160608-MP	1-7 mm	0.15-0.3 mm/U	170	●	-	-	-	-
CNMG 160612-MP	1.2-7 mm	0.2-0.4 mm/U	171	●	-	-	-	-

Prod. Gr. 156



MP medium machining



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® CNMG rough machining negative
ISO P

		Carbide type	HC7610		HC7620		HC7630	
		Machining conditions for indexable insert	Good		Medium		Unfavourable	
		Vc in steel ●	110-420 m/min		80-350 m/min		60-220 m/min	
		Vc in cast iron ●	110-320 m/min		60-290 m/min			
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.		17863... Ident. No.	
CNMG 120408-RP	1-5 mm	0.2-0.4 mm/U	174	●	175	●	176	●
CNMG 120412-RP	1.2-6 mm	0.25-0.55 mm/U	179	●	180	●	183	●

Prod. Gr. 156



RP rough machining



ATORN® CNMM rough machining negative
ISO P

		Carbide type	HC7620		HC7630	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in steel ●	80-230 m/min		60-200 m/min	
		Vc in cast iron ●	10-210 m/min		10-210 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CNMM 120408-RP	1-7 mm	0.2-0.5 mm/U	270	●	271	●
CNMM 120412-RP	1.5-7 mm	0.25-0.6 mm/U	273	●	274	●
CNMM 160612-RP	2-9 mm	0.45-0.7 mm/U	275	●	-	-
CNMM 190616-RP	2-10 mm	0.45-0.9 mm/U	276	●	-	-

Prod. Gr. 156



RP rough machining of single-sided panel



ATORN® CNMG smoothing negative
ISO M

		Carbide type	HC7510		HC7520	
		Machining conditions for indexable insert	Good		Medium	
		Vc in steel ●	140-320 m/min			
		Vc in stainless steel ●	175-270 m/min		120-260 m/min	
		Vc in special alloys ●			30-60 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CNMG 120404-FM	0.2-1 mm	0.05-0.12 mm/U	601	●	603	●
CNMG 120408-FM	0.4-1.5 mm	0.07-0.16 mm/U	602	●	604	●

Prod. Gr. 156



FM finishing



ATORN® CNMG Wiper negative
ISO M

		Carbide type	HC7520	
		Machining conditions for indexable insert	Medium	
		Vc in stainless steel ●	120-260 m/min	
		Vc in special alloys ●	30-60 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.	
CNMG 120408-WP	0.8-3 mm	0.2-0.55 mm/U	625	●

Prod. Gr. 156



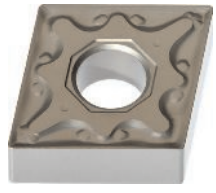
WP wiper



ATORN® CNMG medium machining negative
ISO M

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel ●	120-260 m/min		90-200 m/min	
		Vc in special alloys ●	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CNMG 120404-MM	0.5-2 mm	0.1-0.18 mm/U	615	●	616	●
CNMG 120408-MM	0.8-3.5 mm	0.18-0.3 mm/U	617	●	618	●
CNMG 120412-MM	1.2-3.5 mm	0.18-0.3 mm/U	619	●	620	●

Prod. Gr. 156



MM medium machining



ATORN® CNMG rough machining negative
ISO M

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel 🟡	120-260 m/min		90-200 m/min	
		Vc in special alloys 🟤	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CNMG 120408-RM	1.2-4 mm	0.22-0.4 mm/U	621	●	622	●
CNMG 120412-RM	1.5-4.5 mm	0.25-0.5 mm/U	623	●	624	●
CNMG 160608-RM	1.2-7 mm	0.22-0.45 mm/U	627	●	-	-
CNMG 160612-RM	1.5-7 mm	0.25-0.6 mm/U	629	●	-	-

Prod. Gr. 156



RM rough machining



ATORN® CNMG medium machining negative
ISO S

		Carbide type	HC7220		HC7210	
		Machining conditions for indexable insert	Medium		Medium	
		Vc in stainless steel 🟡	120-210 m/min		120-210 m/min	
		Vc in special alloys 🟤	30-60 m/min		30-60 m/min	
ISO name	min./max. ap	f min./max.	17863... Ident. No.		17863... Ident. No.	
CNMG 120404-MS	0.5-4.0 mm	0.16-0.25 mm/U	680	●	-	-
CNMG 120408-MS	0.5-4.0 mm	0.16-0.30 mm/U	684	●	682	●

Prod. Gr. 156

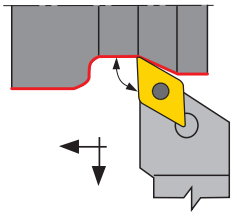


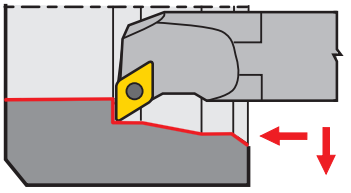
MS – medium machining



DN.. Indexable inserts - for longitudinal and copy turning
For longitudinal and copy turning







ATORN® DNMG smoothing negative
ISO P

		Carbide type	HC7610		HC7620	
		Machining conditions for indexable insert	Good		Medium	
		Vc in steel 🔵	140-420 m/min		80-350 m/min	
		Vc in cast iron 🔴	140-320 m/min		50-290 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DNMG 110408-FP	0.2-2 mm	0.08-0.25 mm/U	100	●	101	●
DNMG 110404-FP	0.1-1.5 mm	0.05-0.2 mm/U	-	-	099	●
DNMG 150604-FP	0.1-1.5 mm	0.05-0.2 mm/U	189	●	181	●
DNMG 150608-FP	0.2-2 mm	0.08-0.25 mm/U	-	-	182	●

Prod. Gr. 156



FP - finishing



ATORN® DNMG medium machining negative
ISO P

		Carbide type	HC7620		HC7630		HC7610	
		Machining conditions for indexable insert	Medium		Unfavourable		Good	
		Vc in steel 🔵	80-350 m/min		60-220 m/min		140-420 m/min	
		Vc in cast iron 🔴	50-290 m/min				140-320 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.		17864... Ident. No.	
DNMG 110404-MP	0.5-4 mm	0.15-0.25 mm/U	185	●	187	●	-	-
DNMG 110408-MP	0.6-4 mm	0.18-0.35 mm/U	251	●	199	●	188	●
DNMG 150604-MP	0.5-4 mm	0.16-0.25 mm/U	201	●	202	●	200	●
DNMG 150608-MP	0.6-5 mm	0.18-0.35 mm/U	204	●	207	●	203	●

Prod. Gr. 156



MP medium machining



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® DNMG rough machining negative
ISO P

		Carbide type	HC7620		HC7630	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in steel ●	80-350 m/min		60-220 m/min	
		Vc in cast iron ●	50-290 m/min			
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DNMG 150608-RP	1-5 mm	0.15-0.35 mm/U	208	●	209	●
DNMG 150612-RP	1-6 mm	0.2-0.4 mm/U	212	●	214	●

Prod. Gr. 156



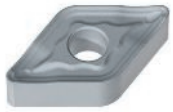
RP rough machining

RP

ATORN® DNMG rough machining negative
ISO P

		Carbide type	HC7620	
		Machining conditions for indexable insert	Medium	
ISO name	min./max. ap	f min./max.	17864... Ident. No.	
DNMM 150612-RP	0.35-5 mm	0.35-0.50 mm/U	222	●

Prod. Gr. 156



RP rough machining of single-sided panel

RP

ATORN® DNMG smoothing negative
ISO M

		Carbide type	HC7510		HC7520	
		Machining conditions for indexable insert	Good		Medium	
		Vc in steel ●	140-320 m/min			
		Vc in stainless steel ●	175-270 m/min		110-260 m/min	
		Vc in special alloys ●			30-60 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DNMG 110404-FM	0.2-1 mm	0.05-0.12 mm/U	601	●	602	●
DNMG 110408-FM	0.4-1.5 mm	0.07-0.16 mm/U	603	●	-	-
DNMG 150604-FM	0.2-1 mm	0.05-0.12 mm/U	604	●	605	●

Prod. Gr. 156



FM finishing

FM

ATORN® DNMG medium machining negative
ISO M

		Carbide type	HC7530		HC7520	
		Machining conditions for indexable insert	Unfavourable		Medium	
		Vc in stainless steel ●	90-200 m/min		110-260 m/min	
		Vc in special alloys ●	20-50 m/min		30-60 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DNMG 110404-MM	0.5-2 mm	0.1-0.18 mm/U	613	●	-	-
DNMG 110408-MM	0.8-3 mm	0.15-0.25 mm/U	615	●	614	●
DNMG 150604-MM	0.5-4 mm	0.16-0.25 mm/U	617	●	616	●
DNMG 150608-MM	0.6-5 mm	0.18-0.35 mm/U	619	●	618	●
DNMG 150612-MM	0.8-4 mm	0.18-0.3 mm/U	621	●	620	●

Prod. Gr. 156



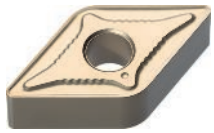
MM medium machining

MM

ATORN® DNMG rough machining negative
ISO M

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel ●	110-260 m/min		90-200 m/min	
		Vc in special alloys ●	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17864... Ident. No.		17864... Ident. No.	
DNMG 150608-RM	0.2-4 mm	0.22-0.4 mm/U	622	●	623	●
DNMG 150612-RM	1.5-4.5 mm	0.25-0.4 mm/U	624	●	-	-

Prod. Gr. 156

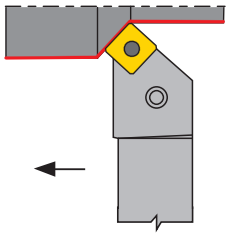


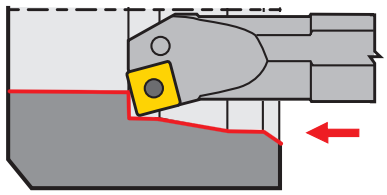
RM rough machining

RM

SN.. Indexable inserts - for longitudinal turning and facing
For longitudinal turning and facing







ATORN® SNMG medium machining negative
ISO P

Carbide type			HC7610		HC7620		HC7630	
Machining conditions for indexable insert			Good		Medium		Unfavourable	
Vc in steel ●			140-340 m/min		80-280 m/min		60-220 m/min	
Vc in cast iron ●			180-290 m/min		120-260 m/min			
ISO name	min./max. ap	f min./max.	17867... Ident. No.		17867... Ident. No.		17867... Ident. No.	
SNMG 120408-MP	0.6-5 mm	0.18-0.4 mm/U	010	●	011	●	012	●
SNMG 120412-MP	1-5 mm	0.2-0.4 mm/U	-	-	017	●	018	●

Prod. Gr. 156



MP medium machining



ATORN® SNMG rough machining negative
ISO P

Carbide type			HC7620		HC7630	
Machining conditions for indexable insert			Medium		Unfavourable	
Vc in steel ●			80-280 m/min		60-220 m/min	
Vc in cast iron ●			120-260 m/min			
ISO name	min./max. ap	f min./max.	17867... Ident. No.		17867... Ident. No.	
SNMG 120408-RP	1-6 mm	0.2-0.5 mm/U	021	●	022	●
SNMG 120412-RP	1-6 mm	0.25-0.65 mm/U	023	●	-	-

Prod. Gr. 156



RP rough machining



ATORN® SNMG medium machining negative
ISO M

Carbide type			HC7520		HC7530	
Machining conditions for indexable insert			Medium		Unfavourable	
Vc in stainless steel ●			150-240 m/min		130-200 m/min	
Vc in special alloys ●			30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17867... Ident. No.		17867... Ident. No.	
SNMG 120408-MM	0.8-3 mm	0.18-0.3 mm/U	600	●	-	-
SNMG 120412-MM	0.8-3 mm	0.18-0.3 mm/U	-	-	601	●

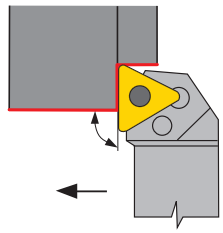
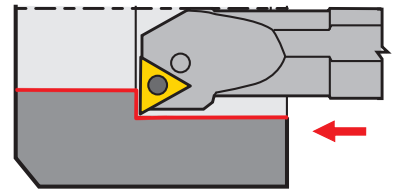
Prod. Gr. 156



MM medium machining



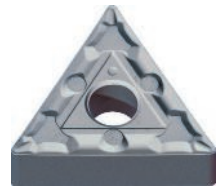
TN.. Indexable inserts - for longitudinal turning and facing
For longitudinal turning and facing

ATORN® TNMG smoothing negative
ISO P

			Carbide type	HC7620
			Machining conditions for indexable insert	Medium
			Vc in steel ●	140-370 m/min
			Vc in cast iron ●	140-300 m/min
ISO name	min./max. ap	f min./max.	17868... Ident. No.	
TNMG 160404-FP	0.1-1.5 mm	0.04-0.2 mm/U	007	●
TNMG 160408-FP	0.2-2 mm	0.08-0.25 mm/U	009	●

Prod. Gr. 156



FP finishing



ATORN® TNMG medium machining negative
ISO P

			Carbide type	HC7620	HC7610
			Machining conditions for indexable insert	Medium	Good
			Vc in steel ●	140-370 m/min	140-350 m/min
			Vc in cast iron ●	140-300 m/min	140-290 m/min
ISO name	min./max. ap	f min./max.	17868... Ident. No.		17868... Ident. No.	
TNMG 160404-MP	0.5-4 mm	0.16-0.25 mm/U	012	●	011	●
TNMG 160408-MP	0.6-4 mm	0.18-0.35 mm/U	016	●	015	●

Prod. Gr. 156



MP medium machining



ATORN® TNMG rough machining negative
ISO P

			Carbide type	HC7620
			Machining conditions for indexable insert	Medium
			Vc in steel ●	140-370 m/min
			Vc in cast iron ●	140-300 m/min
ISO name	min./max. ap	f min./max.	17868... Ident. No.	
TNMG 160408-RP	1-5 mm	0.2-0.4 mm/U	019	●
TNMG 160412-RP	1-5 mm	0.2-0.4 mm/U	036	●

Prod. Gr. 156



RP rough machining



ATORN® TNMG smoothing negative
ISO M

			Carbide type	HC7520
			Machining conditions for indexable insert	Medium
			Vc in stainless steel ●	150-260 m/min
			Vc in special alloys ●	30-60 m/min
ISO name	min./max. ap	f min./max.	17868... Ident. No.	
TNMG 160404-FM	0.2-1 mm	0.05-0.12 mm/U	620	●

Prod. Gr. 156



FM finishing



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® TNMG medium machining negative
ISO M

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel ●	150-260 m/min		130-200 m/min	
		Vc in special alloys ●	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17868... Ident. No.		17868... Ident. No.	
TNMG 160408-MM	0.3-3.5 mm	0.18-0.35 mm/U	621	●	-	-
TNMG 160408-MM	0.6-4 mm	0.18-0.35 mm/U	-	-	601	●

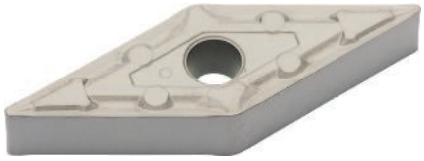
Prod. Gr. 156

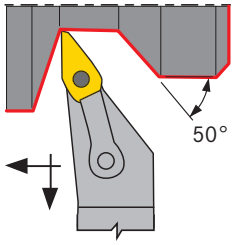


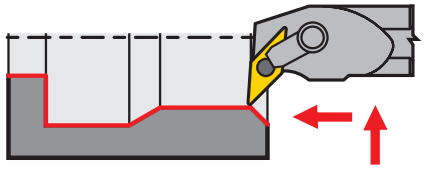
MM medium machining



VN.. Indexable inserts - for longitudinal and copy turning
For longitudinal and copy turning







ATORN® VNMG smoothing negative
ISO P

		Carbide type	HC7620	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	120-350 m/min	
		Vc in cast iron ●	150-290 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VNMG 160404-FP	0.1-1.5 mm	0.04-0.22 mm/U	120	●

Prod. Gr. 156



FP finishing



ATORN® VNMG medium machining negative
ISO P

		Carbide type	HC7620	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	120-350 m/min	
		Vc in cast iron ●	150-290 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VNMG 160404-MP	0.5-4 mm	0.16-0.25 mm/U	136	●
VNMG 160408-MP	0.6-4 mm	0.18-0.35 mm/U	131	●

Prod. Gr. 156



MP medium machining



ATORN® VNMG medium machining negative
ISO M

		Carbide type	HC7520	
		Machining conditions for indexable insert	Medium	
		Vc in stainless steel ●	150-240 m/min	
		Vc in special alloys ●	30-60 m/min	
ISO name	min./max. ap	f min./max.	17866... Ident. No.	
VNMG 160404-MM	0.5-2 mm	0.1-0.18 mm/U	611	●

Prod. Gr. 156

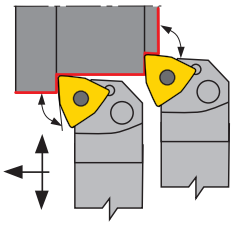


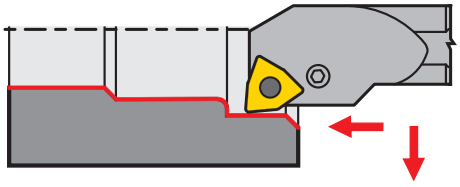
FM finishing



WN.. Indexable inserts - for longitudinal turning and facing
For longitudinal turning and facing



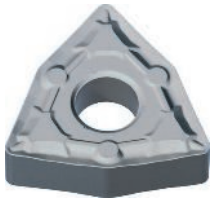




ATORN® WNMG smoothing negative
ISO P

ISO name	min./max. ap	f min./max.	Carbide type: HC7620 Machining conditions for indexable insert: Medium Vc in steel ●: 90-350 m/min Vc in cast iron ●: 120-290 m/min 17869... Ident. No.	
WNMG 060404-FP	0.1-1.5 mm	0.04-0.2 mm/U	002	●
WNMG 080404-FP	0.1-1.5 mm	0.05-0.2 mm/U	006	●
WNMG 080408-FP	0.2-2 mm	0.08-0.25 mm/U	008	●

Prod. Gr. 156



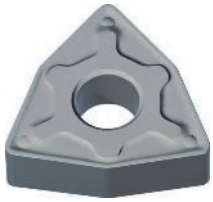
FP finishing



ATORN® WNMG Wiper negative
ISO P

ISO name	min./max. ap	f min./max.	Carbide type: HC7610 Machining conditions for indexable insert: Good Vc in steel ●: 110-350 m/min Vc in cast iron ●: 140-240 m/min 17869... Ident. No.		Carbide type: HC7620 Machining conditions for indexable insert: Medium Vc in steel ●: 90-350 m/min Vc in cast iron ●: 120-290 m/min 17869... Ident. No.	
WNMG 080412-WP	1.5-4 mm	0.25-0.7 mm/U	026	●	046	●
WNMG 080408-WP	0.8-3 mm	0.2-0.55 mm/U	044	●	045	●

Prod. Gr. 156



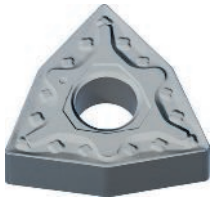
WP wiper



ATORN® WNMG medium machining negative
ISO P

ISO name	min./max. ap	f min./max.	Carbide type: HC7620 Machining conditions for indexable insert: Medium Vc in steel ●: 90-350 m/min Vc in cast iron ●: 120-290 m/min 17869... Ident. No.		HC7610 Good 110-350 m/min 140-240 m/min 17869... Ident. No.		HC7630 Unfavourable 60-220 m/min 17869... Ident. No.	
WNMG 060404-MP	0.5-4 mm	0.16-0.25 mm/U	010	●	-	-	-	-
WNMG 060408-MP	0.6-4 mm	0.18-0.35 mm/U	013	●	-	-	-	-
WNMG 080404-MP	0.5-4 mm	0.16-0.25 mm/U	016	●	015	●	017	●
WNMG 080408-MP	0.6-5 mm	0.18-0.4 mm/U	022	●	021	●	023	●
WNMG 080412-MP	1-6 mm	0.2-0.4 mm/U	027	●	-	-	-	-

Prod. Gr. 156



MP medium machining



ATORN® WNMG rough machining negative
ISO P

Carbide type			HC7610		HC7620		HC7630	
Machining conditions for indexable insert			Good		Medium		Unfavourable	
Vc in steel ●			110-350 m/min		90-350 m/min		60-220 m/min	
Vc in cast iron ●			140-240 m/min		120-290 m/min			
ISO name	min./max. ap	f min./max.	17869... Ident. No.		17869... Ident. No.		17869... Ident. No.	
WNMG 080408-RP	1-6 mm	0.2-0.4 mm/U	036	●	037	●	038	●
WNMG 080412-RP	1-6 mm	0.25-0.5 mm/U	039	●	040	●	-	-

Prod. Gr. 156



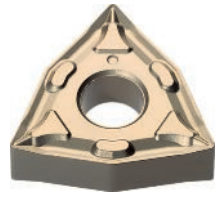
RP rough machining



ATORN® WNMG smoothing negative
ISO M

Carbide type			HC7510		HC7520	
Machining conditions for indexable insert			Good		Medium	
Vc in steel ●			140-320 m/min			
Vc in stainless steel ●			175-270 m/min		110-260 m/min	
Vc in special alloys ●					30-60 m/min	
ISO name	min./max. ap	f min./max.	17869... Ident. No.		17869... Ident. No.	
WNMG 060404-FM	0.2-1 mm	0.05-0.12 mm/U	601	●	602	●
WNMG 080404-FM	0.2-1 mm	0.05-0.12 mm/U	603	●	604	●

Prod. Gr. 156



FM finishing



ATORN® WNMG medium machining negative
ISO M

Carbide type			HC7530		HC7520	
Machining conditions for indexable insert			Unfavourable		Medium	
Vc in stainless steel ●			90-200 m/min		110-260 m/min	
Vc in special alloys ●			30-60 m/min		30-60 m/min	
ISO name	min./max. ap	f min./max.	17869... Ident. No.		17869... Ident. No.	
WNMG 060404-MM	0.5-4 mm	0.16-0.25 mm/U	605	●	-	-
WNMG 060408-MM	0.5-5 mm	0.18-0.4 mm/U	607	●	606	●
WNMG 080408-MM	1-6 mm	0.22-0.4 mm/U	-	-	608	●

Prod. Gr. 156



MM medium machining



ATORN® WNMG rough machining negative
ISO M

Carbide type			HC7520		HC7530	
Machining conditions for indexable insert			Medium		Unfavourable	
Vc in stainless steel ●			110-260 m/min		90-200 m/min	
Vc in special alloys ●			30-60 m/min		30-60 m/min	
ISO name	min./max. ap	f min./max.	17869... Ident. No.		17869... Ident. No.	
WNMG 080408-RM	1.2-6 mm	0.22-0.4 mm/U	610	●	611	●

Prod. Gr. 156



RM rough machining



ATORN® WNMG medium machining negative
ISO S

Carbide type			HC7220		HC7210	
Machining conditions for indexable insert			Medium		Medium	
Vc in stainless steel ●			120-210 m/min		120-210 m/min	
Vc in special alloys ●			30-60 m/min		30-60 m/min	
ISO name	min./max. ap	f min./max.	17869... Ident. No.		17869... Ident. No.	
WNMG 080408-MS	0.6-5 mm	0.18-0.4 mm/U	650	●	651	●

Prod. Gr. 156

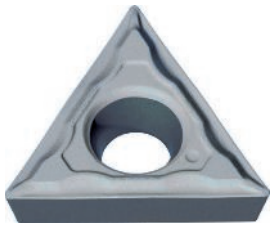


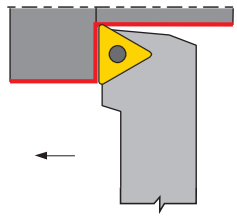
MS medium machining

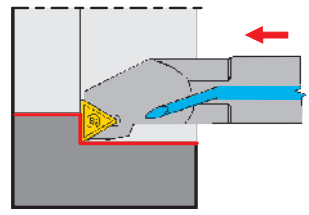


TC.. Indexable inserts - for longitudinal and copy turning

For longitudinal and copy turning





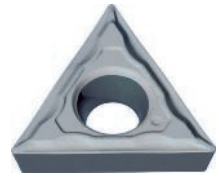


ATORN® TCMT smoothing positive

ISO P

		Carbide type	HC7620	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	110-320 m/min	
		Vc in cast iron ●	140-260 m/min	
ISO name	min./max. ap	f min./max.	17868... Ident. No.	
TCMT 110202-FP	0.1-1 mm	0.04-0.12 mm/U	068	●
TCMT 110204-FP	0.1-1.5 mm	0.05-0.16 mm/U	072	●
TCMT 16T304-FP	0.1-1.5 mm	0.05-0.16 mm/U	075	●
TCMT 16T308-FP	0.1-2.5 mm	0.08-0.2 mm/U	077	●

Prod. Gr. 156



FP finishing

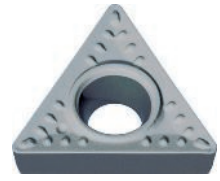


ATORN® TCMT medium machining positive

ISO P

		Carbide type	HC7610		HC7620		HC7630	
		Machining conditions for indexable insert	Good		Medium		Unfavourable	
		Vc in steel ●	160-340 m/min		110-320 m/min		80-220 m/min	
		Vc in cast iron ●	140-240 m/min		140-260 m/min			
ISO name	min./max. ap	f min./max.	17868... Ident. No.		17868... Ident. No.		17868... Ident. No.	
TCMT 110204-MP	0.4-3 mm	0.12-0.25 mm/U	081	●	082	●	083	●
TCMT 16T304-MP	0.4-3 mm	0.16-0.25 mm/U	084	●	085	●	086	●
TCMT 16T308-MP	0.6-4 mm	0.16-0.3 mm/U	087	●	088	●	089	●

Prod. Gr. 156



MP medium machining



ATORN® TCMT medium machining positive

ISO M

		Carbide type	HC7520		HC7530	
		Machining conditions for indexable insert	Medium		Unfavourable	
		Vc in stainless steel ●	80-210 m/min		90-160 m/min	
		Vc in special alloys ●	30-60 m/min		20-50 m/min	
ISO name	min./max. ap	f min./max.	17868... Ident. No.		17868... Ident. No.	
TCMT 110204-MP	0.4-3 mm	0.12-0.25 mm/U	615	●	616	●
TCMT 16T304-MP	0.4-3 mm	0.12-0.25 mm/U	617	●	-	-
TCMT 16T308-MP	0.6-4 mm	0.18-0.35 mm/U	618	●	619	●

Prod. Gr. 156



MM medium machining



ATORN® TCGT medium machining positive

ISO N

		Carbide type	HC6310	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals ●	160-1000 m/min	
		Vc in stainless steel ●	80-220 m/min	
ISO name	min./max. ap	f min./max.	17868... Ident. No.	
TCGT 110202-MN	0.2-1.5 mm	0.1-0.35 mm/U	711	●
TCGT 110204-MN	0.3-1.8 mm	0.1-0.35 mm/U	721	●

Prod. Gr. 156

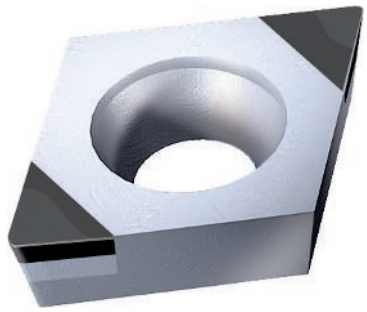


MN medium machining



Hard machining process with CBN

Cutting hardened steel is referred to as hard cutting. By introducing energy in the form of cutting speed vc, feed f, depth of cut ap and different cutting edges = chamfer, self-induced hot cutting is produced. This requires a defined high temperature of approx. 550 to 750° C in the shear zone. Cooling is not required for this process.



To generate and maintain the ideal cutting temperature in the shear zone, the following must be observed:

- Selection of appropriate cutting material for different materials,
- Determination of appropriate bevel geometry A-H
- Identification of cutting speed in event charts (hardness diagram with increasing temperature)

The following points must be noted:

- Exact specification of the type of steel and its hardness in HRC.
- Required surface quality Ra in µm as well as cutting depth.
- Machining conditions smooth, slightly interrupted or severely interrupted cut

Selection of the cutting material types when machining with PCBN

We distinguish between materials based on the concentration of CBN content. In the case of a high CBN content, materials such as cast iron, special alloys and sintered steels can be machined. For hard machining, the CBN content must be reduced.

A distinction is made between the following cutting materials:

Coating	CBN content									
	100	90	80	70	60	50	40	30	20	10
uncoated	ABC-10									
uncoated					ABC-25					
uncoated					ABC-40					
coated	ABC-10B									
coated						ABC-25B				
coated						ABC-40B				

CBN grades, uncoated:

ABC-10

- Uncoated CBN type with very high CBN content (95%) for application in grey cast iron, special alloys, sintered steels
- Fine grain 1-1.5 µm
- Application both in favourable conditions (smooth cut) and unfavourable conditions (non-continuous cut) ap = 0.1-0.7 mm

ABC-25

- Uncoated CBN type with low CBN content (65%) in hard cutting, dry + wet from HRC 52 - 65
- Fine grain (3 µm)
- Application in favourable conditions (smooth cut) and very lightly interrupted cutting ap = 0.05 - 0.4 mm

ABC-40

- Uncoated CBN type with low CBN content (65%)
- Hard machining, dry + wet from HRC 54 - 65
- Application in unfavourable conditions for lightly and heavily interrupted cutting ap = 0.05 - 0.4 mm

CBN grades, coated:

ABC-10B

- CBN cutting material coated with 95% CBN content for application in grey cast iron (GG20-GG40) and special alloys such as Inconell 718, Nicomic, Hastelloy, Waspaloy
- Fine grain (1-1.5 µ)
- Application both in favourable conditions (smooth cut) and unfavourable conditions (non-continuous cut) ap = 0.1-0.7 mm

ABC-25B

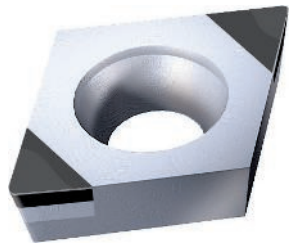
- CBN cutting material coated with 65% CBN content for application in hard machining 48-62 HRC (wet-dry)
- Fine grain (1 - 2µ)
- Application in favourable conditions (smooth cut) ap = 0.02 - 0.4 mm

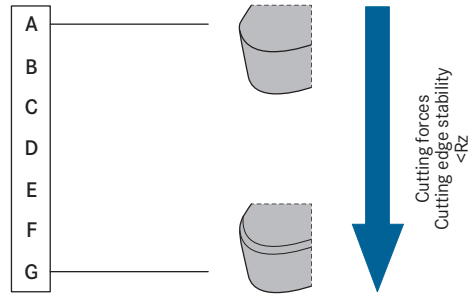
ABC-40B

- CBN cutting material coated with 55% CBN content for application in hard machining 48-62 HRC (wet-dry)
- Superfine grain (0.75 µ)
- Application in unfavourable conditions for lightly and heavily interrupted cutting ap = 0.05-0.4 mm

Cutting edge design for CBN cutting materials

The ATORN cutting edge range includes various distinct cutting edge designs. The standard range includes different chamfers on the cutting edge. These include sharp-edge (A) to high chamfer versions (G), depending on the application. The use of high chamfers on the cutting edge can achieve very good surfaces, but the forces are increased. Sharp-edge variants are the appropriate choice for long projections with unstable conditions.





Machining parameters for CBN cutting materials - ABC-10
Super alloys: Inconel 718, Nimonic, Hastelloy, Waspaloy

V_c: m/min		Cutting edge design (negative chamfer)								
		A	B	C	D	E	F	G	H	
Cutting speed ↑↑↑	700	V_c	V_c	V_c	V_c	V_c	V_c	V_c	V_c	
	600									
	500									
	400									
	300									
	200									
	100									
Feed		f: 0.02-0.25	f: 0.04-0.25	f: 0.05–0.25	f: 0.05-0.4	f: 0.06-0.5	f: 0.08-0.35	f: 0.1-0.35	f: 0.12-0.35	Feed
Cutting depth ABC-10		a_p: 0.02-0.4	a_p: 0.03-0.4	a_p: 0.06-0.4	a_p: 0.06-0.4	a_p: 0.08-0.5	a_p: 0.08-0.4	a_p: 0.1–0.4	a_p: 0.12–0.4	Cutting depth ABC-10
Cutting conditions		Smooth to medium interrupted cut								Cutting conditions

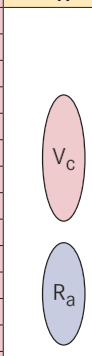
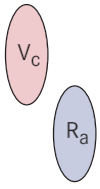
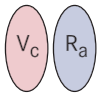
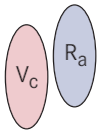
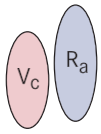
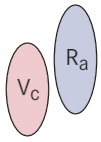
Selecting the corner radius

Selecting the appropriate corner radius is an important component for machining: In principle, small corner radii of 2, 4 mm are highly suitable for ensuring chip control. Larger radii of 8, 12 mm have a positive impact on the surface quality and chip formation (thin chips). Scour wear is thereby minimized. Generally, a large corner radius offers a higher cutting edge stability and as a result, a longer service life.

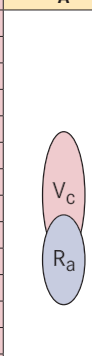
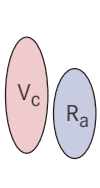
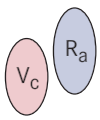
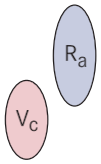
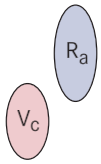
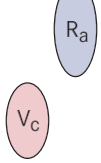
Machining parameters for CBN cutting materials - ABC-10
Grey cast iron GG20 - GG25 - GG30 - GG40

V_c: m/min		Cutting edge design (negative chamfer)								
		A	B	C	D	E	F	G	H	
Cutting speed ↑↑↑	1750	V_c	V_c	V_c	V_c	V_c	V_c	V_c	V_c	
	1500									
	1250									
	1000									
	750									
	500									
	300									
Feed		f: 0.02-0.25	f: 0.04-0.25	f: 0.05–0.25	f: 0.05-0.4	f: 0.06-0.5	f: 0.08-0.35	f: 0.1-0.35	f: 0.12-0.35	Feed
Cutting depth ABC-10		a_p: 0.02-0.25	a_p: 0.03-0.3	a_p: 0.06-0.4	a_p: 0.06-0.4	a_p: 0.08-0.5	a_p: 0.08-0.4	a_p: 0.1–0.4	a_p: 0.12–0.4	Cutting depth ABC-10
Cutting conditions		Smooth to strongly interrupted cut								Cutting conditions

Machining parameters for CBN cutting materials - ABC-25 / ABC-25B

V_c: m/min	Cutting edge design (negative chamfer)								R_a (µm)
	A	B	C	D	E	F	G	H	
Cutting speed ↑↑↑ 350 / 300 / 250 / 200 / 150 / 100 / 50									0.1 µm / 0.2 µm / 0.4 µm / 0.8 µm / 1.6 µm / 3.2 µm / 6.4 µm ↑↑↑ Surface quality
Feed	f: 0.02–0.15	f: 0.03-0.15	f: 0.04-0.20	f: 0.05–0.25	f: 0.06-0.25	f: 0.06-0.25	f: 0.06-0.20	f: 0.06-0.20	Feed
Cutting depth ABC-25B	a_p: 0.04-0.25	a_p: 0.04-0.3	a_p: 0.06-0.4	a_p: 0.06-0.4	a_p: 0.08-0.4	a_p: 0.08-0.4	a_p: 0.1–0.4	a_p: 0.12–0.4	Cutting depth ABC-25B
Cutting depth ABC-25	a_p: 0.04-0.25			a_p: 0.06-0.4					Cutting depth ABC-25
Cutting conditions	Smooth cut								Cutting conditions

Machining parameters for CBN cutting materials - ABC-40 / ABC-40B

V_c: m/min	Cutting edge design (negative chamfer)								R_a (µm)
	A	B	C	D	E	F	G	H	
Cutting speed ↑↑↑ 350 / 300 / 250 / 200 / 150 / 100 / 50									0.1 µm / 0.2 µm / 0.4 µm / 0.8 µm / 1.6 µm / 3.2 µm / 6.4 µm ↑↑↑ Surface quality
Feed	f: 0.02-0.12	f: 0.03-0.15	f: 0.04-0.20	f: 0.06-0.20	f: 0.06-0.25	f: 0.06-0.25	f: 0.08-0.20	f: 0.08-0.20	Feed
Cutting depth ABC-40B	a_p: 0.05–0.25	a_p: 0.06-0.3	a_p: 0.08-0.3	a_p: 0.08-0.3	a_p: 0.10-0.4	a_p: 0.10-0.4	a_p: 0.15-0.4	a_p: 0.20-0.4	Cutting depth ABC-40B
Cutting depth ABC-40	a_p: 0.04-0.25				a_p: 0.07-0.4				Cutting depth ABC-40
Cutting conditions	Very low		Light		Medium		Strong		Cutting conditions
Cutting conditions	Interrupted cut								Cutting conditions

ATORN® CBN indexable inserts ABC 10 single-tipped

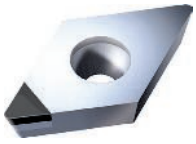
For application in cast iron and special alloys



Ident. No. 001–062



Ident. No. 067–119



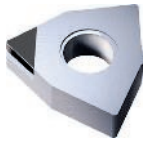
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Ident. No. 301–312



Ident. No. 601–619



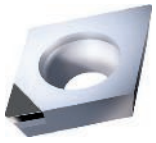
Ident. No. 818–831

Cutting material	CBN		CBN	
Type of cutting material	ABC10/A		ABC10/F	
Machining conditions for indexable insert	Good | Unfavourable		Good | Unfavourable	
Design of the chamfer	A (sharp)		F (chamfered)	
Materials group	K (primary application) | S (secondary application)		K (primary application) | S (secondary application)	
Vc in cast iron ●	800-1000 m/min		700-1200 m/min	
Vc in special alloys ●	250-700 m/min		180-450 m/min	
min./max. ap	0.02-0.25 mm		0.08-0.4 mm	
f min./max.	0.02-0.25 mm/U		0.08-0.35 mm/U	
ISO name	17871... Ident. No.		17871... Ident. No.	
CCGW 060202	001	●	002	●
CCGW 060204	011	○	012	○
CCGW 060208	018	●	019	●
CCGW 09T304	021	●	022	●
CCGW 09T308	031	○	032	●
CCGW 120404	041	●	042	○
CCGW 120408	061	●	062	●
CNGA 120404	101	●	102	○
CNGA 120408	111	●	112	●
CNGA 120412	118	●	119	●
CNGA 120402	067	●	068	●
DCGW 070202	201	●	202	○
DCGW 070204	211	○	212	●
DCGW 070208	218	●	219	●
DCGW 11T302	221	○	222	●
DCGW 11T304	231	●	232	●
DCGW 11T308	241	●	242	●
DNGA 150604	301	●	302	○
DNGA 150608	311	●	312	○
TNGA 160404	601	○	602	●
TNGA 160408	611	●	612	○
TNGA 160412	618	●	619	●
WNGA 080404	818	●	819	●
WNGA 080408	824	●	825	●
WNGA 080412	830	●	831	●

Prod. Gr. 144

ATORN® CBN indexable inserts ABC 25/40 single-tipped

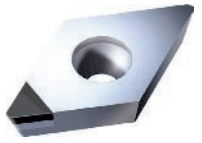
for use on hardened steel



Ident. No. 003–066



Ident. No. 069–123



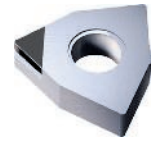
Ident. No. 203–247



Ident. No. 303–317



Ident. No. 603–623



Ident. No. 820–835

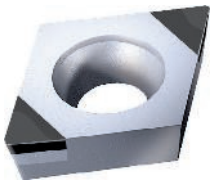
Cutting material	CBN		CBN		CBN		CBN	
Type of cutting material	ABC25/A		ABC25/D		ABC40/A		ABC40/E	
Machining conditions for indexable insert	Good		Good		Unfavourable		Unfavourable	
Design of the chamfer	A (sharp)		D (chamfered)		A (sharp)		E (chamfered)	
Materials group	P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)	
Vc in steel ●	100-300 m/min		170-260 m/min		100-300 m/min		110-200 m/min	
Vc in hardened steel ●	100-300 m/min		120-220 m/min		100-300 m/min		110-200 m/min	
min./max. ap	0.04-0.25 mm		0.04-0.25 mm		0.05-0.25 mm		0.10-0.40 mm	
f min./max.	0.02-0.15 mm/U		0.06-0.40 mm/U		0.02-0.12 mm/U		0.06-0.25 mm/U	
ISO name	17871... Ident. No.		17871... Ident. No.		17871... Ident. No.		17871... Ident. No.	
CCGW 060202	003	●	004	●	006	●	007	●
CCGW 060204	013	●	014	●	016	●	017	●
CCGW 060208	020	●	026	●	027	●	028	●
CCGW 09T304	023	●	024	●	046	●	047	●
CCGW 09T308	033	●	034	●	048	●	049	●
CCGW 120404	043	●	044	●	050	●	060	●
CCGW 120408	063	●	064	●	065	●	066	●
CNGA 120404	103	●	104	●	106	●	107	●
CNGA 120408	113	●	114	●	116	●	117	●
CNGA 120412	120	●	121	●	122	●	123	●
CNGA 120402	069	●	070	●	071	●	072	●
DCGW 070202	203	●	204	●	206	●	207	●
DCGW 070204	213	●	214	●	216	●	217	●
DCGW 070208	220	●	226	●	227	●	228	●
DCGW 11T302	223	●	224	●	229	●	230	●
DCGW 11T304	233	●	234	●	236	●	237	●
DCGW 11T308	243	○	244	●	246	●	247	●
DNGA 150604	303	●	304	●	306	●	307	●
DNGA 150608	313	○	314	●	316	●	317	●

Cutting material	CBN		CBN		CBN		CBN	
Type of cutting material	ABC25/A		ABC25/D		ABC40/A		ABC40/E	
Machining conditions for indexable insert	Good		Good		Unfavourable		Unfavourable	
Design of the chamfer	A (sharp)		D (chamfered)		A (sharp)		E (chamfered)	
Materials group	P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)	
Vc in steel ●	100-300 m/min		170-260 m/min		100-300 m/min		110-200 m/min	
Vc in hardened steel ●	100-300 m/min		120-220 m/min		100-300 m/min		110-200 m/min	
min./max. ap	0.04-0.25 mm		0.04-0.25 mm		0.05-0.25 mm		0.10-0.40 mm	
f min./max.	0.02-0.15 mm/U		0.06-0.40 mm/U		0.02-0.12 mm/U		0.06-0.25 mm/U	
ISO name	17871... Ident. No.		17871... Ident. No.		17871... Ident. No.		17871... Ident. No.	
TNGA 160404	603	●	604	●	606	●	607	●
TNGA 160408	613	●	614	○	616	●	617	●
TNGA 160412	620	●	621	●	622	●	623	●
WNGA 080404	820	●	821	●	822	●	823	●
WNGA 080408	826	●	827	●	828	●	829	●
WNGA 080412	832	●	833	●	834	●	835	●

Prod. Gr. 144

ATORN® CBN indexable inserts ABC 10 double-tipped

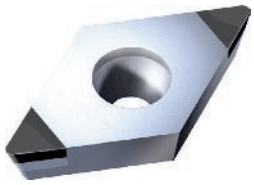
For application in cast iron and special alloys



Ident. No. 002–128



Ident. No. 152–196



Ident. No. 212–316



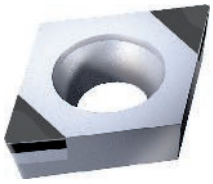
Ident. No. 332–356

Cutting material	CBN		CBN		CBN	
Type of cutting material	ABC10B/A		ABC10B/E		ABC10B/G	
Machining conditions for indexable insert	Good | Unfavourable		Good | Unfavourable		Good | Unfavourable	
Design of the chamfer	A (sharp)		E (chamfered)		G (chamfered)	
Materials group	K (primary application) | S (secondary application)		K (primary application) | S (secondary application)		K (primary application) | S (secondary application)	
Vc in cast iron ●	800-1000 m/min		200-480 m/min		180-450 m/min	
Vc in special alloys ●	250-700 m/min		750-1350 m/min		700-1000 m/min	
min./max. ap	0.02-0.25 mm		0.08-0.5 mm		0.08-0.4 mm	
f min./max.	0.02-0.25 mm/U		0.08-0.5 mm/U		0.08-0.35 mm/U	
ISO name	17872... Ident. No.		17872... Ident. No.		17872... Ident. No.	
CCGW 060202	002	●	004	●	006	●
CCGW 060204	022	●	024	●	026	●
CCGW 060208	052	●	054	●	056	●
CCGW 09T302	072	●	074	●	076	●
CCGW 09T304	092	●	094	●	096	●
CCGW 09T308	122	●	124	●	128	●
CNGA 120404	152	●	-	-	156	●
CNGA 120408	172	●	-	-	176	●
CNGA 120412	192	●	-	-	196	●
DCGW 070202	212	●	214	●	216	●
DCGW 070204	232	●	234	●	236	●
DCGW 070208	252	●	254	●	256	●
DCGW 11T302	272	●	274	●	276	●
DCGW 11T304	292	●	294	●	296	●
DCGW 11T308	312	●	314	●	316	●
DNGA 150604	332	●	335	●	336	●
DNGA 150608	352	●	354	●	356	●

Prod. Gr. 1BA

ATORN® CBN indexable inserts ABC 25/40 coated, double-tipped

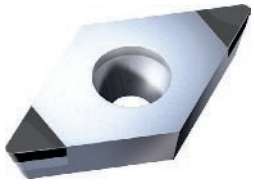
for use on hardened steel



Ident. No. 008–142



Ident. No. 158–206



Ident. No. 218–328



Ident. No. 338–368

Cutting material	CBN		CBN		CBN		CBN		CBN		CBN		CBN	
Type of cutting material	ABC25B/A		ABC25B/D		ABC25B/F		ABC40B/A		ABC40B/E		ABC40B/G		ABC40B/A	
Machining conditions for indexable insert	Good		Good		Good		Unfavourable		Unfavourable		Unfavourable		Unfavourable	
Design of the chamfer	A (sharp)		D (chamfered)		F (chamfered)		A (sharp)		E (chamfered)		G (chamfered)		A (sharp)	
Materials group	P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)	
Vc in steel ●	100-300 m/min		170-260 m/min		120-200 m/min		100-300 m/min		110-200 m/min		70-180 m/min		100-300 m/min	
Vc in hardened steel ●	100-300 m/min		170-260 m/min		120-200 m/min		120-300 m/min		110-200 m/min		70-180 m/min		120-300 m/min	
min./max. ap	0.04-0.25 mm		0.04-0.25 mm		0.04-0.40 mm		0.05-0.40 mm		0.10-0.40 mm		0.15-0.40 mm		0.05-0.40 mm	
f min./max.	0.02-0.15 mm/U		0.06-0.40 mm/U		0.06-0.25 mm/U		0.04-0.25 mm/U		0.06-0.25 mm/U		0.08-0.20 mm/U		0.04-0.25 mm/U	
ISO name	17872... Ident. No.		17872... Ident. No.		17872... Ident. No.		17872... Ident. No.		17872... Ident. No.		17872... Ident. No.		17872... Ident. No.	
CCGW 060202	008	●	010	●	012	●	014	●	016	●	018	●	-	-
CCGW 060204	028	●	030	●	032	●	034	●	036	●	038	●	-	-
CCGW 060208	058	●	060	●	062	●	064	●	066	●	068	●	-	-
CCGW 09T302	078	●	080	●	082	●	084	●	086	●	088	●	-	-
CCGW 09T304	098	●	100	●	102	●	104	●	106	●	110	●	-	-
CCGW 09T308	130	●	132	●	136	●	138	●	140	●	142	●	-	-
CNGA 120404	158	●	160	●	-	-	164	●	166	●	-	-	-	-
CNGA 120408	178	●	180	●	-	-	184	●	186	●	-	-	-	-
CNGA 120412	198	●	200	●	-	-	204	●	206	●	-	-	-	-
DCGW 070202	218	●	220	●	222	●	224	●	225	●	228	●	-	-
DCGW 070204	238	●	240	●	242	●	244	●	246	●	248	●	-	-
DCGW 070208	258	●	260	●	262	●	264	●	266	●	268	●	-	-
DCGW 11T302	278	●	280	●	282	●	284	●	286	●	288	●	-	-
DCGW 11T304	298	●	300	●	302	●	304	●	306	●	308	●	-	-
DCGW 11T308	318	●	320	●	322	●	324	●	326	●	328	●	-	-
DNGA 150604	338	●	340	●	342	●	-	-	346	●	348	●	344	●
DNGA 150608	358	●	360	●	362	●	364	●	366	●	368	●	-	-
														Price/unit, €

Prod. Gr. 1BA

ATORN® CBN indexable inserts ABC 10, coated, 4-6 tips (sandwich)

For application in cast iron and special alloys



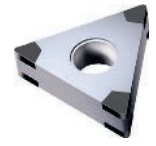
Ident. No. 004–048



Ident. No. 084–088



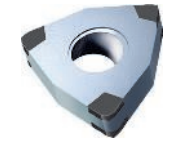
Ident. No. 104–128



Ident. No. 144–188



Ident. No. 204–228



Ident. No. 244–288

Cutting material	CBN		CBN		CBN	
Type of cutting material	ABC10B/A		ABC10B/E		ABC10B/G	
Machining conditions for indexable insert	Good | Unfavourable		Good | Unfavourable		Good | Unfavourable	
Design of the chamfer	A (sharp)		E (chamfered)		G (chamfered)	
Materials group	K (primary application) | S (secondary application)		K (primary application) | S (secondary application)		K (primary application) | S (secondary application)	
Vc in cast iron ●	800-1000 m/min		200-480 m/min		180-450 m/min	
Vc in special alloys ●	250-700 m/min		750-1350 m/min		700-1000 m/min	
min./max. ap	0.02-0.25 mm		0.08-0.5 mm		0.08-0.4 mm	
f min./max.	0.02-0.25 mm/U		0.08-0.5 mm/U		0.08-0.35 mm/U	
ISO name	17873... Ident. No.		17873... Ident. No.		17873... Ident. No.	
CNGA 120404	004	●	006	●	008	●
CNGA 120408	024	●	026	●	028	●
CNGA 120412	044	●	046	●	048	●
DNGA 150604	104	●	106	●	108	●
DNGA 150608	124	●	126	●	128	●
TNGA 160404	144	●	146	●	148	●
TNGA 160408	164	●	166	●	168	●
TNGA 160412	184	●	186	●	188	●
VNGA 160404	204	●	206	●	208	●
VNGA 160408	224	●	226	●	228	●
WNGA 080404	244	●	246	●	248	●
WNGA 080408	264	●	266	●	268	●
WNGA 080412	284	●	286	●	288	●

Prod. Gr. 1BA

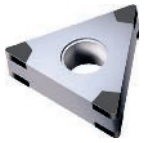
ATORN® CBN indexable inserts ABC 25/40, coated, 4-6 tips (sandwich)

for use on hardened steel

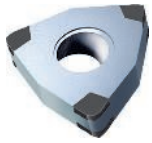

Ident. No. 010–060


Ident. No. 090–100


Ident. No. 110–140


Ident. No. 150–200

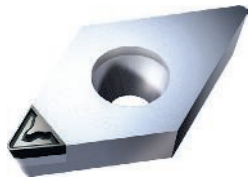

Ident. No. 210–240


Ident. No. 250–298

Cutting material	CBN		CBN		CBN		CBN		CBN		CBN	
Type of cutting material	ABC25B/A		ABC25B/D		ABC25B/F		ABC40B/A		ABC40B/E		ABC40B/G	
Machining conditions for indexable insert	Good		Good		Good		Unfavourable		Unfavourable		Unfavourable	
Design of the chamfer	A (sharp)		D (chamfered)		F (chamfered)		A (sharp)		E (chamfered)		G (chamfered)	
Materials group	P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)		P (primary application) | H (primary application)	
Vc in steel ●	100-300 m/min		170-260 m/min		120-200 m/min		100-300 m/min		110-200 m/min		70-180 m/min	
Vc in hardened steel ●	100-300 m/min		170-260 m/min		120-200 m/min		120-300 m/min		110-200 m/min		70-180 m/min	
min./max. ap	0.04-0.25 mm		0.04-0.25 mm		0.04-0.40 mm		0.05-0.40 mm		0.10-0.40 mm		0.15-0.40 mm	
f min./max.	0.02-0.15 mm/U		0.06-0.40 mm/U		0.06-0.25 mm/U		0.04-0.25 mm/U		0.06-0.25 mm/U		0.08-0.20 mm/U	
ISO name	**17873...** Ident. No.		**17873...** Ident. No.		**17873...** Ident. No.		**17873...** Ident. No.		**17873...** Ident. No.		**17873...** Ident. No.	
CNGA 120404	**090**	●	**092**	●	**094**	●	**096**	●	**098**	●	**100**	●
CNGA 120408	**030**	●	**032**	●	**034**	●	**036**	●	**038**	●	**040**	●
CNGA 120412	**050**	●	**052**	●	**054**	●	**056**	●	**058**	●	**060**	●
DNGA 150604	**110**	●	**112**	●	**114**	●	**116**	●	**118**	●	**120**	●
DNGA 150608	**130**	●	**132**	●	**134**	●	**136**	●	**138**	●	**140**	●
TNGA 160404	**150**	●	**152**	●	**154**	●	**156**	●	**158**	●	**160**	●
TNGA 160408	**170**	●	**172**	●	**174**	●	**176**	●	**178**	●	**180**	●
TNGA 160412	**190**	●	**192**	●	**194**	●	**196**	●	**198**	●	**200**	●
VNGA 160404	**210**	●	**212**	●	**214**	●	**216**	●	**218**	●	**220**	●
VNGA 160408	**230**	●	**232**	●	**234**	●	**236**	●	**238**	●	**240**	●
WNGA 080404	**250**	●	**252**	●	**254**	●	**256**	●	**258**	●	**260**	●
WNGA 080408	**270**	●	**272**	●	**274**	●	**276**	●	**278**	●	**280**	●
WNGA 080412	**289**	●	**292**	●	**294**	●	**296**	●	**298**	●	**290**	●

Prod. Gr. 1BA

Ultra-hard diamond cutting materials and their areas of application



with diamond as cutting material, the material groups of non-ferrous metals, plastics, graphite are machined primarily. as illustrated in the table, very high cutting speeds are possible with low wear.

material	cutting speed Vc (m/min)
aluminium and aluminium alloys 0 - 20% SiC	1250 – 5000
plastics	500 – 3000
non-ferrous metals, bronze, brass, copper	750 – 3200
GFK (80%)	300 – 800
graphite CFK (80%)	250 – 800
MMC	750 – 1300
GGC	300 – 600

Selection of the cutting material types when machining with PCD

Our standard range includes two cutting materials with the following properties:

ADC

- Polycrystalline diamond as a composite cutting material with a cemented carbide backing with high cutting sharpness and low cutting pressure in a narrow tolerance field
- Low wear resistance with high durability
- Fine grain
- Fine finishing and smoothing of all non-ferrous metals with low proportion of abrasive filler materials

ADC-S

- Polycrystalline diamond as a composite cutting material with a cemented carbide backing (coarse grain)
- With favourable cutting sharpness and low cutting pressure with narrow tolerances
- Low wear resistance with high durability
- Fine finishing and smoothing of all non-ferrous metals with low proportion of abrasive filler materials

A variety of diamond cutting materials are also available outside of our standard ranges:

MDC DM

Solid mono-crystalline diamond without structure. Absolute cutting edge sharpness and cutting edges without notches, thus virtually no cutting pressure (burr-free) and compliance with narrowest of tolerances ± 0.001 mm. Absolute wear resistance and highest thermal conductivity (HSC and HPC), low toughness. Super finishing of all non-ferrous metals and non-ferrous materials without abrasive fillers (HSC high-tech).

TFC PD

Solid poly-crystalline CVD diamond without binding agent or cemented carbide backing. Perfect cutting edge sharpness and cutting edges free of notches. No cutting pressure and compliance with the narrowest of tolerances. Maximum wear resistance and very high thermal conductivity (HSC and HPC), higher toughness. Super finishing up to semi-finish of all non-ferrous metals and non-ferrous composite materials with high proportions of abrasive fillers. Maximum service life with GFRP (80% glass) and CFRP.

PDC-CU-S DP composite

Solid poly-crystalline diamond cutting material (composite) without cemented carbide backing, coarse grain, favourable cutting edge sharpness and low cutting pressure for narrow tolerances, highly suitable for milling tools with high cutting depths. Very high wear resistance with increased toughness due to very high diamond volume. Fine finishing, finishing and milling of all non-ferrous metals and non-ferrous materials with very high proportions of abrasive fillers. Maximum material removal rate, CFRP and GFRP

Chip breaker and cutting edge designs with diamond cutting materials

A variety of diamond cutting materials are also available outside of our standard ranges:

Neutral

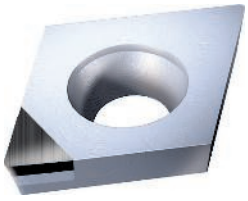
- Medium cutting pressure for solid or robust workpieces in the narrowest tolerance field with excellent surface quality
- Long continuous chips produced and no chip breaking

X1

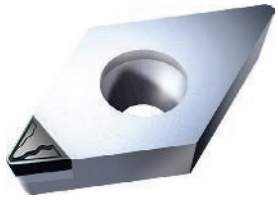
- Virtually no cutting pressure for thin-walled or robust workpieces in narrow tolerance field with medium surface quality
- Favourable chip breaking owing to chip breaker geometry

X2

- Increased cutting pressure for solid or robust workpieces in narrowest tolerance field with good surface quality
- Favourable chip breaking owing to chip breaker geometry

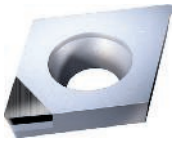




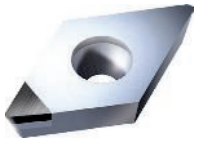


Cutting radius (mm)	X1				X2			
	ap (mm)		f (mm/U)		ap (mm)		f (mm/U)	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
0,1	0,05	0,30	0,02	0,05				
0,2	0,06	0,40	0,03	0,08	0,50	0,80	0,08	0,12
0,4	0,10	0,80	0,04	0,15	0,60	1,50	0,08	0,20
0,8	0,15	1,00	0,08	0,20	0,70	1,50	0,15	0,30
1,2	0,30	1,50	0,12	0,25	0,80	2,00	0,20	0,40

ATORN® PCD indexable inserts
Neutral version


Ident. No. 005–045, 900–904


Ident. No. 105–115, 906


Ident. No. 205–245, 908


Ident. No. 305–315

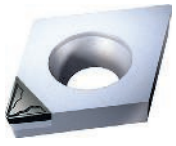

Ident. No. 605–615, 910

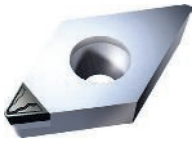

Ident. No. 805–815

	Cutting material	PCD	
	Type of cutting material	ADC,neutral	
	Machining conditions for indexable insert	Good	
	Design of the chamfer	Neutral	
	Materials group	N (primary application)	
	Vc in non-ferrous metals ●	1200-5000 m/min	
	min./max. ap	0.05-3.5 mm	
	f min./max.	0.05-0.5 mm/U	
ISO name		17871... Ident. No.	
CCGW 060202		005	●
CCGW 060204		015	○
CCGW 09T304		025	●
CCGW 09T308		035	●
CCGW 120404		045	●
CCGW 060208		900	●
CCGW 09T302		902	●
CCGW 120408		904	●
CNGA 120404		105	●
CNGA 120408		115	●
CNGA 120412		906	●
DCGW 070202		205	●
DCGW 070204		215	●
DCGW 070208		908	●
DCGW 11T302		225	●
DCGW 11T304		235	●
DCGW 11T308		245	○
DNGA 150604		305	○
DNGA 150608		315	●
TNGA 160404		605	●
TNGA 160408		615	○
TNGA 160412		910	●
VNGA 160404		805	●
VNGA 160408		815	○

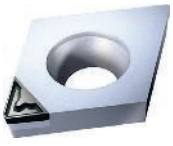
Prod. Gr. 144

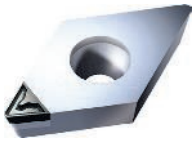
ATORN® PCD indexable inserts
Chip breaker geometry


Ident. No. 912–926


Ident. No. 928–940


Ident. No. 942–950, 990–998


Ident. No. 960–974


Ident. No. 976–988

	Cutting material	PCD		PCD	
	Type of cutting material	ADC,X1		ADC-S,X2	
	Machining conditions for indexable insert	Good		Good	
	Design of the chamfer	X1		X2	
	Materials group	N (primary application)		N (primary application)	
	Vc in non-ferrous metals ●	1200-5000 m/min		1200-5000 m/min	
	min./max. ap	0.05-3.5 mm		0.05-3.5 mm	
	f min./max.	0.05-0.5 mm/U		0.05-0.5 mm/U	
ISO name		17871... Ident. No.		17871... Ident. No.	
CCGT 060202..		912	●	960	●
CCGT 060204..		914	●	962	●
CCGT 060208		916	●	964	●
CCGT 09T302		918	●	966	●
CCGT 09T304		920	●	968	●
CCGT 09T308		922	●	970	●
CCGT 120404..		924	●	972	●
CCGT 120408		926	●	974	●
DCGT 070202		928	●	976	●
DCGT 070204		930	●	978	●

Cutting material	PCD		PCD	
Type of cutting material	ADC,X1		ADC-S,X2	
Machining conditions for indexable insert	Good		Good	
Design of the chamfer	X1		X2	
Materials group	N (primary application)		N (primary application)	
Vc in non-ferrous metals ●	1200-5000 m/min		1200-5000 m/min	
min./max. ap	0.05-3.5 mm		0.05-3.5 mm	
f min./max.	0.05-0.5 mm/U		0.05-0.5 mm/U	
ISO name	17871... Ident. No.		17871... Ident. No.	
DCGT 070208	932	●	980	●
DCGT 11T302	934	●	982	●
DCGT 11T304	936	●	984	●
DCGT 11T308	938	●	986	●
VBGT 160404	940	●	988	●
VBGT 160408	942	●	990	●
VCGT 110302	944	●	992	●
VCGT 110304	946	●	994	●
VCGT 160404	948	●	996	●
VCGT 160408	950	●	998	●

Prod. Gr. 144

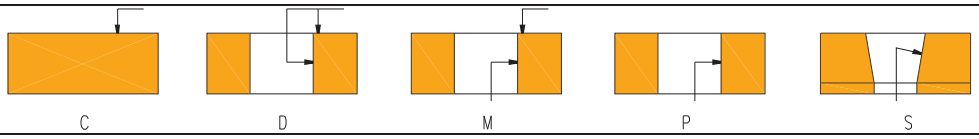


Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

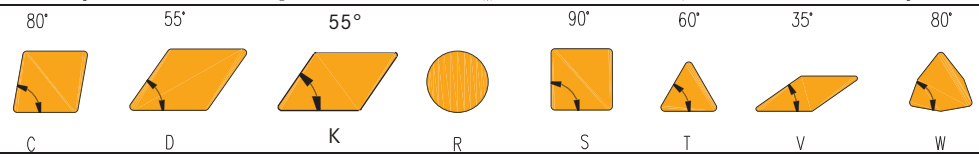
clamp holder for turning for outside machining
clamp system, dimensions and tolerances

Designations
Clamping holder for turning according to DIN 4983

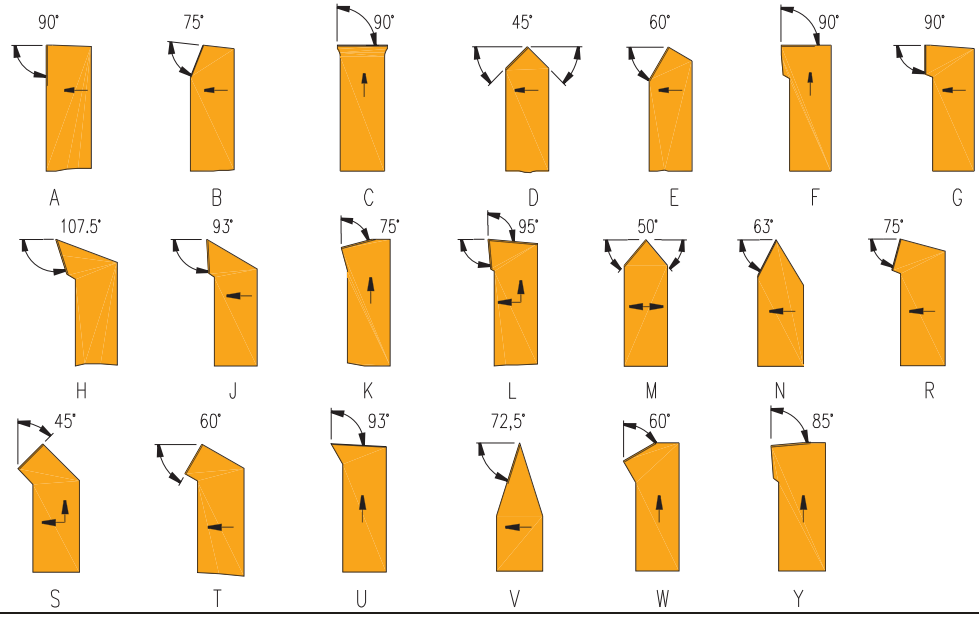
Clamping system ①



Insert shape ②



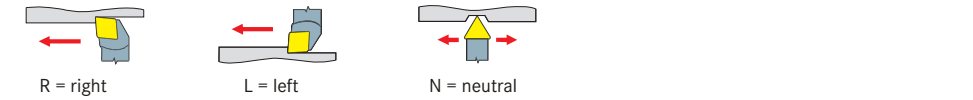
Holder shape ③



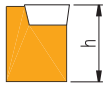
Clearance angle indexable insert ④



Cut direction ⑤



Cut direction ⑥



As basic number, the height of the cutter edge h in mm is indicated.
For clamping holders, the height of the cutter edge h equals the shank height.

Shank width ⑦



Clamping holder: Indication of the shank width b in mm.

Holder length ⑧

	A	B	C	D	E	F	G	H	J	K	L	M	N
mm	32	40	50	60	70	80	90	100	110	125	140	150	160

	P	Q	R	S	T	U	V	W	X	Y	–
mm	170	180	200	250	300	350	400	450		500	

Cutter length ⑨

Indication of the cutter length in mm without decimal point, in case of one-digit numerals with leading 0 (e. g. 08).
In case of round indexable inserts, the diameter is always indicated.

Additional indications

These indications do not form part of the standard and are facultative, e. g. "-U" stands: with shim.

Example

①	②	③	④	⑤	⑥	⑦	⑧	⑨
S	C	L	C	R	16	16	H	09

high-performance clamp holder range with internal cooling







the newly developed ATORN high-performance clamp holders ensure an improvement in service life of up to 30 % in series production.

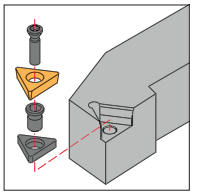
the advantages include:

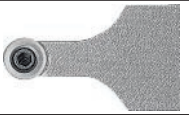
- three cooling channels directed straight at the cutting edges, ensuring optimum cooling of the cutting edge and excellent chip breaking
- individual connection options (bore hole in bottom of holder or connection with coolant hose)
- very compact holder design providing good access to the component and reliable chip removal

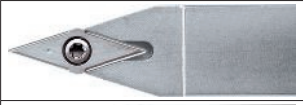
17830700-725	SCLC clamp holder with internal cooling, positive For facing and longitudinal turning using CC indexable inserts	
17835700-725	SDJC clamp holder with internal cooling, positive for longitudinal and copy turning with DC indexable insert	
17833700-735	SVJC clamp holder with internal cooling, positive For copy, longitudinal face lathing with VC indexable insert	
17837705-730	PCLN clamp holder with internal cooling, negative For facing and longitudinal turning using CN indexable inserts	
17838705-730	PDJN clamp holder with internal cooling, negative for copy and longitudinal lathing with DN indexable insert	
17839715-730	PWLN clamp holder with internal cooling, negative For copy and longitudinal face turning using WN indexable inserts	

clamp holder external – clamping system S
for positive indexable inserts with hole

clamping positive indexable inserts which are pulled into the insert setting via a central clamping screw. modern and reliable clamping system for positive lathe machining. the advantage of this system is the high level of accessibility due to the compact design. chips can be removed reliably with this system.

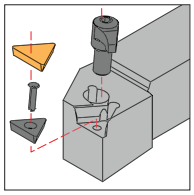


17830012-092	SCLC clamp holder positive, right-hand For face and longitudinal turning with CC indexable insert	
17835001-041	SDHC clamp holder, positive, right For copy and longitudinal turning with DC indexable insert	
17831012-072	SDJC clamp holder positive, right-hand For longitudinal and copy turning with DC indexable insert	
17861	SDNC clamp holder, positive, neutral For longitudinal turning with DC indexable insert	
17924	SRDC clamp holder, positive, neutral For copy, longitudinal face lathing with RC indexable insert	
17834012-062	SSSC clamp holder positive, right-hand For copy, longitudinal face lathing with SC indexable insert	

17834110-125	STGC Clamp holder, positive, right For longitudinal turning with TC indexable insert	
17836002-041	SVHC clamp holder, positive, right For copy, longitudinal and face turning with VC indexable insert	
17836110-115	SVJB clamp holder, positive, right For copy, longitudinal and face turning with VB indexable insert	
17833012-062	SVJC clamp holder positive, right-hand For copying, longitudinal and face turning with VC indexable insert	
17836200-205	SVVB clamp holder, positive neutral For copy and longitudinal face turning using VB indexable inserts	
17832	SVVC clamp holder positive, neutral For copying, longitudinal and face turning with VC indexable insert	

clamp holder external - clamping system C
for positive indexable inserts without hole

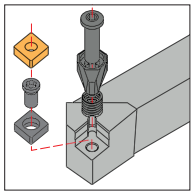
clamping positive indexable inserts without hole. classic clamping system for positive indexable inserts in sinter versions with and without chip breaker.

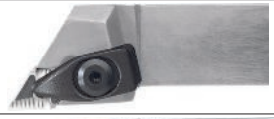
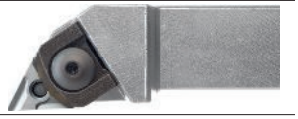


17825010-030	CKJN clamp holder, negative, right For copy, longitudinal and face turning with KNUX indexable insert	

clamp holder external - clamping system D
for negative indexable inserts with hole

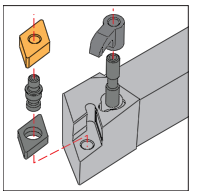
clamping negative indexable inserts using clamping lever and adjustable clamp. the system avoids vibrations of the indexable insert at high feed rate or with severely interrupted machining.

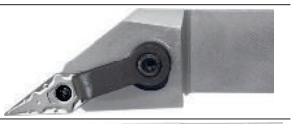
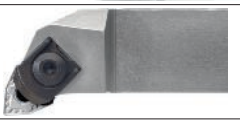


17826010-021	DCLN clamp holder, negative, right For face and longitudinal turning with CN indexable insert	
17826100-115	DDJN clamp holder, negative, right For copy and longitudinal turning with DN indexable insert	
17859001-002	MTEN clamp holder, negative, neutral For copy and longitudinal turning with TN indexable insert	
17859010-015	MTJN clamp holder, negative, right For copy and longitudinal turning with TN indexable insert	

clamp holder external - clamping system M
for negative indexable inserts with hole

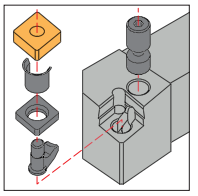
clamping negative indexable inserts using clamping lever and adjustable clamp. the system minimises vibration of the indexable insert. it is the first choice for negative ceramic inserts with central hole and also for cermet indexable inserts.



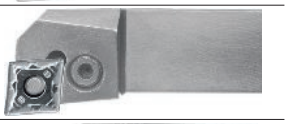
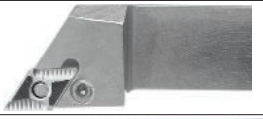
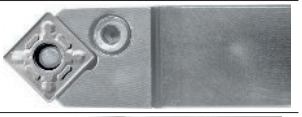
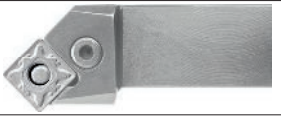
17859110-120	MVJN clamp holder, negative, right For copy and longitudinal turning with VN indexable insert	
17859200-205	MVVN clamp holder, negative, neutral For copy and longitudinal turning with VN indexable insert	
17860020-060	MWLN clamp holder, negative, right For copy, longitudinal and face turning with WN indexable insert	

clamp holder external - clamping system P
for negative indexable inserts with hole

clamping negative indexable inserts using clamping lever. clamping system P allows a wide range of applications. it is the first choice for general turning operations. the advantage of this system is the high level of accessibility due to the compact design. chips can be removed reliably with this system.



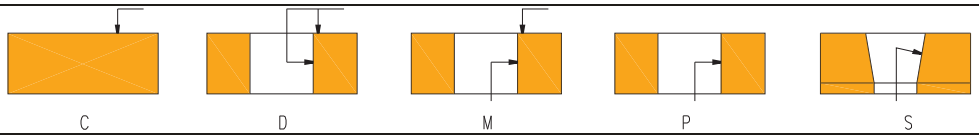
Overview of ISO clamp holders

17837110-130	PCBN clamp holder, negative, right For longitudinal turning using CN indexable insert	
17837210-220	PCKN clamp holder, negative, right For face turning using CN indexable insert	
17837001-057	PCLN clamp holder, negative, right For face and longitudinal turning with CN indexable insert	
17838001-061	PDJN clamp holder, negative, right For copy turning and longitudinal turning using DN indexable insert	
17856002-010	PDNN clamp holder, neutral For copy turning and longitudinal turning using DN indexable insert	
17857	PSNN clamp holder, neutral For chamfering and longitudinal turning using SN indexable insert	
17840020-040	PSNN clamp holder, right For copy turning and longitudinal turning using SN indexable insert	
17839011-031	PTGN clamp holder, right For copy turning and longitudinal turning using TN indexable insert	

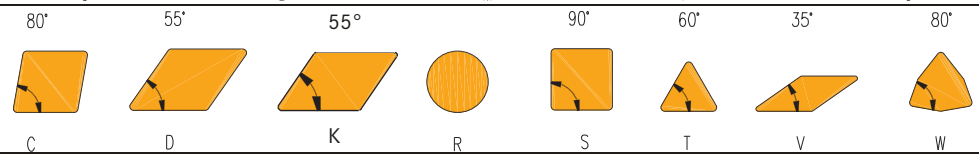
clamp holder for turning for outside machining
clamp system, dimensions and tolerances

Designations
Clamping holder for turning according to DIN 4983

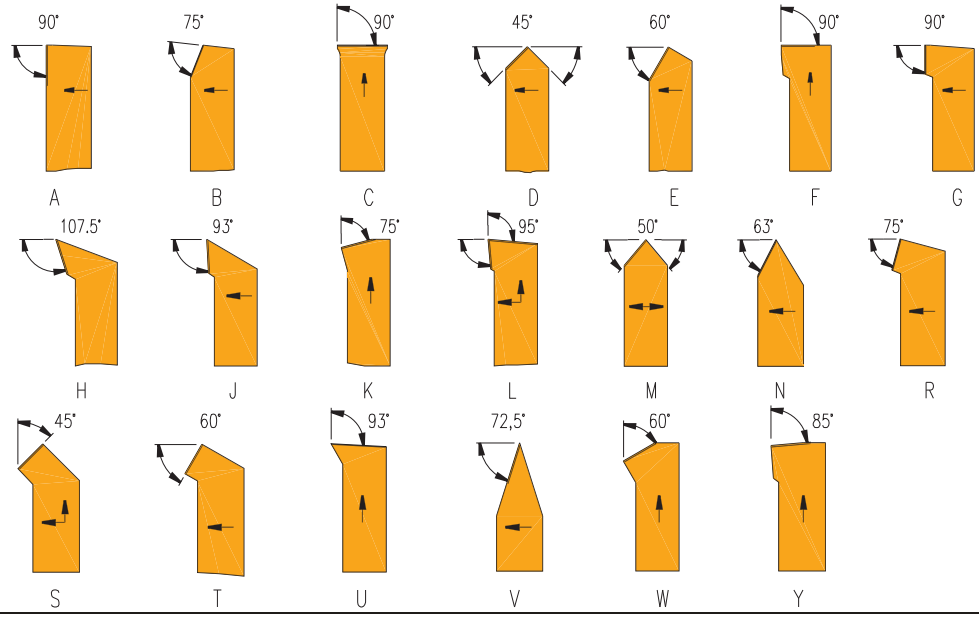
Clamping system ①



Insert shape ②



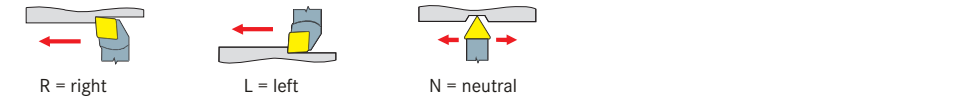
Holder shape ③



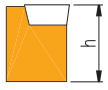
Clearance angle indexable insert ④



Cut direction ⑤



Cut direction ⑥



As basic number, the height of the cutter edge h in mm is indicated.
For clamping holders, the height of the cutter edge h equals the shank height.

Shank width ⑦



Clamping holder: Indication of the shank width b in mm.

Holder length ⑧

	A	B	C	D	E	F	G	H	J	K	L	M	N
mm	32	40	50	60	70	80	90	100	110	125	140	150	160

	P	Q	R	S	T	U	V	W	X	Y	–
mm	170	180	200	250	300	350	400	450		500	

Cutter length ⑨

Indication of the cutter length in mm without decimal point, in case of one-digit numerals with leading 0 (e. g. 08).
In case of round indexable inserts, the diameter is always indicated.

Additional indications

These indications do not form part of the standard and are facultative, e. g. "-U" stands: with shim.

Example

①	②	③	④	⑤	⑥	⑦	⑧	⑨
S	C	L	C	R	16	16	H	09

ATORN® SCLC R/L clamp holder, positive (DIN 4983)

For facing and longitudinal turning using CC indexable inserts

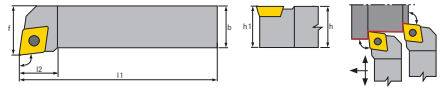
Application:
For face and longitudinal turning with CC indexable insert 80°

Execution:
- Precision-made steel carrier, burnished, hardened, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive body geometry ensures low cutting forces
- Very good surfaces, for medium and finishing infeed



Ident. No. 012, 022, 032, 042, 052, 062, 072, 086, 092



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17830... Ident. No.		Left 17830... Ident. No.	
SCLC R/L 0808 D06	8	8	60	9	10	CC.. 0602..	012	●	017	●
SCLC R/L 1010 E06	10	10	70	10	9	CC.. 0602..	022	●	027	●
SCLC R/L 1212 F09	12	12	80	15	16	CC.. 09T3..	032	●	037	●
SCLC R/L 1616 H09	16	16	100	15	17	CC.. 09T3..	042	●	047	●
SCLC R/L 2020 K09	20	20	125	17	25	CC.. 09T3..	052	●	057	●
SCLC R/L 2525 M09	25	25	150	20	32	CC.. 09T3..	062	●	067	●
SCLC R/L 1616 H12	16	16	100	20	32	CC.. 1204..	072	●	077	●
SCLC R/L 2020 K12	20	20	125	20	25	CC.. 1204..	086	●	091	●
SCLC R/L 2525 M12	25	25	150	20	32	CC.. 1204..	092	●	097	●

Prod. Gr. 107

ATORN® SDHC R/L clamp holder, positive (DIN 4983)

For copy and longitudinal lathing with DC indexable insert

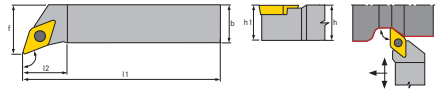
Application:
For copy and longitudinal turning with DC indexable insert, 55°

Execution:
- Precision-manufactured steel support, burnished, hardened, type D, working angle 107.5°, tip angle 55°, clearance angle 7°

Advantage:
- Streamlined geometry, optimised for contour lathe work
- Positive geometry for the body ensures low cutting forces
- Very good surface quality for medium infeed and finishing



Ident. No. 001, 011, 021, 031, 041



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17835... Ident. No.		Left 17835... Ident. No.	
SDHC R/L 1010 E07	10	10	70	5.5	12	DC.. 0702..	001	●	006	●
SDHC R/L 1212 F07	12	12	80	12	16	DC.. 0702..	011	●	016	●
SDHC R/L 1616 H11	16	16	100	20	10.4	DC.. 11T3..	021	●	026	●
SDHC R/L 2020 K11	20	20	125	14	25	DC.. 11T3..	031	●	036	●
SDHC R/L 2525 M11	25	25	150	20	32	DC.. 11T3..	041	●	046	●

Prod. Gr. 107

ATORN® SDJC R/L clamp holder, positive (DIN 4983)

For longitudinal and copy turning using DC indexable inserts

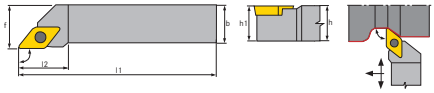
Application:
For longitudinal and copy turning with DC indexable insert 55°

Execution:
- Precision-made steel carrier, burnished, hardened, type D, attack angle 93°, tip angle 55°, clearance angle 7°

Advantage:
- Narrow geometry optimised for contour-turning work
- Positive body geometry ensures low cutting forces
- Very good surfaces, for medium and finishing infeed



Ident. No. 012, 022, 032, 052, 062, 072



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17831... Ident. No.		Left 17831... Ident. No.	
SDJC R/L 0808 D07	8	8	60	13	10	DC.. 0702..	012	●	017	●
SDJC R/L 1010 E07	10	10	70	13	12	DC.. 0702..	022	●	027	●
SDJC R/L 1212 F07	12	12	80	14.5	16	DC.. 0702..	032	●	037	●
SDJC R/L 1616 H11	16	16	100	20	20	DC.. 11T3..	052	●	057	●
SDJC R/L 2020 K11	20	20	125	20.5	25	DC.. 11T3..	062	●	067	●
SDJC R/L 2525 M11	25	25	150	21.5	32	DC.. 11T3..	072	●	077	●

Prod. Gr. 107

ATORN® SDNC clamp holder, positive neutral (DIN 4983)

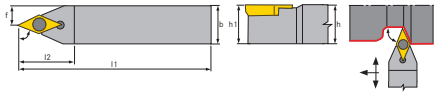
For copy and longitudinal lathing with DC indexable insert

Application:
For copy and longitudinal turning with DC indexable insert, 55°

Execution:
- Precision-manufactured steel support, burnished, hardened, type D, working angle 62.5°, tip angle 55°, clearance angle 7°

Advantage:
- Streamlined geometry, optimised for contour lathe work
- Positive geometry for the body ensures low cutting forces
- Very good surface quality for medium infeed and finishing





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Neutral 17861... Ident. No.	
SDNC N 0808 D07	8	8	60	16	4	DC.. 0702..	010	●
SDNC N 1010 E07	10	10	70	16	5	DC.. 0702..	015	●
SDNC N 1616 H11	16	16	100	22	8	DC.. 11T3..	020	●
SDNC N 2020 K11	20	20	125	22	10	DC.. 11T3..	025	●
SDNC N 2525 M11	25	25	150	22	12.5	DC.. 11T3..	030	●

Prod. Gr. 107

ATORN® SRDC clamp holder, positive neutral (DIN 4983)

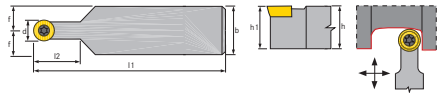
For copy and longitudinal lathing with RC indexable insert

Application:
For copy and longitudinal turning with RC indexable insert

Execution:
- Precision-manufactured steel support, burnished, hardened, type R

Advantage:
- Streamlined geometry, optimised for contour lathe work
- Positive geometry for the body ensures low cutting forces





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Neutral 17924... Ident. No.	
SRDC N 1212 F06	12	12	80	12.4	6	RC.. 0602..	005	●
SRDC N 1616 H06	16	16	100	12.4	8	RC.. 0602..	010	●
SRDC N 2020 K06	20	20	125	12.4	10	RC.. 0602..	015	●
SRDC N 2525 M06	25	25	150	12.4	12.5	RC.. 0602..	020	●
SRDC N 1616 H08	16	16	100	16.4	8	RC.. 1003..	025	●
SRDC N 2020 K08	20	20	125	16.4	10	RC.. 0803..	030	●
SRDC N 2525 M08	25	25	150	16.4	12.5	RC.. 0803..	035	●
SRDC N 1616 H10	16	16	100	20.3	8	RC.. 1003..	040	●
SRDC N 2020 K10	20	20	125	20.3	10	RC.. 1003..	045	●
SRDC N 2525 M10	25	25	150	20.3	12.5	RC.. 1003..	050	●

Prod. Gr. 107

ATORN® SSSC R clamp holder, positive (DIN 4983)

For facing and longitudinal turning using SC indexable inserts

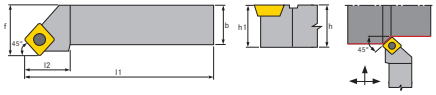
Application:
For face and longitudinal turning with SC indexable insert 90°

Execution:
- Precision-made steel carrier, burnished, hardened, type S, attack angle 45°, tip angle 90°, clearance angle 7°

Advantage:
- Rigid geometry for use in challenging conditions
- Positive body geometry ensures low cutting forces
- Very good surfaces, for medium and finishing infeed



Ident. No. 012, 022, 032, 042, 052, 062



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17834... Ident. No.		Left 17834... Ident. No.	
SSSC R/L 1212 F09	12	12	80	18	16	SC.. 09T3..	012	●	017	●
SSSC R/L 1616 H09	16	16	100	20	20	SC.. 09T3..	022	●	027	●
SSSC R/L 2020 K09	20	20	125	20	25	SC.. 09T3..	032	●	037	●
SSSC R/L 1616 H12	16	16	100	25	20	SC.. 1204..	042	●	047	●
SSSC R/L 2020 K12	20	20	125	25	25	SC.. 1204..	052	●	057	●
SSSC R/L 2525 M12	25	25	150	25	32	SC.. 1204..	062	●	067	●

Prod. Gr. 107

ATORN® STGC R/L clamp holder, positive (DIN 4983)

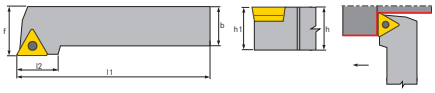
For longitudinal turning using TC indexable inserts

Application:
For face and longitudinal turning with TC indexable insert, 60°

Execution:
- Precision-manufactured steel support, burnished, hardened, type T, working angle 90°, tip angle 30°, clearance angle 7°

Advantage:
- Triple-edge geometry lowers cost per cut
- Positive geometry for the body ensures low cutting forces
- Very good surface quality for medium infeed and finishing





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17834... Ident. No.		Left 17834... Ident. No.	
STGC R/L 1212 F11	12	12	80	18	16	TC.. 1102..	110	●	111	●
STGC R/L 1616 H11	16	16	100	22	20	TC.. 1102..	115	●	116	●
STGC R/L 2020 K16	20	20	125	22	25	TC.. 16T3..	120	●	121	●
STGC R/L 2525 M16	25	25	150	22	32	TC.. 16T3..	125	●	126	●

Prod. Gr. 107

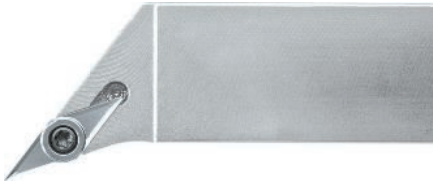
ATORN® SVHC R/L clamp holder, positive (DIN 4983)

For copy, longitudinal face lathing with VC indexable insert

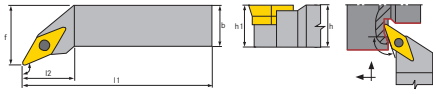
Application:
For copy, longitudinal and face turning with VC indexable insert, 35°

Execution:
- Precision-manufactured steel support, burnished, hardened, type V, working angle 107.5°, tip angle 35°, clearance angle 7°

Advantage:
- Very streamlined geometry, optimised for contour lathe work
- Positive geometry for the body ensures low cutting forces
- Very good surface quality for medium infeed and finishing



Ident. No. 002, 004, 011, 021, 031, 041



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17836... Ident. No.		Left 17836... Ident. No.	
SVHC R/L 1212 F11	12	12	80	11.4	16	VC.. 1103..	002	●	003	●
SVHC R/L 1616 H11	16	16	100	11.4	20	VC.. 1103..	004	●	005	●
SVHC R/L 2020 K11	20	20	125	14.6	25	VC.. 1103..	011	●	016	●
SVHC R/L 2525 M11	25	25	150	20.9	32	VC.. 1103..	021	●	026	●
SVHC R/L 2020 K16	20	20	125	13.2	25	VC.. 1604..	031	●	036	●
SVHC R/L 2525 M16	25	25	150	19.6	32	VC.. 1604..	041	●	046	●

Prod. Gr. 107

ATORN® SVJB R/L clamp holder, positive (DIN 4983)

For copy and longitudinal face turning using VB indexable inserts

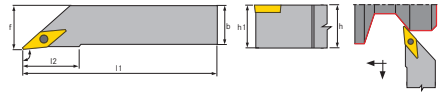
Application:
For copy, longitudinal and face turning with VB indexable insert, 35°

Execution:
- Precision-manufactured steel support, burnished, hardened, type V, working angle 93°, tip angle 35°, clearance angle 5°

Advantage:
- Very streamlined geometry, optimised for contour lathe work
- Positive geometry for the body ensures low cutting forces
- Very good surface quality for medium infeed and finishing



Ident. No. 110, 115



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17836... Ident. No.		Left 17836... Ident. No.	
SVJB R/L 2020 K16	20	20	125	37	25	VB.. 1604..	110	●	111	●
SVJB R/L 2525 M16	25	25	150	37	32	VB.. 1604..	115	●	116	●

Prod. Gr. 107

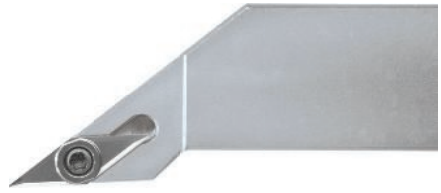
ATORN® SVJC R/L clamp holder, positive (DIN 4983)

For copy, longitudinal face lathing with VC indexable insert

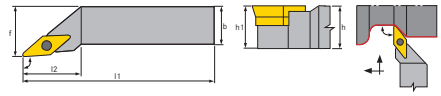
Application:
For copying, longitudinal and face turning with VC indexable insert 35°

Execution:
- Precision-manufactured steel support, burnished, hardened, type V, working angle 93°, tip angle 35°, clearance angle 7°

Advantage:
- Very narrow geometry optimised for contour-turning work
- Positive body geometry ensures low cutting forces
- Very good surfaces, for medium and finishing infeed



Ident. No. 012, 022, 032, 042, 052, 062



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17833... Ident. No.		Left 17833... Ident. No.	
SVJC R/L1212 F11	12	12	80	21.5	16	VC.. 1103..	012	●	017	●
SVJC R/L1616 H11	16	16	100	21.5	20	VC.. 1103..	022	●	027	●
SVJC R/L2020 K11	20	20	125	23	25	VC.. 1103..	032	●	037	●
SVJC R/L2525 M11	25	25	150	25.5	32	VC.. 1103..	042	●	047	●
SVJC R/L2020 K16	20	20	125	29.5	25	VC.. 1604..	052	●	057	●
SVJC R/L2525 M16	25	25	150	32.5	32	VC.. 1604..	062	●	067	●

Prod. Gr. 107

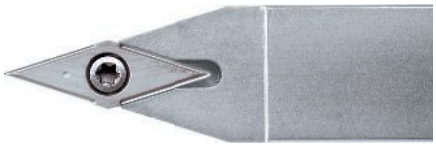
ATORN® SVVB clamp holder, positive neutral (DIN 4983)

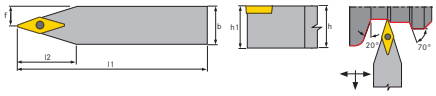
For copy and longitudinal lathing with VB indexable insert

Application:
For copy, longitudinal and face turning with VB indexable insert, 35°

Execution:
- Precision-manufactured steel support, burnished, hardened, type V, working angle 72.5°, tip angle 35°, clearance angle 5°

Advantage:
- Very streamlined geometry, optimised for contour lathe work
- Positive geometry for the body ensures low cutting forces
- Very good surface quality for medium infeed and finishing





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design: Suitable for indexable inserts	Neutral: 17836... Ident. No.	
SVVB N 2020 K16	20	20	125	37	10.6	VB.. 1604..	200	●
SVVB N 2525 M16	25	25	150	37	13.1	VB.. 1604..	205	●

Prod. Gr. 107

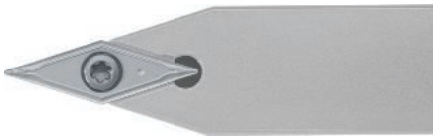
ATORN® SVVC clamp holder, positive neutral (DIN 4983)

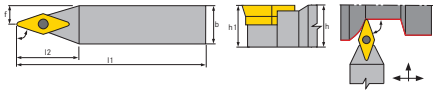
For copy, longitudinal face lathing with VC indexable insert

Application:
For copying, longitudinal and face turning with VC indexable insert 35°

Execution:
- Precision-manufactured steel support, burnished, hardened, type V, working angle 72.5°, tip angle 35°, clearance angle 7°

Advantage:
- Very narrow geometry optimised for contour-turning work
- Positive body geometry ensures low cutting forces
- Very good surfaces, for medium and finishing infeed





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design: Suitable for indexable inserts	Neutral: 17832... Ident. No.	
SVVC N 1212 F11	12	12	80	19	6	VC.. 1103..	011	●
SVVC N 1616 H11	16	16	100	25	8	VC.. 1103..	021	●
SVVC N 2020 K11	20	20	125	32	10	VC.. 1103..	025	●
SVVC N 2525 M11	25	25	150	40	12.5	VC.. 1103..	027	●
SVVC N 2020 K16	20	20	125	32	10	VC.. 1604..	033	●
SVVC N 2525 M16	25	25	150	40	12.5	VC.. 1604..	043	●

Prod. Gr. 107

ATORN® CKJN R/L clamp holder, negative (DIN 4983)

For copy and longitudinal face turning using KNUX indexable inserts

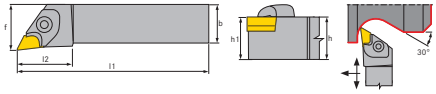
Application:
For copy, longitudinal and face turning with KNUX indexable insert, 55°

Execution:
- Precision-manufactured steel support, burnished, hardened, adjustable clamp, type K, working angle 93°, tip angle 55°, clearance angle 0°

Advantage:
- For copy, longitudinal and face turning particularly on low-performance machines
- Positive cutting geometry of the indexable insert ensures low cutting forces
- Broad range of use: suitable for both finishing and roughing operations



Ident. No. 010, 015, 020, 030



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17825... Ident. No.		Left 17825... Ident. No.	
CKJN R/L 2020 K16	20	20	125	34	30	KNUX 1604..	010	●	011	●
CKJN R/L 2525 M16	25	25	150	34	32	KNUX 1604..	015	●	016	●
CKJN R/L 3225 P16	32	25	170	34	32	KNUX 1604..	020	●	021	●
CKJN R/L 3232 P16	32	32	170	34	40	KNUX 1604..	030	●	031	●

Prod. Gr. 107

ATORN® DCLN R/L clamp holder, negative (DIN 4983)

For facing and longitudinal turning using CN indexable inserts

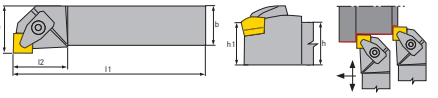
Application:
For face and longitudinal turning with CN indexable insert, 80°.

Execution:
- **Ident. No. 010, 015, 017, 019, 021:** Precision-manufactured steel support, burnished, hardened, adjustable clamping system, type C, working angle 95°, tip angle 80°, clearance angle 0°
- **Ident. No. 011, 016, 018, 020, 022:** Precision-manufactured steel support, burnished, hardened, adjustable clamp, adjustable clamping system, type C, working angle 95°, tip angle 80°, clearance angle 0°

Advantage:
- Universal use for face and longitudinal turning with large feed depths and unfavourable conditions
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations
- Adjustable clamp minimises vibrations and ensures good force transfer



Ident. No. 010, 015, 017, 019, 021



ISO name	h=h1 (mm)	b (mm)	l2 (mm)	l1 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17826... Ident. No.		Left 17826... Ident. No.	
DCLN R/L 2020 K12	20	20	28	125	25	CN.. 1204..	010	●	011	●
DCLN R/L 2525 M12	25	25	28	150	32	CN.. 1204..	015	●	016	●
DCLN R/L 3232 P12	32	32	28	170	40	CN.. 1906..	017	●	018	●
DCLN R/L 3232 P19	32	32	42	170	40	CN.. 1906..	019	●	020	●
DCLN R/L 4040 S19	40	40	43	250	50	CN.. 1906..	021	●	022	○

Prod. Gr. 107

ATORN® DDJN R/L clamp holder, negative (DIN 4983)

For copy and longitudinal lathing with DN indexable insert

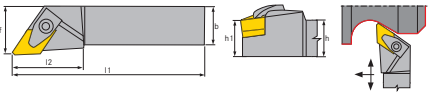
Application:
For copy and longitudinal turning with DN indexable insert, 55°.

Execution:
- Precision-manufactured steel support, burnished, hardened, adjustable clamping system, type D, working angle 93°, tip angle 55°, clearance angle 0°

Advantage:
- Streamlined geometry, optimised for contour lathe work with large feed depths and unfavourable conditions
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations
- Adjustable clamp minimises vibrations and ensures good force transfer



Ident. No. 100, 105, 110, 115



ISO name	h=h1 (mm)	b (mm)	l2 (mm)	l1 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17826... Ident. No.		Left 17826... Ident. No.	
DDJN R/L 2020 K11	20	20	30	125	25	DN.. 1104..	100	●	101	●
DDJN R/L 2525 M11	25	25	30	150	32	DN.. 1104..	105	●	106	●
DDJN R/L 2020 K15	20	20	34	125	25	DN.. 1506..	110	●	111	●
DDJN R/L 2525 M15	25	25	34	150	32	DN.. 1506..	115	●	116	●

Prod. Gr. 107

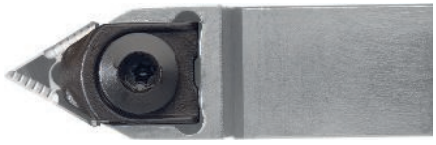
ATORN® MTEN clamp holder, negative neutral (DIN 4983)

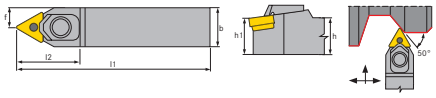
For copy and longitudinal lathing with TN indexable insert

Application:
For copy and longitudinal turning with TN indexable insert, 60°.

Execution:
- Precision-manufactured steel support, burnished, hardened, adjustable clamping system, type T, working angle 93°, tip angle 60°, clearance angle 0°

Advantage:
- Triple-edge geometry lowers cost per cut
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations
- Adjustable clamp minimises vibrations and ensures good force transfer





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design: Suitable for indexable inserts	Neutral: 17859... Ident. No.	
MTEN N 2020 K16	20	20	125	34	10.5	TN.. 1604..	001	●
MTEN N 2525 M16	25	25	150	34	13	TN.. 1604..	002	●

Prod. Gr. 107

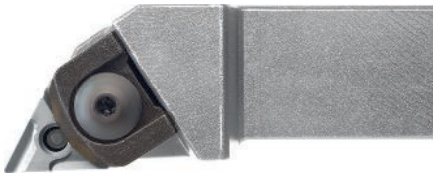
ATORN® MTJN R/L clamp holder, negative (DIN 4983)

For copy and longitudinal lathing with TN indexable insert

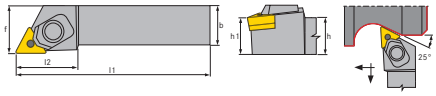
Application:
For copy, longitudinal and face turning with TN indexable insert, 60°.

Execution:
- Precision-manufactured steel support, burnished, hardened, adjustable clamping system, type T, working angle 93°, tip angle 60°, clearance angle 0°

Advantage:
- Triple-edge geometry lowers cost per cut
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations
- Adjustable clamp minimises vibrations and ensures good force transfer



Ident. No. 010, 015



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design: Suitable for indexable inserts	Right: 17859... Ident. No.		Left: 17859... Ident. No.	
MTJN R/L 2020 K16	20	20	125	35	25	TN.. 1604..	010	●	011	●
MTJN R/L 2525 M16	25	25	150	32	32	TN.. 1604..	015	●	016	●

Prod. Gr. 107

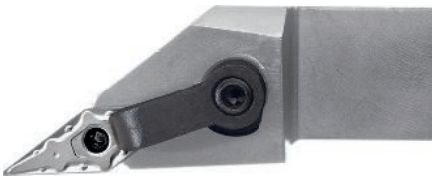
ATORN® MVJN R/L clamp holder, negative (DIN 4983)

For copy and longitudinal lathing with VN indexable insert

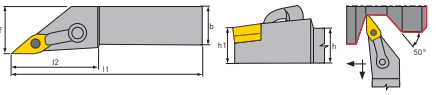
Application:
For copy and longitudinal turning with VN indexable insert, 35°.

Execution:
- Precision-manufactured steel support, burnished, hardened, adjustable clamping system, type V, working angle 93°, tip angle 35°, clearance angle 0°

Advantage:
- Very streamlined geometry, optimised for contour lathe work with large feed depths and unfavourable conditions
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations
- Adjustable clamp minimises vibrations and ensures good force transfer



Ident. No. 110, 115, 120



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17859... Ident. No.		Left 17859... Ident. No.	
MVJN R/L 2020 K16	20	20	125	37	25	VN.. 1604..	110	●	111	●
MVJN R/L 2525 M16	25	25	150	37	32	VN.. 1604..	115	●	116	●
MVJN R/L 3225 P16	32	25	170	43	32	VN.. 1604..	120	●	121	●

Prod. Gr. 107

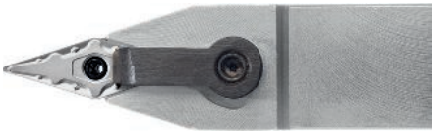
ATORN® MVVN clamp holder, negative neutral (DIN 4983)

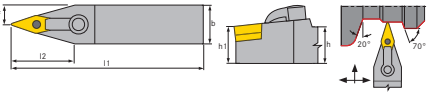
For copy and longitudinal turning using VN indexable inserts

Application:
For copy and longitudinal turning with VN indexable insert, 35°.

Execution:
- Precision-manufactured steel support, burnished, hardened, adjustable clamping system, type V, working angle 93°, tip angle 35°, clearance angle 0°

Advantage:
- Very streamlined geometry, optimised for contour lathe work with large feed depths and unfavourable conditions
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations
- Adjustable clamp minimises vibrations and ensures good force transfer





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Neutral 17859... Ident. No.	
MVVN N 2020 K16	20	20	125	43	10.0	VN.. 1604..	200	●
MVVN N 2525 M16	25	25	150	43	12.5	VN.. 1604..	205	●

Prod. Gr. 107

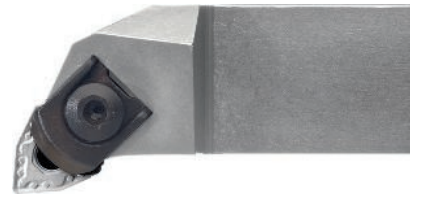
ATORN® MWLN R/L clamp holder, negative (DIN 4983)

For copy and longitudinal face turning using WN indexable inserts

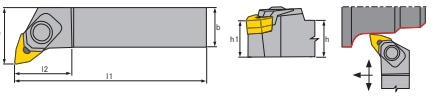
Application:
For copy, longitudinal and face turning with WN indexable insert, 80°.

Execution:
- Precision-manufactured steel support, burnished, hardened, adjustable clamping system, type W, working angle 93°, tip angle 80°, clearance angle 0°

Advantage:
- Triple-edge geometry lowers cost per cut
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations
- Adjustable clamp minimises vibrations and ensures good force transfer



Ident. No. 020, 030, 040, 050, 060



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17860... Ident. No.		Left 17860... Ident. No.	
MWLN R/L 2020 K06	20	20	125	25	25	WN.. 0604..	020	●	025	●
MWLN R/L 2525 M06	25	25	150	25	32	WN.. 0604..	030	●	035	●
MWLN R/L 2020 K08	20	20	125	34	25	WN.. 0804..	040	●	045	●
MWLN R/L 2525 M08	25	25	150	34	32	WN.. 0804..	050	●	055	●
MWLN R/L 3232 P08	32	32	170	-	40	WN.. 0804..	060	●	065	●

Prod. Gr. 107

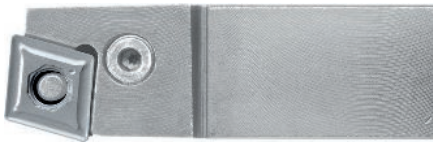
ATORN® PCBN R/L clamp holder, negative (DIN 4983)

For longitudinal turning using CN indexable inserts

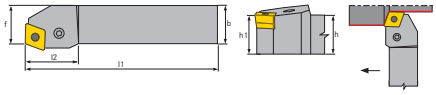
Application:
For longitudinal turning using CN indexable insert 80°.

Execution:
- precision-engineered steel support, burnished, hardened, toggle clamp system, type C, 75° pitch angle, 80° tip angle, 0° clearance angle

Advantage:
- extremely stable geometry for longitudinal machining with large feed depths and challenging conditions
- negative body geometry ensures good stability and absorption of force for large cutting depths



Ident. No. 110, 115, 120, 130



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17837... Ident. No.		Left 17837... Ident. No.	
PCBN R/L 2020 K12	20	20	125	28	22	CN.. 1204..	110	●	111	●
PCBN R/L 2525 M12	25	25	150	28	22	CN.. 1204..	115	●	116	●
PCBN R/L 2525 M16	25	25	150	34	22	CN.. 1606..	120	●	121	●
PCBN R/L 3232 P19	32	32	170	42	27	CN.. 1906..	130	●	131	●

Prod. Gr. 107

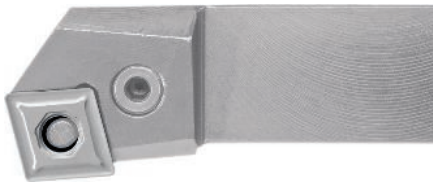
ATORN® PCKN R/L clamp holder, negative (DIN 4983)

For facing using CN indexable inserts

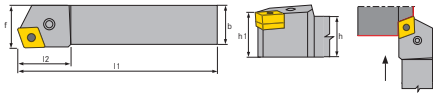
Application:
For face turning using CN indexable insert 80°.

Execution:
- precision-engineered steel support, burnished, hardened, toggle clamp system, type C, 75° pitch angle, 80° tip angle, 0° clearance angle

Advantage:
- very stable geometry for face turning with large feed depths and challenging conditions
- negative body geometry ensures good stability and absorption of force for large cutting depths
- **Ident. No. 211, 216, 221:** wide range of delivery: suitable for both finishing and roughing



Ident. No. 210, 215, 220



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17837... Ident. No.		Left 17837... Ident. No.	
PCKN R/L 2020 K12	20	20	125	28	25	CN.. 1204..	210	●	211	●
PCKN R/L 2525 M12	25	25	150	28	32	CN.. 1204..	215	●	216	●
PCKN R/L 3225 P12	32	25	170	28	32	CN.. 1204..	220	●	221	●

Prod. Gr. 107

ATORN® PCLN R/L clamp holder, negative (DIN 4983)

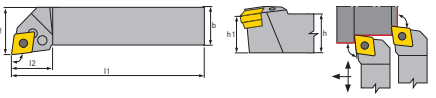
For facing and longitudinal turning using CN indexable inserts

Application:
for longitudinal and face turning with CN indexable insert, 80°

Execution:
- precision-made steel carrier with high-performance cooling system, nickel-plated, hardened, toggle-joint clamping system, type C, attack angle 95°, tip angle 80°, clearance angle 0°

Advantage:
- high-performance cooling channel system with three outlets ensures an extremely long service life and reliable working
- Universal use for face and longitudinal turning with large feed depths and unfavourable conditions
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17837... Ident. No.		Left 17837... Ident. No.	
PCLN R/L 1616 H12 IK G1/8	16	16	100	26	20	CN.. 1204..	705	●	710	●
PCLN R/L 2020 K12 IK G1/8	20	20	125	28	25	CN.. 1204..	715	●	720	●
PCLN R/L 2525 M12 IK G1/8	25	25	150	28	32	CN.. 1204..	725	●	730	●

Prod. Gr. 1BM

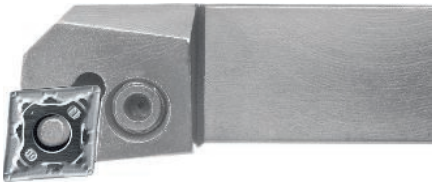
ATORN® PCLN R/L clamp holder, negative (DIN 4983)

For facing and longitudinal turning using CN indexable inserts

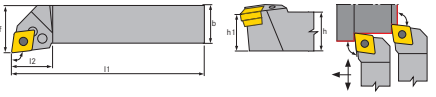
Application:
For longitudinal and face turning with CN indexable insert, 80°

Execution:
- Precision-manufactured steel support, burnished, hardened, toggle-joint clamping system, type C, working angle 95°, tip angle 80°, clearance angle 0°

Advantage:
- Universal use for face and longitudinal turning with large feed depths and unfavourable conditions
- Negative geometry of the body ensures good stability and force absorption at large cutting depths
- Broad range of use: suitable for both finishing and roughing operations



Ident. No. 001, 011, 021–023, 027, 031, 041–043, 047–051, 053, 057



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17837... Ident. No.		Left 17837... Ident. No.	
PCLN R/L 1616 H12	16	16	100	26	20	CN.. 1204..	001	●	006	●
PCLN R/L 2020 K12	20	20	125	28	25	CN.. 1204..	011	●	016	●
PCLN R/L 2525 M12	25	25	150	28	32	CN.. 1204..	021	●	026	●
PCLN R/L 3225 P12	32	25	170	28	32	CN.. 1204..	023	●	024	●
PCLN R/L 3232 P12	32	32	170	28	40	CN.. 1204..	027	●	028	●
PCLN R/L 2525 M16	25	25	150	34	32	CN.. 1606..	031	●	036	●
PCLN R/L 3225 P16	32	25	170	34	32	CN.. 1606..	041	●	046	●
PCLN R/L 3232 P16	32	32	170	34	40	CN.. 1606..	043	●	044	●
PCLN R/L 4040 S16	40	40	250	34	50	CN.. 1606..	047	●	049	●
PCLN R/L 2525 M19	25	25	150	42	32	CN.. 1906..	051	●	052	●
PCLN R/L 3225 P19	32	25	170	42	32	CN.. 1906..	053	●	054	●
PCLN R/L 4040 S19	40	40	250	45	50	CN.. 1906..	057	●	058	○

Prod. Gr. 107

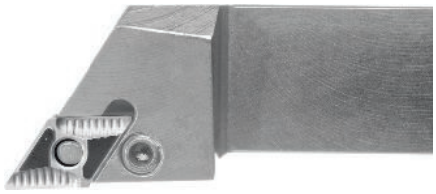
ATORN® PDJN R/L clamp holder, negative (DIN 4983)

For copy and longitudinal lathing with DN indexable insert

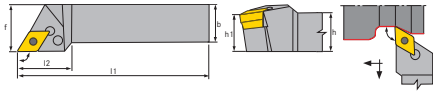
Application:
For copy turning and longitudinal turning using DN indexable insert 55°.

Execution:
- precision-engineered steel support, burnished, hardened, toggle clamp system, type D, 93° pitch angle, 55° tip angle, 0° clearance angle

Advantage:
- very slim geometry, optimised for contour turning with large feed depths and challenging conditions
- negative body geometry ensures good stability and absorption of force for large cutting depths
- wide range of delivery: suitable for both finishing and roughing



Ident. No. 001, 006–007, 011, 021, 051, 061



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17838... Ident. No.		Left 17838... Ident. No.	
PDJN R/L 1616 H11	16	16	100	28	20	DN.. 1104..	001	●	002	●
PDJN R/L 2020 K11	20	20	125	28	25	DN.. 1104..	006	●	009	●
PDJN R/L 2525 M11	25	25	150	28	32	DN.. 1104..	007	●	008	●
PDJN R/L 2020 K15	20	20	125	34	25	DN.. 1506..	011	●	016	●
PDJN R/L 2525 M15	25	25	150	34	32	DN.. 1506..	021	●	026	●
PDJN R/L 3225 P15	32	25	170	24	32	DN.. 1506..	051	●	056	●
PDJN R/L 3232 P15	32	32	170	34	40	DN.. 1506..	061	●	066	●

Prod. Gr. 107

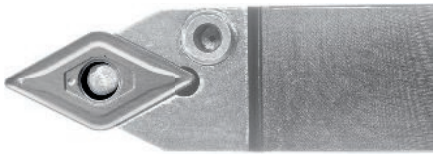
ATORN® PDNN clamp holder, neutral (DIN 4983)

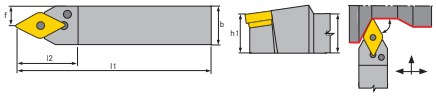
For copy and longitudinal lathing with DN indexable insert

Application:
For copy turning and longitudinal turning using DN indexable insert 55°.

Execution:
- precision-engineered steel support, burnished, hardened, toggle clamp system, type D, 93° pitch angle, 55° tip angle, 0° clearance angle

Advantage:
- very slim geometry, optimised for contour turning with large feed depths and challenging conditions
- negative body geometry ensures good stability and absorption of force for large cutting depths
- wide range of delivery: suitable for both finishing and roughing





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Neutral 17856... Ident. No.	
PDNN N 2020 K15	20	20	125	34	10	DN.. 1506..	002	●
PDNN N 2525 M15	25	25	150	34	12.5	DN.. 1506..	004	●
PDNN N 3232 P15	32	32	170	34	16	DN.. 1506..	006	●
PDNN N 4025 S15	40	25	250	34	12.5	DN.. 1506..	008	●
PDNN N 5032 S15	50	32	250	34	16	DN.. 1506..	010	○

Prod. Gr. 107

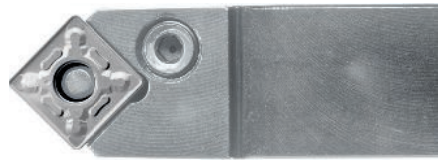
ATORN® PSNN clamp holder, neutral (DIN 4983)

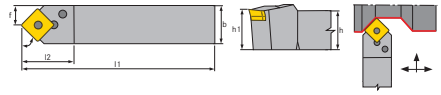
For chamfer and longitudinal lathing with SN indexable insert

Application:
For chamfering and longitudinal turning using SN indexable insert 90°.

Execution:
- precision-engineered steel support, burnished, hardened, toggle clamp system, type S, 90° pitch angle, 90° tip angle, 0° clearance angle

Advantage:
- extremely stable geometry for longitudinal machining with large feed depths and challenging conditions
- negative body geometry ensures good stability and absorption of force for large cutting depths





ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Neutral 17857... Ident. No.	
PSDN N 2020 K12	20	20	125	28	10	SN.. 1204..	005	●
PSDN N 2525 M12	25	25	150	28	12.5	SN.. 1204..	010	●
PSDN N 3232 P12	32	32	170	28	16	SN.. 1204..	015	●

Prod. Gr. 107

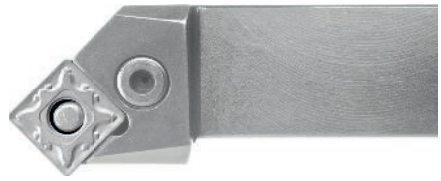
ATORN® PSSN R/L clamp holder, negative (DIN 4983)

For facing and longitudinal turning using SN indexable inserts

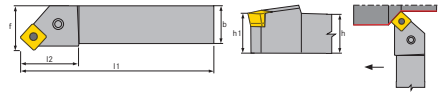
Application:
For copy turning and longitudinal turning using SN indexable insert 90°.

Execution:
- precision-engineered steel support, burnished, hardened, toggle clamp system, type S, 45° pitch angle, 90° tip angle, 0° clearance angle

Advantage:
- very stable geometry with large feed depths and challenging conditions
- negative body geometry ensures good stability and absorption of force for large cutting depths



Ident. No. 020, 030, 040



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17840... Ident. No.		Left 17840... Ident. No.	
PSSN R/L 2020 K12	20	20	125	28	25	SN.. 1204..	020	●	025	●
PSSN R/L 2525 M12	25	25	150	28	32	SN.. 1204..	030	●	035	●
PSSN R/L 3232 P19	32	32	170	42	40	SN.. 1906..	040	●	050	●

Prod. Gr. 107

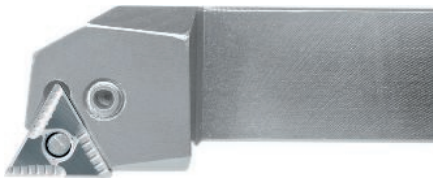
ATORN® PTGN R/L clamp holder, negative (DIN 4983)

For copy and longitudinal turning using TN indexable inserts

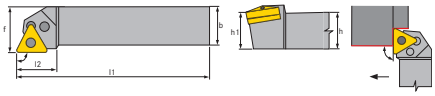
Application:
For copy turning and longitudinal turning using TN indexable insert 60°

Execution:
- precision-engineered steel support, burnished, hardened, toggle clamp system, type T, 90° pitch angle, 60° tip angle, 0° clearance angle

Advantage:
- three-edge geometry lowers costs per cut
- negative body geometry ensures good stability and absorption of force for large cutting depths
- wide range of delivery: suitable for both finishing and roughing



Ident. No. 011, 021, 031



ISO name	h=h1 (mm)	b (mm)	l1 (mm)	l2 (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17839... Ident. No.		Left 17839... Ident. No.	
PTGN R/L 1616 H16	16	16	100	22	20	TN.. 1604..	011	●	016	●
PTGN R/L 2020 K16	20	20	125	22	25	TN.. 1604..	021	●	026	●
PTGN R/L 2525 M16	25	25	150	22	32	TN.. 1604..	031	●	036	●

Prod. Gr. 107



Overview of ISO boring bars

Clamping systems, dimensions

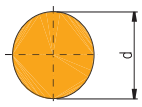
Designations

Clamping holder with cylindric shank (boring bar) according to DIN 8024

Shank design ①

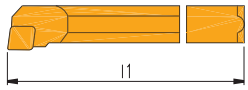
A	Steel with inner cooling lubrication feed	E	Carbide with inner cooling lubrication feed
C	Carbide	S	Steel

Shank diameter ②



Shank diameter in mm.
In case of diameters of less than 10 mm, there will be a leading 0, e. g. 08.

Holder length ③



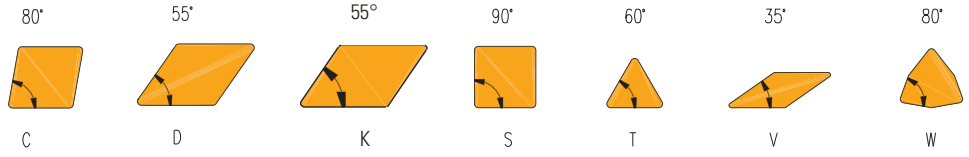
X	Special length

Symbols	H	J	K	L	M	N	P	Q	R	S	T	U	V
mm	100	110	125	140	150	160	170	180	200	250	300	350	400

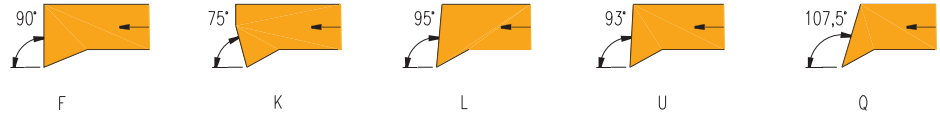
Clamping system ④



Insert shape ⑤



Holder shape ⑥



Clearance angle indexable insert ⑦



Cut direction ⑧



Cutter length ⑨

Indication of the cutter length in mm without decimal point, in case of one-digit numerals with leading 0 (e. g. 08).
In case of round indexable inserts, the diameter is always indicated.

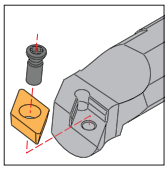
Additional indications

These indications do not form part of the standard and are facultative, e. g. "-U" stands: with shim.

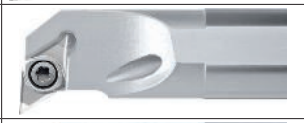
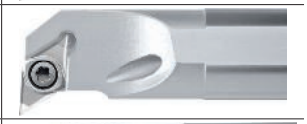
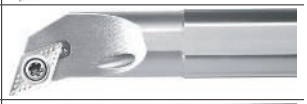
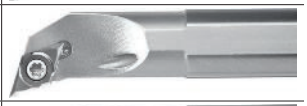
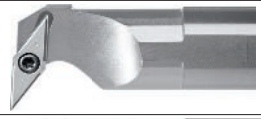
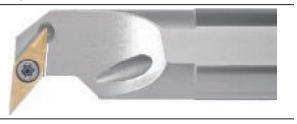
Example

①	②	③	④	⑤	⑥	⑦	⑧	⑨
S	32	U	P	C	L	C	R	12

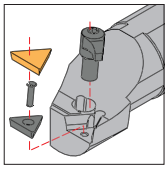
boring bars - clamping system S
for positive indexable inserts with hole



clamping positive indexable inserts which are pulled into the insert setting via a central clamping screw. modern and reliable clamping system for positive lathe machining. the advantage of this system is the high level of accessibility due to the compact design. chips can be removed reliably with this system.

17846168-174	SCLC boring bar, offset, steel, positive, right-hand For face and longitudinal turning with CC indexable insert	
17846013-083	SCLC steel boring bar, positive right for face and longitudinal turning using CC indexable insert	
17847210-214	SDUC boring bar, offset, steel, positive, right-hand For longitudinal and copy turning with DC indexable insert	
17847012-032	SDUC offset steel boring bar, positive, right for longitudinal and copy turning using DC indexable insert	
17848210-218	SDQC offset steel boring bar, positive, right for longitudinal and copy turning with DC indexable insert	
17848022-072	SDQC steel boring bar, positive right for longitudinal and copy turning using DC indexable insert	
17850021-081	STFC boring bar steel positive, right-hand For longitudinal turning with TC indexable insert	
17850300-320	SVJC boring bar steel positive, right-hand For blind hole radius turning with VC indexable insert	
17855050-055	SVUB boring bar steel, positive, right-hand For copying and longitudinal turning with VB indexable insert	
17849012-052	SVUC boring bar steel positive, right-hand For longitudinal and copy turning with VC indexable insert	

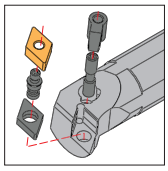
boring bar - clamping system C
for positive indexable inserts without hole



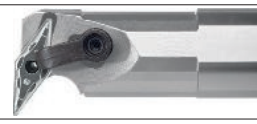
clamping positive indexable inserts without hole. classic clamping system for positive indexable inserts in sinter versions with and without chip breaker.

17851010-020	CKUN steel boring bar, negative, right for longitudinal turning with KN indexable insert	

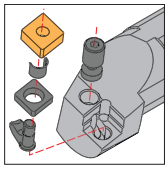
boring bar - clamping system M
for negative indexable inserts with hole



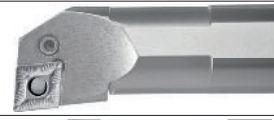
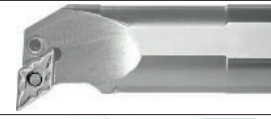
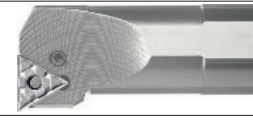
clamping negative indexable inserts using clamping lever and adjustable clamp. the system minimises vibration of the indexable insert. it is the first choice for negative ceramic inserts with central hole and also for cermet indexable inserts.

17851110-120	MVUN steel boring bar, negative, right For copy and longitudinal turning using VN indexable insert	

clamp holder external - clamping system P
for negative indexable inserts with hole



clamping negative indexable inserts using clamping lever. clamping system P allows a wide range of applications. it is the first choice for general turning operations. the advantage of this system is the high level of accessibility due to the compact design. chips can be removed reliably with this system.

17852011-041	PCLN steel boring bar, negative, right for facing and longitudinal turning using CN indexable insert	
17853001-041	PDUN steel boring bar, negative, right for copy and longitudinal turning using DN indexable insert	
17854050-075	PWLN steel boring bar, negative, right for facing and longitudinal turning using WN indexable insert	
17856011-021	PSKN steel boring bar, negative, right for longitudinal turning using SN indexable insert	
17858111-151	PTFN steel boring bar, negative, right for longitudinal turning using TN indexable insert	

boring bars
in steel construction





internal drilling down to a removal depth of up to 3xD

boring bars
in HSS design





inner boring up to a drill depth of 4xD. HSS has good vibration-damping properties.

boring bars
in cemented carbide design





inner boring up to a drill depth of 5xD. cemented carbide has very good vibration-damping properties.

Overview of ISO boring bars

Clamping systems, dimensions

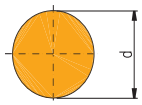
Designations

Clamping holder with cylindric shank (boring bar) according to DIN 8024

Shank design ①

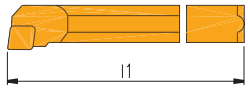
A	Steel with inner cooling lubrication feed	E	Carbide with inner cooling lubrication feed
C	Carbide	S	Steel

Shank diameter ②



Shank diameter in mm.
In case of diameters of less than 10 mm, there will be a leading 0, e. g. 08.

Holder length ③



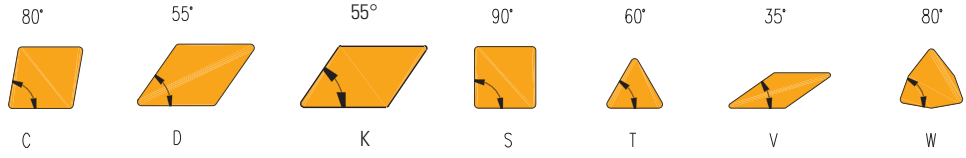
X	Special length

Symbols	H	J	K	L	M	N	P	Q	R	S	T	U	V
mm	100	110	125	140	150	160	170	180	200	250	300	350	400

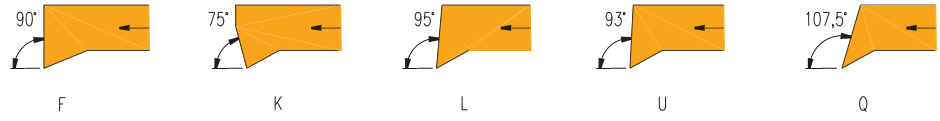
Clamping system ④



Insert shape ⑤



Holder shape ⑥



Clearance angle indexable insert ⑦



Cut direction ⑧



Cutter length ⑨

Indication of the cutter length in mm without decimal point, in case of one-digit numerals with leading 0 (e. g. 08).
In case of round indexable inserts, the diameter is always indicated.

Additional indications

These indications do not form part of the standard and are facultative, e. g. "-U" stands: with shim.

Example

①	②	③	④	⑤	⑥	⑦	⑧	⑨
S	32	U	P	C	L	C	R	12

ATORN® SCLC boring bar, offset, positive, steel and HSS (DIN 8024)

For facing and longitudinal turning using CC indexable inserts

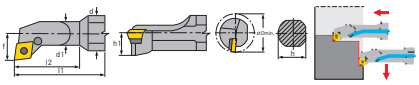
Application:
For face and longitudinal turning with CC indexable insert 80°.

Execution:
- **Ident. No. 168–174:** Precision-made boring bar, **steel**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°
- **Ident. No. 176–182:** precision-manufactured boring bar, **steel**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°
- **Ident. No. 184–190, 300–315:** Precision-made boring bar, **HSS**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°
- **Ident. No. 192–198:** precision-manufactured **HSS** boring bar, with inner cooling, offset, C type, 95° pitch angle, 80° tip angle, 7° clearance angle

Advantage:
- Universal use for face and longitudinal turning
- Positive body geometry ensures low cutting forces
- **Ident. No. 184–315:** Very high rigidity and very good cut quality due to HSS base material



Ident. No. 168–174



ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17846... Ident. No.		Left 17846... Ident. No.	
A 0608 H SCLC R/L 06	8	6	8	25	100	7	4	CC.. 06..	168	●	176	●
A 0810 J SCLC R/L 06	12	8	10	32	110	9	6	CC.. 06..	170	●	178	●
A 1012 K SCLC R/L 06	14	10	12	38	125	11	7	CC.. 06..	172	●	180	●
A 1216 M SCLC R/L 06	18	12	16	50	150	15	9	CC.. 06..	174	●	182	●
AH 0410 H SCLC R/L 03	5	4	10	24	100	9	2.5	CC.. 03..	300	●	305	●
AH 0610 H SCLC R/L 03	7	6	10	24	100	9	2.5	CC.. 03..	310	●	315	●
AH 0608 H SCLC R/L 06	8	6	8	25	100	7	4	CC.. 06..	184	●	192	●
AH 0810 J SCLC R/L 06	12	8	10	32	110	9	6	CC.. 06..	186	●	194	●
AH 1012 J SCLC R/L 06	14	10	12	38	110	11	7	CC.. 06..	188	●	196	●
AH 1216 M SCLC R/L 06	18	12	16	50	150	15	9	CC.. 06..	190	●	198	●

Prod. Gr. 107

ATORN® SCLC boring bar set, offset, positive, steel and HSS (DIN 8024)

For facing and longitudinal turning using CC indexable inserts

Application:
For copy turning and longitudinal turning using CC indexable insert 80°.

Execution:
- **Ident. No. 100–105:** precision-manufactured **steel** boring bar, with inner cooling, offset, C type, 95° pitch angle, 80° tip angle, 7° clearance angle
- **Ident. No. 107–108:** precision-manufactured **HSS** boring bar, with inner cooling, offset, C type, 95° pitch angle, 80° tip angle, 7° clearance angle

Advantage:
- universal use for facing and longitudinal turning
- positive body geometry ensures low cutting forces
- **Ident. No. 107–108:** high level of rigidity and good cutting quality thanks to HSS supporting material

Technical data:
- Number of pieces in assortment/set: 4 PCS
- Suitable for indexable inserts: CC.. 0602..



Fig. shows HSS variant

ISO name	Material	Composition of set	Machining direction Right 17846... Ident. No.		Left 17846... Ident. No.	
SCLC R06	Steel	1 piece each 17846 168-174 (A0608H, A0810J, A1012K, A1216M)	100	●	-	-
SCLC L06	Steel	1 piece each 17846 176-182 (A0608H, A0810J, A1012K, A1216M)	-	-	105	●
SCLC R06	HSS	1 piece each 17846 184-190 (AH0608H, AH0810J, AH1012K, AH1216M)	107	●	-	-
SCLC L06	HSS	1 piece each 17846 192-198 (AH0608H, AH0810J, AH1012K, AH1216M)	-	-	108	●

Prod. Gr. 107

ATORN® SCLC steel boring bar, positive, steel, HSS, CC (DIN 8024)

For facing and longitudinal turning using CC indexable inserts

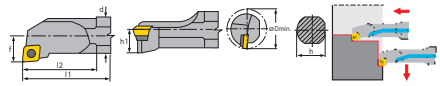
Application:
For copy turning and longitudinal turning using CC indexable insert 80°.

Execution:
- **Ident. No. 013–088:** precision-manufactured **steel** boring bar, with inner cooling, C type, 95° pitch angle, 80° tip angle, 7° clearance angle
- **Ident. No. 093–177:** precision-manufactured **solid carbide** boring bar, with inner cooling, C type, 95° pitch angle, 80° tip angle, 7° clearance angle
- **Ident. No. 320–375:** precision-manufactured **HSS** boring bar, with inner cooling, C type, 95° pitch angle, 80° tip angle, 7° clearance angle

Advantage:
- universal use for facing and longitudinal turning
- positive body geometry ensures low cutting forces
- **Ident. No. 093–177:** extremely high rigidity and very good cutting quality thanks to solid carbide supporting material
- **Ident. No. 320–375:** very high rigidity and excellent cutting quality thanks to HSS supporting material



Ident. No. 013, 023, 033, 043, 053, 063, 073, 083



ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17846... Ident. No.		Left 17846... Ident. No.	
A 08 H SCLC R/L 06	12	8	3.5	12	100	7	6	CC.. 0602..	013	●	018	●
A 10 K SCLC R/L 06	14	10	4.5	16	125	9	7	CC.. 0602..	023	●	028	●
A 12 R SCLC R/L 06	18	12	5.5	20	140	11	9	CC.. 0602..	033	●	038	●
A 16 Q SCLC R/L 09	22	16	7.5	25	180	15	11	CC.. 09T3..	043	●	048	●
A 20 R SCLC R/L 09	26	20	9	32	200	18	13	CC.. 09T3..	053	●	058	●
A 25 R SCLC R/L 12	34	25	11.5	40	200	23	17	CC.. 1204..	063	●	068	●
A 32 S SCLC R/L 12	40	32	15	20	250	30	22	CC.. 1204..	073	●	078	●
A 40 T SCLC R/L 12	50	40	18.5	25	300	37	27	CC.. 1204..	083	●	088	●
C 04 G SCLC R/L 03	5	4	1.5	10	90	3	2.5	CC.. 0301..	093	●	094	●
C 05 H SCLC R/L 03	6	5	2	10	100	4	3	CC.. 0301..	095	●	096	●
E 06 J SCLC R/L 03	7	6	2.5	10	110	5	3.5	CC.. 0301..	097	●	098	●
E 08 K SCLC R/L 06	10	8	3.5	10	125	7	5	CC.. 0602..	112	●	117	●
E 10 K SCLC R/L 06	12	10	4.5	10	125	9	6	CC.. 0602..	122	●	127	●
E 12 M SCLC R/L 06	14	12	5.5	10	150	11	7	CC.. 0602..	132	●	137	●
E 16 R SCLC R/L 09	18	16	7.5	16	200	15	9	CC.. 09T3..	142	●	147	●
E 20 S SCLC R/L 09	23	20	9	16	250	18	11.5	CC.. 09T3..	152	●	157	●
E 25 S SCLC R/L 12	30	25	11.5	16	250	23	13	CC.. 1204..	162	●	167	●
E 32 U SCLC R/L 12	40	32	15	22	350	30	20	CC.. 1204..	173	●	177	○
AH 08 K SCLC R/L 06	10	8	3.5	20	125	7	5	CC.. 0602..	320	●	325	●
AH 10 K SCLC R/L 06	12	10	4.5	20	125	9	6	CC.. 0602..	330	●	335	●
AH 12 M SCLC R/L 06	14	12	5.5	20	150	11	7	CC.. 0602..	340	●	345	●
AH 16 Q SCLC R/L 09	18	16	7.5	27	180	15	9	CC.. 09T3..	350	●	355	●
AH 20 R SCLC R/L 09	23	20	9	27	200	18	11.5	CC.. 09T3..	360	●	365	●
AH 25 R SCLC R/L 09	28	25	11.5	40	200	23	14	CC.. 1204..	370	●	375	●

Prod. Gr. 107

ATORN® SCLC boring bar set, positive, cemented carbide (DIN 8024)

For facing and longitudinal turning using CC indexable inserts

Application:
For copy turning and longitudinal turning using CC indexable insert 80°.

Execution:
- precision-manufactured **solid carbide** boring bar, with inner cooling, C type, 95° pitch angle, 80° tip angle, 7° clearance angle

Advantage:
- universal use for facing and longitudinal turning
- positive body geometry ensures low cutting forces
- very high level of rigidity and good cutting quality thanks to solid carbide supporting material

Technical data:
- Material: VHM
- Number of pieces in assortment/set: 3 PCS
- Suitable for indexable inserts: CC.. 0602..



ISO name	Composition of set	Machining direction: Right 17846... Ident. No.		Left 17846... Ident. No.	
SCLC R06	1 piece each 17846 112-132 (E08K, E10K, E12M)	200	●	-	-
SCLC L06	1 piece each 17846 117-137 (E08K, E10K, E12M)	-	-	205	●

Prod. Gr. 107

ATORN® SDUC boring bar, offset, positive, steel, HSS, cemented carbide (DIN 8024)

for longitudinal and copy turning with DC indexable insert

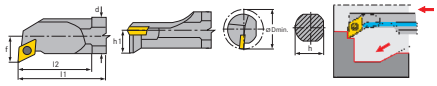
Application:
Ident. No. 210–221: For longitudinal and copy turning with DC indexable insert 55°.
Ident. No. 238–243: For longitudinal and copy turning with DC 55° indexable insert.

Execution:
- **Ident. No. 210–215:** Precision-made boring bar, **steel**, with internal cooling, offset, type D, attack angle 93.5°, tip angle 55°, clearance angle 7°
- **Ident. No. 216–221:** Precision-made boring bar, **HSS**, with internal cooling, offset, type D, attack angle 93.5°, tip angle 55°, clearance angle 7°
- **Ident. No. 238–243:** precision-manufactured **solid carbide** boring bar, with inner cooling, D type, 93.5° pitch angle, 55° tip angle, 7° clearance angle

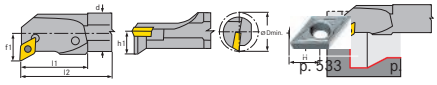
Advantage:
- **Ident. No. 210–221:**
  - Narrow contour optimised for copying-turning work
  - Positive body geometry ensures low cutting forces
- **Ident. No. 216–221:** Very high rigidity and very good cut quality due to HSS base material
- **Ident. No. 238–243:**
  - slim contour, optimised for copy turning
  - positive body geometry ensures low cutting forces
  - extremely high rigidity and very good cutting quality thanks to solid carbide supporting material



Ident. No. 210, 212, 214



Ident. No. 210–221



Ident. No. 239, 241, 243

ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17847... Ident. No.		Left 17847... Ident. No.	
A 0810 H SDUC R/L 07	12.5	10	22	100	9	7	DC.. 0702..	210	●	211	●
A 1012 H SDUC R/L 07	15.5	12	28	125	11	9	DC.. 0702..	212	●	213	●
A 1216 R/L SDUC R/L 07	19.5	16	36	150	15	11	DC.. 0702..	214	●	215	●
AH 0810 H SDUC R/L 07	12.5	10	22	100	9	7	DC.. 0702..	216	●	217	●
AH 1012 K SDUC R/L 07	15.5	12	28	125	11	9	DC.. 0702..	218	●	219	●
AH 1216 M SDUC R/L 07	19.5	16	36	150	15	11	DC.. 0702..	220	●	221	●
E 08 K SDUC R/L 07	13.5	8	10	125	7	7.5	DC.. 0702..	238	●	239	●
E 10 K SDUC R/L 07	13.5	10	10	125	9	7.5	DC.. 0702..	240	●	241	●
E 12 M SDUC R/L 07	15	12	12.5	150	11	7.5	DC.. 0702..	242	●	243	●

Prod. Gr. 107

ATORN® SDUC boring bar set, offset, positive, steel, HSS, cemented carbide (DIN 8024)

for longitudinal and copy turning with DC indexable insert

Application:
For longitudinal and copy turning with DC 55° indexable insert.

Execution:
- **Ident. No. 100–105:** precision-manufactured **steel** boring bar set, offset, with inner cooling, D type, 93.5° pitch angle, 55° tip angle, 7° clearance angle
- **Ident. No. 230–235:** precision-manufactured **HSS** boring bar set, offset, with inner cooling, D type, 93.5° pitch angle, 55° tip angle, 7° clearance angle
- **Ident. No. 250–255:** precision-manufactured **solid carbide** boring bar set, with inner cooling, D type, 93.5° pitch angle, 55° tip angle, 7° clearance angle

Advantage:
- very slim geometry, optimised for contour turning work
- positive body geometry ensures low cutting forces
- **Ident. No. 230–235:** high level of rigidity and good cutting quality thanks to HSS supporting material
- **Ident. No. 250–255:** very high level of rigidity and good cutting quality thanks to solid carbide supporting material

Technical data:
- Suitable for indexable inserts: DC.. 0702..



Fig. shows HSS variant

ISO name	Material	Composition of set	Machining direction: Number of pieces in assortment/set (PCS)	Right: 17847... Ident. No.		Left: 17847... Ident. No.	
SDUC R07	Steel	1 piece each 17847 210-214 (A0810HK, A1012H, A1216H)	3	100	●	-	-
SDUC L07	Steel	1 piece each 17847 211-215 (A0810HK, A1012H, A1216H)	3	-	-	105	●
SDUC R07	HSS	1 piece each 17847 216-220 (AH0810HK, AH1012H, AH1216H)	3	230	●	-	-
SDUC L07	HSS	1 piece each 17847 217-221 (AH0810HK, AH1012H, AH1216H)	3	-	-	235	●
SDUC R07	VHM	1 piece each 17847 240-242 (E10K, E12M)	2	250	●	-	-
SDUC L07	VHM	1 piece each 17847 241-243 (E10K, E12M)	2	-	-	255	●

Prod. Gr. 107

ATORN® SDUC boring bar, offset, positive, steel, HSS, cemented carbide (DIN 8024)

for longitudinal and copy turning with DC indexable insert

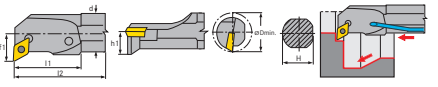
Application:
For longitudinal and copy turning with DC 55° indexable insert.

Execution:
- **Ident. No. 012–068:** precision-manufactured **steel** boring bar, with inner cooling, D type, 93.5° pitch angle, 55° tip angle, 7° clearance angle
- **Ident. No. 071–109:** precision-manufactured **HSS** boring bar, with inner cooling, D type, 93.5° pitch angle, 55° tip angle, 7° clearance angle
- **Ident. No. 238–249:** precision-manufactured **solid carbide** boring bar, with inner cooling, D type, 93.5° pitch angle, 55° tip angle, 7° clearance angle

Advantage:
- positive body geometry ensures low cutting forces
- **Ident. No. 012–109, 246–249:** very slim geometry, optimised for contour turning work
- **Ident. No. 071–109:** very high rigidity and excellent cutting quality thanks to HSS supporting material
- **Ident. No. 238–245:** slim contour, optimised for copy turning
- **Ident. No. 238–249:** extremely high rigidity and very good cutting quality thanks to solid carbide supporting material



Ident. No. 012, 022, 032



Ident. No. 012–109, 239, 241, 243, 245–249

ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design: Suitable for indexable inserts	Right: 17847... Ident. No.		Left: 17847... Ident. No.	
A 10 H SDUC R/L 07	14	10	4.5	8	100	9	7	DC.. 0702..	012	●	017	●
A 12 L SDUC R/L 07	18	12	5.5	20	140	11	9	DC.. 0702..	022	●	027	●
A 16 Q SDUC R/L 07	22	16	7.5	25	180	15	11	DC.. 0702..	032	●	037	●
A 20 R SDUC R/L 11	26	20	9	32	200	18	13	DC.. 11T3..	042	●	047	●
A 25 R SDUC R/L 11	34	25	11.5	40	200	23	17	DC.. 11T3..	052	●	057	●
A 32 S SDUC R/L 11	40	32	15	50	250	30	22	DC.. 11T3..	061	●	066	●
A 40 T SDUC R/L 11	50	40	18.5	50	300	37	25	DC.. 11T3..	067	●	068	●
AH 10 K SDUC R/L 07	14	10	4.5	20	125	9	7.5	DC.. 0702..	071	●	076	●
AH 12 M SDUC R/L 07	16	12	5.5	25	150	11	8	DC.. 0702..	081	●	086	●
AH 16 Q SDUC R/L 07	20	16	7.5	25	180	15	10	DC.. 0702..	091	●	096	●
AH 20 R SDUC R/L 11	26	20	9	30	200	18	13	DC.. 11T3..	101	●	103	●

ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17847... Ident. No.		Left 17847... Ident. No.	
AH 25 R SDUC R/L 11	32	25	11.5	40	200	23	16	DC.. 11T3..	107	●	109	●
E 08 K SDUC R/L 07	13.5	8	3.5	10	125	7	7.5	DC.. 0702..	238	●	239	●
E 10 K SDUC R/L 07	13.5	10	4.5	10	125	9	7.5	DC.. 0702..	240	●	241	●
E 12 M SDUC R/L 07	15	12	5.5	12.5	150	11	7.5	DC.. 0702..	242	●	243	●
E 16 R SDUC R/L 07	19	16	7.5	16.5	200	15	9.5	DC.. 0702..	244	●	245	●
E 20 S SDUC R/L 11	25	20	9	20.5	250	18	14	DC.. 11T3..	246	●	247	●
E 25 S SDUC R/L 11	27	25	11.5	26	250	23	16	DC.. 11T3..	248	●	249	●

Prod. Gr. 107

ATORN® SDQC boring bar, offset, positive, steel (DIN 8024)

for longitudinal and copy turning with DC indexable insert

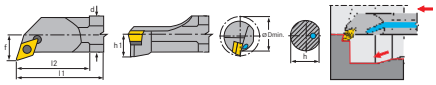
Application:
For longitudinal and copy turning with DC 55° indexable insert.

Execution:
- precision-manufactured steel boring bar, with inner cooling, offset, D type, 107.5° pitch angle, 55° tip angle, 7° clearance angle

Advantage:
- slim contour, optimised for copy turning work
- positive body geometry ensures low cutting forces



Ident. No. 210, 214, 218



ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17848... Ident. No.		Left 17848... Ident. No.	
A 0810 H SDQC R/L 07	12.5	8	10	22	100	9	7	DC.. 0702..	210	●	212	●
A 1012 K SDQC R/L 07	15.5	10	12	28	125	11	9	DC.. 0702..	214	●	216	●
A 1216 M SDQC R/L 07	19.5	12	16	36	150	15	11	DC.. 0702..	218	●	220	●

Prod. Gr. 107

ATORN® SDQC boring bar set, offset, positive, steel (DIN 8024)

for longitudinal and copy turning with DC indexable insert

Application:
For longitudinal and copy turning with DC 55° indexable insert.

Execution:
- precision-manufactured steel boring bar, offset, with inner cooling, D type, 107.5° pitch angle, 55° tip angle, 7° clearance angle

Advantage:
- very slim geometry, optimised for contour turning work
- positive body geometry ensures low cutting forces

Technical data:
- Material: Steel
- Number of pieces in assortment/set: 3 PCS
- Suitable for indexable inserts: DC.. 0702..



ISO name	Composition of set	Machining direction	Right		Left	
			17848... Ident. No.		17848... Ident. No.	
SDQC R07	1 piece each 17848 210-218 (A0810H, A1012K, A1216M)		200	●	-	-
SDQC L07	1 piece each 17848 212-220 (A0810H, A1012K, A1216M)		-	-	205	●

Prod. Gr. 107

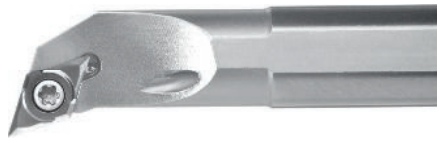
ATORN® SDQC boring bar, positive, steel, HSS, cemented carbide (DIN 8024)

for longitudinal and copy turning with DC indexable insert

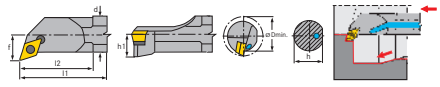
Application:
Ident. No. 022–077: For longitudinal and copy turning with DC 55° indexable insert.
Ident. No. 082–187: For longitudinal and copy turning with DC indexable insert 55°.

Execution:
- **Ident. No. 022–077:** precision-manufactured **steel** boring bar, with inner cooling, D type, 107.5° pitch angle, 55° tip angle, 7° clearance angle
- **Ident. No. 082–127:** Precision-made boring bar, **HSS**, with internal cooling, type D, attack angle 107.5°, tip angle 55°, clearance angle 7°
- **Ident. No. 132–187:** Precision-made boring bar, **steel**, with internal cooling, type D, attack angle 107.5°, tip angle 55°, clearance angle 7°

Advantage:
- **Ident. No. 022–077:**
  - very slim geometry, optimised for contour turning work
  - positive body geometry ensures low cutting forces
- **Ident. No. 082–127:** Very high rigidity and very good cut quality due to HSS base material
- **Ident. No. 082–187:**
  - Very narrow geometry optimised for contour-turning work
  - Positive body geometry ensures low cutting forces
- **Ident. No. 132–187:** Extremely high rigidity and very good cut quality due to solid carbide base material



Ident. No. 022, 032, 042, 052, 062, 072



ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17848... Ident. No.		Left 17848... Ident. No.	
A 12 L SDQC R/L 07	18	12	5.5	20	125	11	9	DC.. 0702..	022	●	027	●
A 16 Q SDQC R/L 07	22	16	7.5	25	150	15	11	DC.. 0702..	032	●	037	●
A 20 R SDQC R/L 11	26	20	9	32	200	18	13	DC.. 11T3..	042	●	047	●
A 25 R SDQC R/L 11	34.5	25	11.5	40	200	23	17	DC.. 11T3..	052	●	057	●
A 32 S SDQC R/L 11	44	32	15	33.5	250	30	22	DC.. 11T3..	062	●	067	●
A 40 T SDQC R/L 11	54	40	18.5	50	300	37	27	DC.. 11T3..	072	●	077	●
AH 10 K SDQC R/L 07	13	10	4.5	20	125	9	7	DC.. 0702..	082	●	087	●
AH 12 M SDQC R/L 07	16	12	5.5	20	150	11	8.5	DC.. 0702..	092	●	097	●
AH 16 Q SDQC R/L 07	20	16	7.5	30	180	15	10	DC.. 0702..	102	●	107	●
AH 20 R SDQC R/L 11	25	20	9	40	200	18	12.5	DC.. 11T3..	112	●	117	●
AH 25 R SDQC R/L 11	32	25	11.5	40	200	23	16	DC.. 11T3..	122	●	127	●
E 08 K SDQC R/L 07	12	8	3.5	10	125	7	7	DC.. 0702..	132	●	137	●
E 10 K SDQC R/L 07	13	10	4.5	10	125	9	7	DC.. 0702..	142	●	147	●
E 12 M SDQC R/L 07	16	12	5.5	12.5	150	11	8.5	DC.. 0702..	152	●	157	●
E 16 R SDQC R/L 07	20	16	7.5	16.5	200	15	10	DC.. 0702..	162	●	167	●

ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17848... Ident. No.		Left 17848... Ident. No.	
E 20 S SDQC R/L 11	25	20	9	13	250	18	12.5	DC.. 11T3..	172	●	177	●
E 25 S SDQC R/L 11	32	25	11.5	17	250	23	16	DC.. 11T3..	182	●	187	○

Prod. Gr. 107

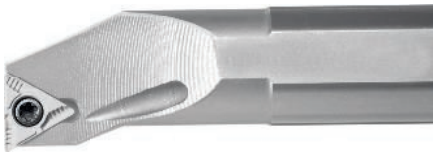
ATORN® STFC boring bar, positive, steel, HSS, cemented carbide (DIN 8024)

For longitudinal turning using TC indexable inserts

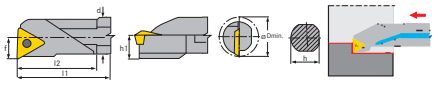
Application:
For longitudinal and copy turning with TC indexable insert 60°.

Execution:
- **Ident. No. 021–086:** Precision-made boring bar, **steel**, with internal cooling, type T, attack angle 90°, tip angle 60°, clearance angle 7°
- **Ident. No. 087–121, 131, 141, 151:** Precision-made boring bar, **HSS**, with internal cooling, type T, attack angle 90°, tip angle 60°, clearance angle 7°
- **Ident. No. 126, 136, 146, 156:** Precision-made boring bar, **solid carbide**, with internal cooling, type T, attack angle 90°, tip angle 60°, clearance angle 7°

Advantage:
- Three-cutter geometry reduces the costs per cutter
- Positive body geometry ensures low cutting forces
- **Ident. No. 087–096:** Very high rigidity and very good cut quality due to HSS base material
- **Ident. No. 121–156:** Extremely high rigidity and very good cut quality due to solid carbide base material



Ident. No. 021, 031, 041, 051, 061, 071, 081



ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17850... Ident. No.		Left 17850... Ident. No.	
A 10 K STFC R/L 11	14	10	4.5	16	125	9	7	TC.. 1102..	021	●	026	●
A 12 R STFC R/L 11	18	12	5.5	20	140	11	9	TC.. 1102..	031	●	036	●
A 16 Q STFC R/L 11	22	16	7.5	25	180	15	11	TC.. 1102..	041	●	046	●
A 20 R STFC R/L 16	26	20	9	32	200	18	13	TC.. 16T3..	051	●	056	●
A 25 R STFC R/L 16	34	25	11.5	40	200	23	17	TC.. 16T3..	061	●	066	●
A 32 S STFC R/L 16	40	32	15	21	250	30	22	TC.. 16T3..	071	●	076	●
A 40 T STFC R/L 16	49	40	18.5	21	300	37	27	TC.. 16T3..	081	●	086	●
AH 10 K STFC R/L 11	12	10	4.5	16	125	9	7	TC.. 1102..	087	●	088	●
AH 12 M STFC R/L 11	14	12	5.5	20	150	11	9	TC.. 1102..	089	●	090	●
AH 16 Q STFC R/L 11	18	16	7.5	25	180	15	11	TC.. 1102..	091	●	092	●
AH 20 R STFC R/L 11	23	20	9	32	200	18	13	TC.. 1102..	093	●	094	●
AH 25 R STFC R/L 16	28	25	11.5	40	200	23	17	TC.. 16T3..	095	●	096	●
E 12 M STFC R/L 11	15	12	5.5	20	150	11	7.5	TC.. 1102..	121	●	126	●
E 16 R STFC R/L 11	19	16	7.5	25	200	15	9.5	TC.. 1102..	131	●	136	●
E 20 S STFC R/L 16	24	20	9	32	250	18	12	TC.. 16T3..	141	●	146	○
E 25 S STFC R/L 16	27	25	11.5	40	250	23	13.5	TC.. 16T3..	151	●	156	○

Prod. Gr. 107

ATORN® SVJC boring bar, positive, steel, HSS, cemented carbide (DIN 8024)

For turning blind hole radii using VC indexable inserts

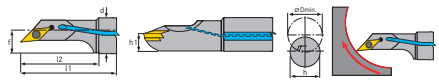
Application:
For blind hole radius turning with VC indexable insert 35°.

Execution:
- **Ident. No. 300–325:** Precision-made boring bar, **steel**, with internal cooling, type V, attack angle 52°, tip angle 35°, clearance angle 7°
- **Ident. No. 400–425:** Precision-made boring bar, **HSS**, with internal cooling, type V, attack angle 52°, tip angle 35°, clearance angle 7°

Advantage:
- Very narrow geometry optimised for contour-turning work
- Positive body geometry ensures low cutting forces
- **Ident. No. 400–425:** Very high rigidity and very good cut quality due to HSS base material



Ident. No. 300, 310, 320



ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17850... Ident. No.		Left 17850... Ident. No.	
A 16 M SVJC R/L 11	22	16	7.5	30	150	15	4.6	VC.. 1103..	300	●	305	●
A 20 Q SVJC R/L 11	25	20	9	38	180	18	4.6	VC.. 1103..	310	●	315	●
A 25 R SVJC R/L 16	28	25	11.5	44	200	23	4.6	VC.. 1604..	320	●	325	●
AH 16 M SVJC R/L 11	22	16	7.5	30	150	15	4.6	VC.. 1103..	400	●	405	●
AH 20 Q SVJC R/L 11	25	20	9	38	180	18	4.6	VC.. 1103..	410	●	415	●
AH 25 R SVJC R/L 16	28	25	11.5	44	200	23	4.6	VC.. 1604..	420	●	425	○

Prod. Gr. 107

ATORN® SVJC boring bar set, positive, steel (DIN 8024)

For turning blind hole radii using VC indexable inserts

Application:
For turning blind hole radius using 35° VC indexable insert.

Execution:
- precision-manufactured steel boring bar, with inner cooling, V type, 52° pitch angle, 35° tip angle, 7° clearance angle

Advantage:
- very slim geometry, optimised for contour turning work
- positive body geometry ensures low cutting forces

Technical data:
- Material: Steel
- Number of pieces in assortment/set: 2 PCS
- Suitable for indexable inserts: VC.. 1103..



ISO name	Composition of set	Machining direction Right 17850... Ident. No.		Left 17850... Ident. No.	
SVJC R11	1 piece each 17850 300-310 (A16M, A20Q)	250	●	-	-
SVJC L11	1 piece each 17850 305-315 (A16M, A20Q)	-	-	255	●

Prod. Gr. 107

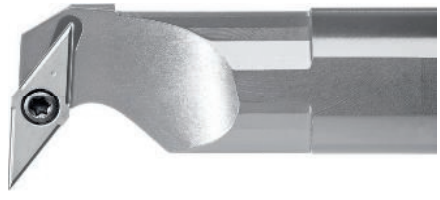
ATORN® SVUB boring bar, positive, steel (DIN 8024)

For copy and longitudinal lathing with VB indexable insert

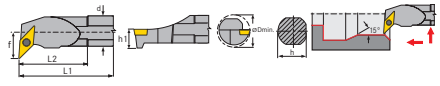
Application:
For copying and longitudinal turning with VB indexable insert 35°.

Execution:
- Precision-made boring bar, steel, with internal cooling, type V, attack angle 93°, tip angle 35°, clearance angle 7°

Advantage:
- Very narrow geometry optimised for contour-turning work
- Positive body geometry ensures low cutting forces



Ident. No. 050, 055



ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17855... Ident. No.		Left 17855... Ident. No.	
S 25 T SVUB R/L 16	31	25	11.5	40	300	23	17	VB.. 1604..	050	●	051	●
S 32 U SVUB R/L 16	39	32	15	50	350	30	22	VB.. 1604..	055	●	056	●

Prod. Gr. 107

ATORN® SVUC boring bar, positive, steel, HSS, cemented carbide

for longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 35°.

Execution:

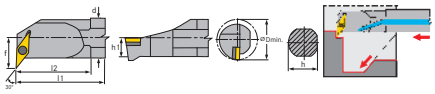
- **Ident. No. 012–057:** Precision-made boring bar, **steel**, with internal cooling, type V, attack angle 93°, tip angle 35°, clearance angle 7°
- **Ident. No. 062–087:** Precision-made boring bar, **solid carbide**, with internal cooling, type V, attack angle 93°, tip angle 35°, clearance angle 7°

Advantage:

- Very narrow geometry optimised for contour-turning work
- Positive body geometry ensures low cutting forces
- **Ident. No. 062–087:** Extremely high rigidity and very good cut quality due to solid carbide base material



Ident. No. 012, 022, 032, 042, 052



ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17849... Ident. No.		Left 17849... Ident. No.	
A 16 M SVUC R/L 11	21	16	7.5	16.5	150	15	11	VC.. 1103..	012	●	017	●
A 20 R SVUC R/L 11	25	20	9	20.5	200	18	13	VC.. 1103..	022	●	027	●
A 25 R SVUC R/L 16	31.5	25	11.5	25.5	200	23	17	VC.. 1604..	032	●	037	●
A 32 S SVUC R/L 16	40	32	15	33.5	250	30	22	VC.. 1604..	042	●	047	●
A 40 T SVUC R/L 16	49	40	18.5	40	300	37	27	VC.. 1604..	052	●	057	●
E 16 R SVUC R/L 11	21	16	7.5	16.5	200	15	11	VC.. 1103..	062	●	067	●
E 20 S SVUC R/L 11	25	20	9	20.5	250	18	13	VC.. 1103..	072	●	077	●
E 25 S SVUC R/L 11	31.5	25	11.5	25.5	250	23	17	VC.. 1103..	082	●	087	●

Prod. Gr. 107

ATORN® CKUN boring bar, negative, steel (DIN 8024)

For longitudinal turning using KN indexable inserts

Application:
For longitudinal turning using KN 55° indexable insert.

Execution:

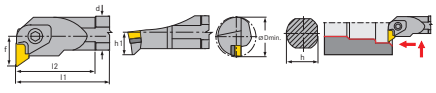
- precision-manufactured steel boring bar, K type, 93° pitch angle, 55° tip angle, 0° clearance angle

Advantage:

- optimised geometry for low-performance machines
- positive cutting geometry of the indexable insert ensures low cutting forces
- wide range of delivery: suitable for both finishing and roughing



Ident. No. 010, 015, 020



ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17851... Ident. No.		Left 17851... Ident. No.	
S 25 T CKUN R/L 16	37	25	50	300	23	20.5	KNUX 1604..	010	●	011	●
S 32 U CKUN R/L 16	39	32	54	350	30	22	KNUX 1604..	015	●	016	●
S 40 V CKUN R/L 16	48	40	60	400	37	27	KNUX 1604..	020	●	021	●

Prod. Gr. 107

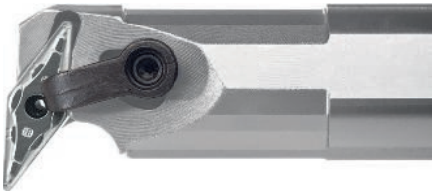
ATORN® MVUN boring bar, negative, steel (DIN 8024)

For copy and longitudinal turning with VN indexable insert

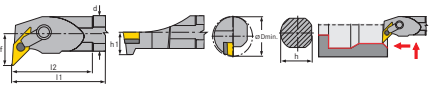
Application:
For copy and longitudinal turning using VN 35° indexable insert.

Execution:
- precision-manufactured steel boring bar, V type, 93° pitch angle, 35° tip angle, 0° clearance angle

Advantage:
- very slim geometry, optimised for contour turning work
- negative body geometry ensures good stability and absorption of force for large cutting depths
- wide range of delivery: suitable for both finishing and roughing



Ident. No. 110, 115, 120



ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Tool design Suitable for indexable inserts	Right 17851... Ident. No.		Left 17851... Ident. No.	
S 25 T MVUN R/L 16	31	25	40	300	23	17	VN.. 1604..	110	●	111	●
S 32 U MVUN R/L 16	39	32	50	350	30	22	VN.. 1604..	115	●	116	○
S 40 V MVUN R/L 16	48	40	60	400	37	27	VN.. 1604..	120	●	121	●

Prod. Gr. 107

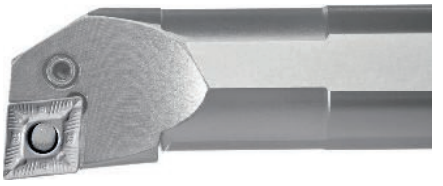
ATORN® PCLN boring bar, negative, steel (DIN 8024)

For facing and longitudinal turning using CN indexable inserts

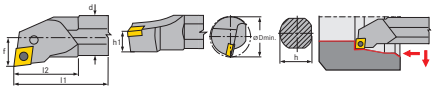
Application:
for facing and longitudinal turning using CN 80° indexable insert

Execution:
- **Ident. No. 011–046:** precision-manufactured steel boring bar, C type, 95° pitch angle, 80° tip angle, 0° clearance angle
- **Ident. No. 051–066:** precision-manufactured steel boring bar with clamping surface, inner cooling, C type, 95° pitch angle, 80° tip angle, 0° clearance angle

Advantage:
- universal use for facing and longitudinal turning
- negative body geometry ensures good stability and absorption of force for large cutting depths



Ident. No. 011, 021, 031, 041



ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	h1 (mm)	Tool design Suitable for indexable inserts	Right 17852... Ident. No.		Left 17852... Ident. No.	
S 25 T PCLN R/L 12	31	25	40	300	23	17	11.5	CN.. 1204..	011	●	016	●
S 32 U PCLN R/L 12	39	32	50	350	30	22	15	CN.. 1204..	021	●	026	●
S 40 V PCLN R/L 12	48	40	60	400	37	27	18.5	CN.. 1204..	031	●	036	●
S 50 W PCLN R/L 16	61	50	65	450	47	35	23.5	CN.. 1604..	041	○	046	○
A 25 R PCLN R/L 12	32	25	40	200	23	17	11.5	CN.. 1204..	051	●	056	●
A 32 S PCLN R/L 12	40	32	50	250	30	22	15	CN.. 1204..	061	●	066	●

Prod. Gr. 107

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

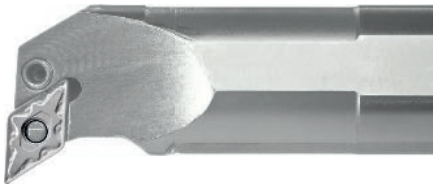
ATORN® PDUN boring bar, negative, steel (DIN 8024)

for copy and longitudinal lathing with DN indexable insert

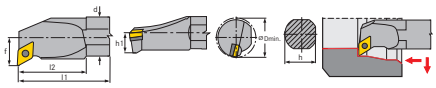
Application:
For copy turning and longitudinal turning using DN 55° indexable insert

Execution:
- **Ident. No. 001–046:** precision-manufactured steel boring bar, D type, 93° pitch angle, 55° tip angle, 0° clearance angle
- **Ident. No. 051–076:** precision-manufactured steel boring bar with clamping surface, D type, 93° pitch angle, 55° tip angle, 0° clearance angle

Advantage:
- very slim geometry, optimised for contour turning work
- negative body geometry ensures good stability and absorption of force for large cutting depths



Ident. No. 001, 011, 021, 031, 041



ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	h1 (mm)	Tool design Suitable for indexable inserts	Right 17853... Ident. No.		Left 17853... Ident. No.	
S 20 S PDUN R/L 11	25	20	29	250	18	13	9	DN.. 1104..	001	●	006	●
S 25 T PDUN R/L 11	32	25	40	300	23	17	11.5	DN.. 1104..	011	●	016	●
S 32 U PDUN R/L 15	39	32	50	350	30	22	15	DN.. 1506..	021	●	026	●
S 40 V PDUN R/L 15	48	40	60	400	37	27	18.5	DN.. 1506..	031	●	036	●
S 50 W PDUN R/L 15	61	50	65	450	47	35	23.5	DN.. 1506..	041	○	046	○
A 25 R PDUN R/L 11	32	25	40	200	23	40	11.5	DN.. 1104..	051	●	056	●
A 32 S PDUN R/L 15	40	32	50	250	30	22	15	DN.. 1506..	061	●	066	●
A 40 T PDUN R/L 15	50	40	60	300	37	27	18.5	DN.. 1506..	071	●	076	●

Prod. Gr. 107

ATORN® PWLN boring bar, negative, steel (DIN 8024)

For facing and longitudinal turning using WN indexable inserts

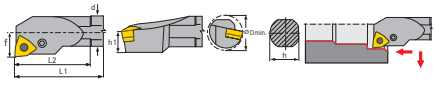
Application:
For facing and longitudinal turning using WN 80° indexable insert

Execution:
- precision-manufactured steel boring bar, D type, 95° pitch angle, 80° tip angle, 0° clearance angle

Advantage:
- three-edge geometry lowers costs per cut
- negative body geometry ensures good stability and absorption of force for large cutting depths



Ident. No. 050, 055, 060, 065, 070, 075



ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	h1 (mm)	Tool design Suitable for indexable inserts	Right 17854... Ident. No.		Left 17854... Ident. No.	
A 16 M PWLN R/L 06	22	16	28	150	14	11	7	WN.. 0604..	050	●	051	●
A 20 Q PWLN R/L 06	25	20	30	180	18	13	9	WN.. 0604..	055	●	056	●
A 25 R PWLN R/L 06	32	25	33	200	23	17	11.5	WN.. 0604..	060	●	061	●
A 25 R PWLN R/L 08	32	25	40	200	23	17	11.5	WN.. 0804..	065	●	066	●
A 32 S PWLN R/L 08	40	32	50	250	30	22	15	WN.. 0804..	070	●	071	●
A 40 T PWLN R/L 08	50	40	63	300	37	27	18.5	WN.. 0804..	075	●	076	●

Prod. Gr. 107

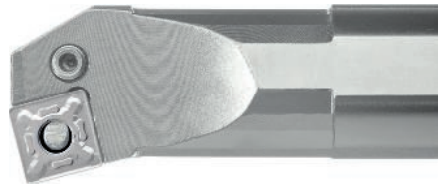
ATORN® PSKN boring bar, negative, steel

For longitudinal turning using SN indexable inserts

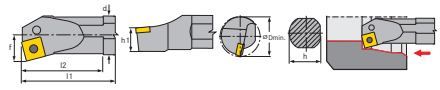
Application:
For longitudinal turning using SN 90° indexable insert

Execution:
- precision-manufactured steel boring bar, S type, 75° pitch angle, 90° tip angle, 0° clearance angle

Advantage:
- extremely stable geometry for longitudinal machining with large feed depths and challenging conditions
- negative body geometry ensures good stability and absorption of force for large cutting depths



Ident. No. 011, 021



ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	h1 (mm)	Tool design Suitable for indexable inserts	Right 17856... Ident. No.		Left 17856... Ident. No.	
S 25 T PSKN R/L 12	31	25	40	300	23	17	12	SN.. 1204..	011	●	016	●
S 32 U PSKN R/L 12	39	32	50	350	30	22	15	SN.. 1204..	021	●	026	●

Prod. Gr. 107

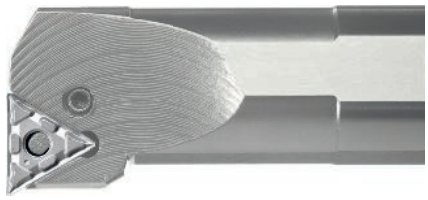
ATORN® PTFN boring bar, negative, steel

For longitudinal turning using TN indexable inserts

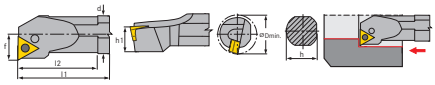
Application:
For longitudinal turning using TN 60° indexable insert

Execution:
- precision-manufactured steel boring bar, T type, 90° pitch angle, 60° tip angle, 0° clearance angle

Advantage:
- three-edge geometry lowers costs per cut
- negative body geometry ensures good stability and absorption of force for large cutting depths



Ident. No. 111, 121, 141, 151



ISO name	D min. (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	h1 (mm)	Tool design Suitable for indexable inserts	Right 17858... Ident. No.		Left 17858... Ident. No.	
S 25 T PTFN R/L 16	31	25	40	300	23	17	11.5	TN.. 1604..	111	●	116	●
S 32 U PTFN R/L 16	39	32	50	350	30	22	15	TN.. 1604..	121	●	126	●
A 25 R PTFN R/L 16	32	25	40	200	23	17	11.5	TN.. 1604..	141	●	146	●
A 32 S PTFN R/L 16	40	32	50	250	15	22	15	TN.. 1604..	151	●	156	●

Prod. Gr. 107

universal turning and drilling tool

for universal use for facing and longitudinal turning, drilling, countersinking and chamfering









Figure shows right-hand bracket

Application:
Series and single-part production for facing and longitudinal turning, drilling, countersinking and chamfering.

Advantages:
- Process/cost optimisation: up to 30% reduction in changeover time
- Problem solver for restricted tool space on the machine
- Wide range of holders and indexable inserts for a large number of materials

ATORN® Universal turning/drilling tool

For facing and longitudinal turning, drilling, countersinking and chamfering

Application:
For face and longitudinal turning, drilling, countersinking and chamfering.

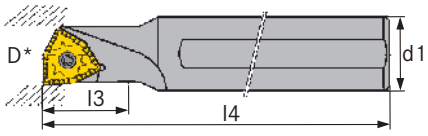
Execution:
- precision-engineered steel holder, bronzed, with internal cooling

Advantage:
- Tool cost minimisation: One tool for 5 types of machining
- Process-time optimisation: up to 30% changeover time reduction

Notes:
Use for internal cooling drilling work.



Figure shows left-hand bracket



D (mm)	Max. drilling depth (D)	Tolerance of hole Ø	l3 (mm)	l4 (mm)	d1 (mm)	Machining direction Suitable for indexable inserts	Universal turning/drilling tool Right 17820... Ident. No.		Left 17820... Ident. No.		clamping screws 17841... Ident. No.	
8	1.5xD	0-0.22 mm	12	80	12	WCHX 0401..	502	●	503	●	225	○
10	1.5xD	0-0.22 mm	15	90	12	WCHX 05T1..	504	●	505	●	226	○
11	1.5xD	0-0.27 mm	16.5	100	16	WCHX 0602..	506	●	507	●	227	●
15	1.5xD	0-0.27 mm	22.5	125	20	WCHX 0703..	508	●	509	●	228	●
18	1.5xD	0-0.33 mm	27	135	25	WCHX 0903..	510	●	511	●	229	●
20	1.5xD	0-0.33 mm	30	150	25	WCHX 10T3..	512	●	513	●	230	●
26	1.5xD	0-0.33 mm	39	180	32	WCHX 1305..	514	●	515	●	231	●

Prod. Gr. 1FN

ATORN® Universal turning/drilling tool

For facing and longitudinal turning, drilling, countersinking and chamfering

Application:
For face and longitudinal turning, drilling, countersinking and chamfering

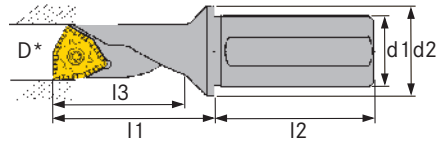
Execution:
- precision-made steel holder, bronzed, with internal cooling

Advantage:
- Tool cost minimisation: One tool for 5 types of machining
- Process-time optimisation: up to 30% changeover time reduction

Notes:
Use for internal cooling drilling work.



Figure shows right-hand bracket



								Universal turning/drilling tool				clamping screws	
							Machining direction	Right		Left			
D min. (mm)	Max. drilling depth (D)	Tolerance of hole Ø	l1 (mm)	l2 (mm)	d1 (mm)	d2 (mm)	Suitable for indexable inserts	17820... Ident. No.		17820... Ident. No.		17841... Ident. No.	
8	2.25xD	0-0.22 mm	22.5	38	10	12	WCHX 0401..	518	●	519	●	225	○
10	2.25xD	0-0.22 mm	28	42	12	16	WCHX 05T1..	520	●	521	●	226	○
11	2.25xD	0-0.27 mm	32	45	16	20	WCHX 0602..	522	●	523	●	227	●
15	2.25xD	0-0.27 mm	43	50	20	25	WCHX 0703..	524	●	525	●	228	●
18	2.25xD	0-0.33 mm	53	56	25	32	WCHX 0903..	526	●	527	●	229	●
20	2.25xD	0-0.33 mm	56	56	25	32	WCHX 10T3..	528	●	529	●	230	●
26	2.25xD	0-0.33 mm	60	60	32	40	WCHX 1305..	530	●	531	●	231	●

Prod. Gr. 1FN

ATORN® Indexable insert

For facing and longitudinal turning, drilling, countersinking and chamfering

Application:
For face and longitudinal turning, drilling, countersinking and chamfering.

Execution:
- **Ident. No. 600–612:** 3-tip indexable insert, uncoated
- **Ident. No. 620–652:** 3-tip indexable insert, coated

Advantage:
- **Ident. No. 600–612:**
  - Innovative cutting geometry with extra sharp cutters for the process-reliable machining of non-ferrous metals
  - Very hard substrate ensures long service life
  - Very good chip breaking by chip breaker
- **Ident. No. 620–632:**
  - Universal and process-reliable use in steel and stainless steel
  - Very good combination of wear resistance and durability
- **Ident. No. 620–652:** Medium chip breaker geometry ensures a broad range of uses
- **Ident. No. 640–652:**
  - Universal and process-reliable use in steel and stainless steel at increased impact stress
  - Optimised for machining in unfavourable cutting conditions



Ident. No. 600–612



Ident. No. 620–632



Ident. No. 640–652

			Carbide type	HW7310		HC7625		HC7535	
			Material to be processed	Non-ferrous metal | Cast metal		Steel | Stainless steel		Steel | Stainless steel	
			Vc in steel ●			100-250 m/min		100-250 m/min	
			Vc in stainless steel ●			50-150 m/min		50-150 m/min	
			Vc in non-ferrous metals ●	200-1000 m/min					
			Vc in cast iron ●	100-180 m/min					
ISO name	Radius (mm)	min./max. ap		17820... Ident. No.		17820... Ident. No.		17820... Ident. No.	
WCHX040102	0.2	1.8-4.0 mm		600	●	620	●	640	●
WCHX040104	0.4	1.8-4.0 mm		601	●	621	●	641	●
WCHX05T102	0.2	2.0-5.0 mm		602	●	622	●	642	●
WCHX05T104	0.4	2.0-5.0 mm		603	●	623	●	643	●
WCHX060202	0.2	2.5-5.5 mm		604	●	624	●	644	●
WCHX060204	0.4	2.5-5.5 mm		605	●	625	●	645	●
WCHX070304	0.4	3.0-6.5 mm		606	●	626	●	646	●
WCHX070308	0.8	3.0-6.5 mm		607	●	627	●	647	●
WCHX090304	0.4	3.5-7.0 mm		608	●	628	●	648	●
WCHX090308	0.8	3.5-7.0 mm		609	●	629	●	649	●
WCHX10T304	0.4	4.0-8.0 mm		610	●	630	●	650	●
WCHX10T308	0.8	4.0-8.0 mm		611	●	631	●	651	●
WCHX130508	0.8	5.0-12.0 mm		612	●	632	●	652	●

Prod. Gr. 1FN



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Miniature range with cutting insert
For demanding serial users















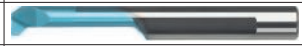
application:
miniature range for boring range of 1–10 mm in all material groups.

HC 5640 P30–P50; K25–K40 PVD TIN-coated cemented-carbide type with high durability for reduced cutting speeds.
minimum measurement in machining: 0.07 mm
HC5615 K10–K30; PVD multi-attachment, TiALN-coated cemented carbide type with high hardness for very high cutting speeds.
minimum measurement in machining: 0.07 mm
HW5615 K10–K30; uncoated cemented carbide type with high hardness for low-high cutting speeds.
minimum measurement in machining: 0.04 mm

Note:
necessary coolant pressure for reliable machining: 20 - 30 bar

advantages:
- extremely wide range for internal boring, copy turning, reverse boring, thread cutting, chamfering and grooving applications
- suitable cemented-carbide quality and coating for all applications
- outstanding service life with HC5615 in heavy-duty materials, stainless steel and titanium, and hard machining up to 65 HRC
- special designs in all variants with short delivery times
- adjustable cantilever length via adjustment screw in holder
- internal cooling ensures reliable machining

	Vc in steel min./max 🔵	Vc in stainless steel min./max. 🟡	Vc in non-ferrous metals min./max. 🟢	Vc in cast iron min./max. 🔴	Vc in special alloys min./max. 🟤	Vc in hardened steel min./max. ⚪
HC5640	**18-50**	**25–30**	**18-70**	**17-23**		
HC5615	**25-60**	**30-45**	**20-85**	20-28	**13-24**	**15-24**
HW5616		20-35	**20-60**	**17-20**		

17118100-192	Miniature cutting insert holder	
17119318-458	Miniature cutting insert type AT HC5615 For longitudinal inside boring	
17120380-516	Miniature cutting insert type AP HC5615 For copying and longitudinal turning	
17121180-216	Miniature cutting insert, type AQ HC5615 For copy and longitudinal turning	
17122172-204	Miniature cutting insert type AU HC5615 For longitudinal inside boring	
17123180-200	Miniature cutting insert type AX HC5615 For reverse internal boring	
17124220-238	Miniature cutting insert type AI HC5615 For thread cutting 60°	
17124124-134	Miniature cutting insert type AI HC5615 For thread cutting 55°	
17124332-346	Miniature cutting insert type AI HC5615 For thread cutting 60°	
17124432-446	Miniature cutting insert type AI HC5615 For thread cutting 55°	
17125124-132	Miniature cutting insert, type AD HC5615 for chamfering and grooving for thread undercutting	
17127140-156	Miniature cutting insert, type AC HC5615 for chamfering and longitudinal internal boring	

17128140-145	Miniature cutting insert, type AW HC5615 for chamfering and profile turning	
17129270-378	Miniature cutting insert, type AG HC5615 For internal recessing	
17130164-192	Miniature cutting insert, type AK HC5615 for internal recessing with radius	
17131152-200	Miniature cutting insert, type AF HC5615 for axial recessing	
17132152-200	Miniature cutting insert, type AF HC5615 for axial recessing	
17133150-170	Miniature cutting insert type AV HC5615 For deep axial grooving	
17134180-208	Miniature cutting insert type AZ HC5615 For axial grooving with radius	

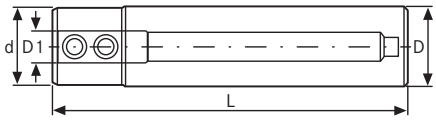
ATORN® Miniature cutting insert holder

Application:
For clamping miniature cutting inserts.

Execution:
- Steel tool holder with two clamping screws and stop screw

Advantage:
- Precision-ground location hole ensures high stability and accuracy
- Adjustable stop screw ensures user-friendly adjustment of protruding length
- High-strength steel carrier for high basic stability





Holder size	D1	L (mm)	D (mm)	Width across flats	d (mm)	17118... Ident. No.	
3	3 mm	88	12	2.5 mm	12	100	○
3	3 mm	75	16	2.5 mm	20	104	○
3	3 mm	88	16	2.5 mm	20	108	○
3	3 mm	88	20	2.5 mm	20	112	○
3	3 mm	88	22	2.5 mm	22	116	○
4	4 mm	88	12	2.5 mm	12	120	○
4	4 mm	75	16	2.5 mm	20	124	○
4	4 mm	88	16	2.5 mm	20	128	○
4	4 mm	88	20	2.5 mm	20	132	○
4	4 mm	88	22	2.5 mm	22	136	○
5	5 mm	88	12	2.5 mm	12	140	○
5	5 mm	75	16	2.5 mm	20	144	○
5	5 mm	88	16	2.5 mm	20	148	○
5	5 mm	88	20	2.5 mm	20	152	○
5	5 mm	88	22	2.5 mm	22	156	○
6	6 mm	75	16	2.5 mm	20	160	○
6	6 mm	88	16	2.5 mm	20	164	○
6	6 mm	88	20	2.5 mm	20	168	○
6	6 mm	88	22	2.5 mm	22	172	○
7	7 mm	88	16	2.5 mm	20	176	○
7	7 mm	88	20	2.5 mm	20	180	○
8	8 mm	88	16	2.5 mm	20	184	○
8	8 mm	88	20	2.5 mm	20	188	○
10	10 mm	88	20	2.5 mm	20	192	○

Prod. Gr. 1FA

ATORN® Miniature cutting insert type AT

For longitudinal internal boring

Application:

Ident. No. 100–240: For longitudinal internal threading (boring) for the material groups of steel, (stainless steel), cast iron and non-ferrous metals at low cutting speeds or under challenging cutting conditions.

Ident. No. 244–314: For longitudinal inside boring in steel, (stainless steel), cast iron and non-ferrous metals material groups at low cutting speeds or in unfavourable cutting conditions.

Ident. No. 318–602: For longitudinal internal boring in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Ident. No. 606–890: For longitudinal internal boring in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Execution:

- **Ident. No. 100–240:** VHM cutting insert with 96° pitch angle with internal cooling
- **Ident. No. 244–890:** Solid carbide cutting insert with 96° attack angle with internal cooling

Advantage:

- **Ident. No. 100–240:**
  - tough cemented carbide type for broad application field
  - stable geometry, ideal for longitudinal internal threading (boring)
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 244–314:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 244–890:** Stable geometry optimised for longitudinal internal boring machining
- **Ident. No. 318–602:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 318–890:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 606–890:** Extremely sharp cutters ensure a process-reliable cut



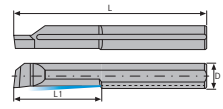
Ident. No. 100–314

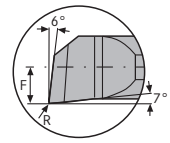


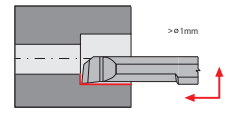
Ident. No. 318–602



Ident. No. 606–890







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						Machining direction	Right		Left		Right		Left		Right		Left	
						Carbide type	HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
						Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	F (mm)	D min. (mm)		17119... Ident. No.		17119... Ident. No.		17119... Ident. No.		17119... Ident. No.		17119... Ident. No.		17119... Ident. No.	
3	39	4	0.05	0.5	1		100	○	244	○	318	○	462	○	606	○	750	○
3	39	6	0.1	0.7	1.5		104	○	246	○	322	○	466	○	610	○	754	○
3	39	10	0.05	0.8	2.1		108	○	248	○	326	○	470	○	614	○	758	○
3	39	5	0.15	0.8	2.1		112	○	250	○	330	○	474	○	618	○	762	○
3	39	10	0.15	0.8	2.1		116	○	252	○	334	○	478	○	622	○	766	○
3	39	10	0.05	1.3	3.1		120	○	254	○	338	○	482	○	626	○	770	○
3	39	15	0.05	1.3	3.1		124	○	256	○	342	○	486	○	630	○	774	○
3	39	15	0.1	1.3	3.1		128	○	258	○	346	○	490	○	634	○	778	○
3	39	10	0.2	1.3	3.1		132	○	260	○	350	○	494	○	638	○	782	○
3	39	15	0.2	1.3	3.1		136	○	262	○	354	○	498	○	642	○	786	○
4	51	15	0.05	1.7	4.1		140	○	264	○	358	○	502	○	646	○	790	○
4	51	10	0.1	1.7	4.1		144	○	266	○	362	○	506	○	650	○	794	○
4	51	15	0.1	1.7	4.1		148	○	268	○	366	○	510	○	654	○	798	○
4	51	22	0.1	1.7	4.1		152	○	270	○	370	○	514	○	658	○	802	○
4	51	10	0.2	1.7	4.1		156	○	272	○	374	○	518	○	662	○	806	○
4	51	15	0.2	1.7	4.1		160	○	274	○	378	○	522	○	666	○	810	○
4	51	22	0.2	1.7	4.1		164	○	276	○	382	○	526	○	670	○	814	○
5	51	15	0.05	2.1	5.1		168	○	278	○	386	○	530	○	674	○	818	○
5	51	15	0.1	2.1	5.1		172	○	280	○	390	○	534	○	678	○	822	○
5	51	22	0.1	2.1	5.1		176	○	282	○	394	○	538	○	682	○	826	○
5	76	30	0.1	2.1	5.1		180	○	284	○	398	○	542	○	686	○	830	○
5	51	15	0.2	2.1	5.1		184	○	286	○	402	○	546	○	690	○	834	○
5	51	22	0.2	2.1	5.1		188	○	288	○	406	○	550	○	694	○	838	○
5	76	30	0.2	2.1	5.1		192	○	290	○	410	○	554	○	698	○	842	○
6	51	15	0.05	2.8	6.1		196	○	292	○	414	○	558	○	702	○	846	○
6	51	15	0.1	2.8	6.1		200	○	294	○	418	○	562	○	706	○	850	○
6	51	15	0.2	2.8	6.1		204	○	296	○	422	○	566	○	710	○	854	○
6	51	22	0.2	2.8	6.1		208	○	298	○	426	○	570	○	714	○	858	○
6	58	30	0.2	2.8	6.1		212	○	300	○	430	○	574	○	718	○	862	○
6	76	35	0.2	2.8	6.1		216	○	302	○	434	○	578	○	722	○	866	○
7	62	22	0.2	3.3	7.1		220	○	304	○	438	○	582	○	726	○	870	○
7	62	30	0.2	3.3	7.1		224	○	306	○	442	○	586	○	730	○	874	○
8	64	15	0.2	3.8	8.1		228	○	308	○	446	○	590	○	734	○	878	○
8	64	22	0.2	3.8	8.1		232	○	310	○	450	○	594	○	738	○	882	○
8	76	35	0.2	3.8	8.1		236	○	312	○	454	○	598	○	742	○	886	○
10	73	35	0.2	4.8	10.1		240	○	314	○	458	○	602	○	746	○	890	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AP

For copy and longitudinal turning

Application:

Ident. No. 100–376: For copying and longitudinal turning in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Ident. No. 380–516: For copying and longitudinal turning in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Ident. No. 520–656: For copy and longitudinal turning in the material groups steel, stainless steel and special alloys, hard machining up to 65 HRC at high cutting speeds and under average cutting conditions.

Ident. No. 660–936: For copy and longitudinal turning in the material groups steel and (stainless steel) at low to high cutting speeds and under average cutting conditions.

Execution:

- **Ident. No. 100–516:** Solid carbide cutting insert with 98° attack angle with internal cooling
- **Ident. No. 520–936:** Solid carbide cutting insert with 98° working angle with internal cooling

Advantage:

- **Ident. No. 100–376:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 100–516:** Stable geometry optimised for internal boring machining
- **Ident. No. 380–656:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 380–936:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 520–936:** Stable geometry, ideal for inside turning
- **Ident. No. 660–936:** Extremely sharp blades ensure process reliability for cutting



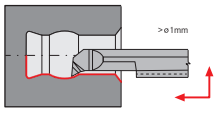
Ident. No. 100–376

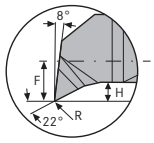


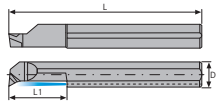
Ident. No. 380–656



Ident. No. 660–936







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Machining direction							Right		Left		Right		Left		Right		Left	
Carbide type							HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed							Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	H (mm)	F (mm)	D min. (mm)	17120... Ident. No.		17120... Ident. No.		17120... Ident. No.		17120... Ident. No.		17120... Ident. No.		17120... Ident. No.	
3	39	4	0.05	0.2	0.5	1	100	○	240	○	380	○	520	○	660	○	800	○
3	39	6	0.1	0.3	0.7	1.5	104	○	244	○	384	○	524	○	664	○	804	○
3	39	10	0.1	0.3	0.7	1.5	108	○	248	○	388	○	528	○	668	○	808	○
3	39	10	0.05	0.5	0.8	2.1	112	○	252	○	392	○	532	○	672	○	812	○
3	39	10	0.1	0.5	0.8	2.1	116	○	256	○	396	○	536	○	676	○	816	○
3	39	5	0.15	0.5	0.8	2.1	120	○	260	○	400	○	540	○	680	○	820	○
3	39	10	0.15	0.5	0.8	2.1	124	○	264	○	404	○	544	○	684	○	824	○
3	39	15	0.15	0.5	0.8	2.1	128	○	268	○	408	○	548	○	688	○	828	○
3	39	10	0.05	0.7	1.3	3.1	132	○	272	○	412	○	552	○	692	○	832	○
3	39	15	0.05	0.7	1.3	3.1	136	○	276	○	416	○	556	○	696	○	836	○
3	39	15	0.1	0.7	1.3	3.1	140	○	280	○	420	○	560	○	700	○	840	○
3	47	22	0.1	0.7	1.3	3.1	144	○	284	○	424	○	564	○	704	○	844	○
3	39	10	0.2	0.7	1.3	3.1	148	○	288	○	428	○	568	○	708	○	848	○
3	39	15	0.2	0.7	1.3	3.1	152	○	292	○	432	○	572	○	712	○	852	○
3	47	22	0.2	0.7	1.3	3.1	156	○	296	○	436	○	576	○	716	○	856	○
4	51	15	0.1	0.8	1.7	4.1	160	○	300	○	440	○	580	○	720	○	860	○
4	51	22	0.1	0.8	1.7	4.1	164	○	304	○	444	○	584	○	724	○	864	○
4	51	10	0.2	0.8	1.7	4.1	168	○	308	○	448	○	588	○	728	○	868	○
4	51	15	0.2	0.8	1.7	4.1	172	○	312	○	452	○	592	○	732	○	872	○
4	51	22	0.2	0.8	1.7	4.1	176	○	316	○	456	○	596	○	736	○	876	○
5	51	22	0.1	1.2	2.1	5.1	180	○	320	○	460	○	600	○	740	○	880	○
5	76	30	0.1	1.2	2.1	5.1	184	○	324	○	464	○	604	○	744	○	884	○
5	51	15	0.2	1.2	2.1	5.1	188	○	328	○	468	○	608	○	748	○	888	○
5	51	22	0.2	1.2	2.1	5.1	192	○	332	○	472	○	612	○	752	○	892	○
5	76	30	0.2	1.2	2.1	5.1	196	○	336	○	476	○	616	○	756	○	896	○
6	51	15	0.2	1.4	2.8	6.1	200	○	340	○	480	○	620	○	760	○	900	○
6	51	22	0.2	1.4	2.8	6.1	204	○	344	○	484	○	624	○	764	○	904	○
6	76	30	0.2	1.4	2.8	6.1	208	○	348	○	488	○	628	○	768	○	908	○
7	62	22	0.2	1.5	3.3	7.1	212	○	352	○	492	○	632	○	772	○	912	○
7	62	30	0.2	1.5	3.3	7.1	216	○	356	○	496	○	636	○	776	○	916	○
7	62	35	0.2	1.5	3.3	7.1	220	○	360	○	500	○	640	○	780	○	920	○
8	64	15	0.2	1.6	3.8	8.1	224	○	364	○	504	○	644	○	784	○	924	○
8	64	22	0.2	1.6	3.8	8.1	228	○	368	○	508	○	648	○	788	○	928	○
8	76	35	0.2	1.6	3.8	8.1	232	○	372	○	512	○	652	○	792	○	932	○
10	73	35	0.2	2	4.8	10.1	236	○	376	○	516	○	656	○	796	○	936	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AQ

For copy and longitudinal turning

Application:

Ident. No. 100–176: For copy and longitudinal turning in the material groups steel and (stainless steel) at low to high cutting speeds and under average cutting conditions.

Ident. No. 180–256: For copy and longitudinal turning in the material groups steel, stainless steel and special alloys, hard machining up to 65 HRC at high cutting speeds and under average cutting conditions.

Ident. No. 260–318: For copying and longitudinal turning in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Execution:

- **Ident. No. 100–256:** Solid carbide cutting insert with 98° working angle with internal cooling
- **Ident. No. 260–318:** Solid carbide cutting insert with 98° attack angle with internal cooling

Advantage:

- **Ident. No. 100–176:**
  - Tough cemented carbide grade ensures a broad scope of application
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 100–256:** Stable geometry, ideal for inside turning
- **Ident. No. 180–256:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 180–318:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 260–318:**
  - Stable geometry optimised for internal boring machining
  - Extremely sharp cutters ensure a process-reliable cut



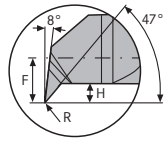
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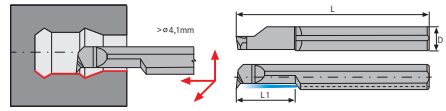


Ident. No. 180–256



Ident. No. 260–318





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							Machining direction	Right	Left	Right	Left	Right	Left
							Carbide type	HC5640	HC5640	HC5615	HC5615	HW5615	HW5615
							Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal	Steel | Stainless steel | Non-ferrous metal | Cast metal	Steel | Stainless steel | Special alloy | Hardened material	Steel | Stainless steel | Special alloy | Hardened material	Stainless steel | Non-ferrous metal	Stainless steel | Non-ferrous metal
D (mm)	L (mm)	L1 (mm)	R (mm)	H (mm)	F (mm)	D min. (mm)		17121... Ident. No.	17121... Ident. No.	17121... Ident. No.	17121... Ident. No.	17121... Ident. No.	17121... Ident. No.
4	51	10	0.2	0.8	1.8	4.1		100 ○	140 ○	180 ○	220 ○	260 ○	300 ○
4	51	15	0.2	0.8	1.8	4.1		104 ○	144 ○	184 ○	224 ○	264 ○	302 ○
4	51	22	0.2	0.8	1.8	4.1		108 ○	148 ○	188 ○	228 ○	268 ○	304 ○
5	51	15	0.2	1	2.3	5.1		112 ○	152 ○	192 ○	232 ○	272 ○	306 ○
5	51	22	0.2	1	2.3	5.1		116 ○	156 ○	196 ○	236 ○	276 ○	308 ○
6	51	15	0.2	1.4	2.8	6.1		120 ○	160 ○	200 ○	240 ○	280 ○	310 ○
6	51	22	0.2	1.4	2.8	6.1		124 ○	164 ○	204 ○	244 ○	284 ○	312 ○
6	58	30	0.2	1.4	2.8	6.1		128 ○	168 ○	208 ○	248 ○	288 ○	314 ○
8	64	22	0.2	1.6	3.8	8.1		132 ○	172 ○	212 ○	252 ○	292 ○	316 ○
8	64	27	0.2	2	3.8	8.1		136 ○	176 ○	216 ○	256 ○	296 ○	318 ○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AU

For longitudinal internal boring

Application:

Ident. No. 100–132, 244–276: For longitudinal internal boring in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Ident. No. 172–204: For longitudinal internal boring in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Execution:

- Solid carbide cutting insert with 90° attack angle with internal cooling

Advantage:

- Stable geometry optimised for internal boring machining
- **Ident. No. 100–132:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 172–204:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 172–276:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 244–276:** Extremely sharp cutters ensure a process-reliable cut



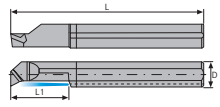
Ident. No. 100–132

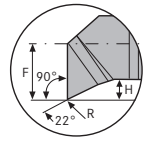


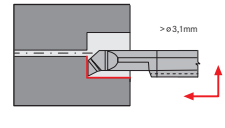
Ident. No. 172–204



Ident. No. 244–276







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								Machining direction	Right	Right	Right
								Carbide type	HC5640	HC5615	HW5615
								Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal	Steel | Stainless steel | Special alloy | Hardened material	Stainless steel | Non-ferrous metal
D (mm)	L (mm)	L1 (mm)	R (mm)	H (mm)	F (mm)	D min. (mm)	Holder size		17122... Ident. No.	17122... Ident. No.	17122... Ident. No.
3	39	10	0.05	0.4	1.3	3.1	3		100 ○	172 ○	244 ○
3	39	15	0.05	0.4	1.3	3.1	3		104 ○	176 ○	248 ○
4	51	10	0.1	0.5	1.7	4.1	4		108 ○	180 ○	252 ○
4	51	15	0.1	0.5	1.7	4.1	4		112 ○	184 ○	256 ○
5	51	15	0.15	0.7	2.1	5.1	5		116 ○	188 ○	260 ○
5	51	22	0.15	0.7	2.1	5.1	5		120 ○	192 ○	264 ○
6	51	15	0.15	0.9	2.8	6.1	6		124 ○	196 ○	268 ○
6	51	22	0.15	0.9	2.8	6.1	6		128 ○	200 ○	272 ○
8	64	22	0.2	1.1	3.8	8.1	8		132 ○	204 ○	276 ○

Prod. Gr. 1FB

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® Miniature cutting insert type AX

For reverse internal boring

Application:

Ident. No. 100–170, 234–258: For reverse internal boring in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Ident. No. 180–230: For reverse internal boring in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Execution:

- Solid carbide cutting insert with internal cooling

Advantage:

- Stable geometry optimised for reverse internal boring machining
- **Ident. No. 100–170:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 180–230:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 180–258:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 234–258:** Extremely sharp cutters ensure a process-reliable cut



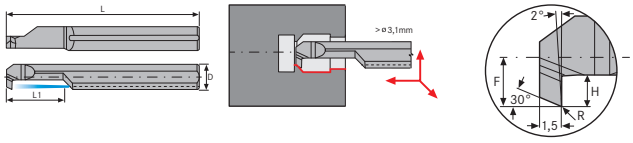
Ident. No. 100–170



Ident. No. 180–230



Ident. No. 234–258



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Machining direction							Right		Left		Right		Left		Right		Left	
Carbide type							HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed							Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	H (mm)	F (mm)	D min. (mm)	17123... Ident. No.		17123... Ident. No.		17123... Ident. No.		17123... Ident. No.		17123... Ident. No.		17123... Ident. No.	
4	51	10	0.1	0.5	1.3	3.1	100	○	150	○	180	○	210	○	234	○	248	○
4	51	10	0.15	0.8	1.6	4.1	104	○	154	○	184	○	214	○	236	○	250	○
4	51	15	0.15	0.8	1.6	4.1	108	○	158	○	188	○	218	○	238	○	252	○
5	51	15	0.2	1	2.2	5.1	112	○	162	○	192	○	222	○	240	○	254	○
5	51	22	0.2	1	2.2	5.1	116	○	166	○	196	○	226	○	242	○	256	○
6	51	15	0.2	1.8	2.8	6.1	120	○	170	○	200	○	230	○	244	○	258	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AI

For thread turning, 60° partial profile

Application:

Ident. No. 180–218, 260–298: For thread cutting 60° in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Ident. No. 220–258: For thread cutting 60° in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Execution:

- Solid carbide cutting insert 60° with internal cooling

Advantage:

- Stable geometry optimised for female thread cutting machining
- **Ident. No. 180–218:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 220–258:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 220–298:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 260–298:** Extremely sharp cutters ensure a process-reliable cut



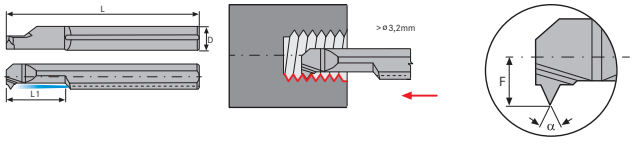
Ident. No. 180–218



Ident. No. 220–258



Ident. No. 260–298



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Machining direction							Right		Left		Right		Left		Right		Left	
Carbide type							HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed							Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	α (Degree)	L (mm)	L1 (mm)	Min./max. number of thread starts per inch	Min./max. pitch	F (mm)	17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.	
3	60	39	4.8	-	0.25-0.35 mm	0.55	180	○	200	○	220	○	240	○	260	○	280	○
3	60	39	6.3	-	0.35-0.45 mm	0.65	182	○	202	○	222	○	242	○	262	○	282	○
3	60	39	8	-	0.45-0.7 mm	1	184	○	204	○	224	○	244	○	264	○	284	○
3	60	39	15	32-24	0.8-1.0 mm	1.4	186	○	206	○	226	○	246	○	266	○	286	○
4	60	51	15	32-24	0.8-1.0 mm	1.8	188	○	208	○	228	○	248	○	268	○	288	○
5	60	51	15	-	1.0-1.25 mm	2.3	190	○	210	○	230	○	250	○	270	○	290	○
5	60	51	22	-	1.0-1.26 mm	2.3	192	○	212	○	232	○	252	○	272	○	292	○
6	60	51	15	-	1.0-1.5 mm	2.6	194	○	214	○	234	○	254	○	274	○	294	○
6	60	51	22	-	1.0-1.6 mm	2.6	196	○	216	○	236	●	256	○	276	○	296	○
8	60	64	22	-	1.0-2.0 mm	3.6	198	○	218	○	238	○	258	○	278	○	298	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AI

For thread turning, 55° partial profile

Application:

Ident. No. 100–122, 148–170: For thread cutting 55° in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Ident. No. 124–146: For thread cutting 55° in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Execution:

- Solid carbide cutting insert 55° with internal cooling

Advantage:

- Stable geometry optimised for female thread cutting machining
- **Ident. No. 100–122:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 124–146:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 124–170:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 148–170:** Extremely sharp cutters ensure a process-reliable cut



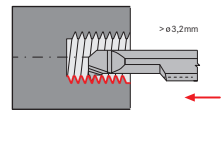
Ident. No. 100–122

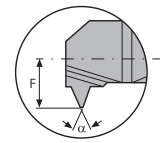


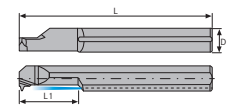
Ident. No. 124–146



Ident. No. 148–170







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Machining direction							Right		Left		Right		Left		Right		Left	
Carbide type							HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed							Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	α (Degree)	L (mm)	L1 (mm)	Min./max. pitch	F (mm)	D min. (mm)	17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.	
3	55	39	15	0.5-1.0 mm	1.4	3.2	100	○	112	○	124	○	136	○	148	○	160	○
4	55	51	15	0.5-1.0 mm	1.8	4.1	102	○	114	○	126	○	138	○	150	○	162	○
5	55	51	15	0.5-1.25 mm	2.3	5.1	104	○	116	○	128	○	140	○	152	○	164	○
5	55	51	22	0.5-1.26 mm	2.3	5.1	106	○	118	○	130	○	142	○	154	○	166	○
6	55	51	15	0.5-1.5 mm	2.6	6	108	○	120	○	132	○	144	○	156	○	168	○
6	55	51	22	0.5-1.6 mm	2.6	6	110	○	122	○	134	●	146	○	158	○	170	○

Prod. Gr. 1FB



ATORN® Miniature cutting insert type AI

For thread turning, 60° full profile

Application:
Ident. No. 300–330, 364–394: For thread cutting 60° in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.
Ident. No. 332–362: For thread cutting 60° in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

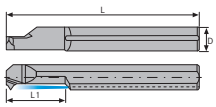
Execution:
- Solid carbide cutting insert 60° with internal cooling

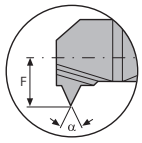
Advantage:
- Exact replication of the thread flanks with exact profile presentation
- No de-burring of thread required due to full-profile geometry
- **Ident. No. 300–330:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 332–362:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 332–394:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 364–394:** Extremely sharp cutters ensure a process-reliable cut

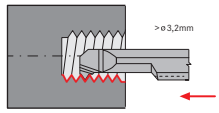

Ident. No. 300–330


Ident. No. 332–362


Ident. No. 364–394







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							Machining direction	Right		Left		Right		Left		Right		Left	
							Carbide type	HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
							Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	α (Degree)	Suitable for screw thread	L (mm)	L1 (mm)	F (mm)	D min. (mm)		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.	
3	60	M4 x 0.5	39	15	1.4	3.2		300	○	316	○	332	○	348	○	364	○	380	○
3	60	M4 x 0.7	39	15	1.4	3.2		302	○	318	○	334	○	350	○	366	○	382	○
3	60	M4.5 x 0.75	39	15	1.4	3.2		304	○	320	○	336	○	352	○	368	○	384	○
4	60	M5 x 0.5	51	15	1.8	4.1		306	○	322	○	338	○	354	○	370	○	386	○
4	60	M5 x 0.75	51	15	1.8	4.1		308	○	324	○	340	○	356	○	372	○	388	○
4	60	M5 x 0.8	51	15	1.8	4.1		310	○	326	○	342	○	358	○	374	○	390	○
5	60	M6 x 1	51	15	2.2	4.9		312	○	328	○	344	○	360	○	376	○	392	○
6	60	M8 x 1.25	51	22	2.8	6.1		314	○	330	○	346	○	362	○	378	○	394	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AI

For thread turning, 55° full profile

Application:
Ident. No. 400–430: For thread cutting 55° in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.
Ident. No. 432–462: For thread cutting 55° in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.
Ident. No. 464–494: For 55° thread cutting in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

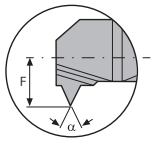
Execution:
- **Ident. No. 400–462:** Solid carbide cutting insert 55° with internal cooling
- **Ident. No. 464–494:** solid carbide 55° cutting insert with inner cooling

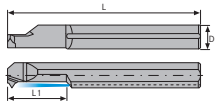
Advantage:
- **Ident. No. 400–414:**
  - Exact replication of the thread flanks with exact profile presentation
  - No de-burring of thread required due to full-profile geometry
- **Ident. No. 400–430:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 416–462:** Exact replication of thread flanks with exact profile presentation, no de-burring of thread required due to full-profile geometry
- **Ident. No. 432–462:**
  - Very hard cemented carbide grade ensures low wear
  - Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 464–494:**
  - very hard cemented carbide type ensures low wear
  - precise mapping of the thread flanges with exact profile illustration, no need to deburr the thread thanks to full profile geometry
  - extremely sharp cutting edges ensure cutting with process reliability

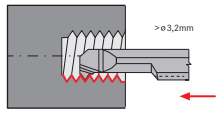

Ident. No. 400–430


Ident. No. 432–462


Ident. No. 464–494







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						Machining direction	Right		Left		Right		Left		Right		Left	
						Carbide type	HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
						Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	α (Degree)	Suitable for screw thread	L (mm)	F (mm)	D min. (mm)		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.	
3	55	UNF 8"-36	39	1.4	3.2		400	○	416	○	432	○	448	○	464	○	480	○
3	55	UNC 8"-32	39	1.4	3.2		402	○	418	○	434	○	450	○	466	○	482	○
4	55	UNS 12"-36	51	1.8	4.1		404	○	420	○	436	○	452	○	468	○	484	○
4	55	UNEF 12"-32	51	1.8	4.1		406	○	422	○	438	○	454	○	470	○	486	○
5	55	UNF 1/4"-28	51	2.2	4.9		408	○	424	○	440	○	456	○	472	○	488	○

						Machining direction	Right		Left		Right		Left		Right		Left	
						Carbide type	HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
						Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	α (Degree)	Suitable for screw thread	L (mm)	F (mm)	D min. (mm)		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.	
5	55	UNC 1/4"-20	51	2.3	5		410	○	426	○	442	○	458	○	474	○	490	○
6	55	UNF 5/16"-24	51	2.8	6.5		412	○	428	○	444	○	460	○	476	○	492	○
6	55	UNC 5/16"-18	51	2.8	6.2		414	○	430	○	446	○	462	○	478	○	494	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AI

For trapezoidal thread turning, 30° full profile

Application:

Ident. No. 600–622, 648–670: For 30° trapezoidal thread cutting in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

Ident. No. 624–646: For 30° trapezoidal thread cutting in the material groups of steel, stainless steel, special alloys, hard machining up to 65 HRC with high cutting speeds and medium cutting conditions.

Execution:

- solid carbide 30° cutting insert with inner cooling

Advantage:

- precise mapping of the thread flanges with exact profile illustration
- no need to deburr the thread thanks to full profile geometry
- **Ident. No. 600–622:**
  - tough cemented carbide type for broad application field
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 624–646:** innovative coating technology for universal use with extremely demanding service life requirements
- **Ident. No. 624–670:** very hard cemented carbide type ensures low wear
- **Ident. No. 648–670:** extremely sharp cutting edges ensure cutting with process reliability



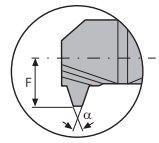
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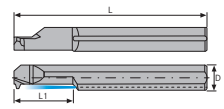


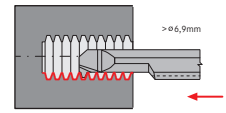
Ident. No. 624–646



Ident. No. 648–670







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								Machining direction	Right		Left		Right		Left		Right		Left	
								Carbide type	HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
								Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	α (Degree)	Suitable for screw thread	Suitable for trapezoid thread pitch (mm)	L (mm)	L1 (mm)	F (mm)	D min. (mm)		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.		17124... Ident. No.	
7	30	Tr9 x 2 | Tr10 x 2 | Tr11 x 2 | Tr12 x 2	2	62	25	3.2	6.9		600	○	612	○	624	○	636	○	648	○	660	○
10	30	Tr14 x 2 | Tr16 x 2 | Tr18 x 2 | Tr20 x 2	2	73	35	4.8	11		602	○	614	○	626	○	638	○	650	○	662	○
7	30	Tr11 x 3 | Tr12 x 3	3	62	35	3.3	7.5		604	○	616	○	628	○	640	○	652	○	664	○
10	30	Tr14 x 3 | Tr22 x 3 | Tr24 x 3 | Tr26 x 3 | Tr28 x 3	3	73	35	4.8	10.5		606	○	618	○	630	○	642	○	654	○	666	○
10	30	Tr16 x 4 | Tr18 x 4 | Tr20 x 4	4	105	45	4.8	11.5		608	○	620	○	632	○	644	○	656	○	668	○
10	30	Tr22 x 5 | Tr24 x 5 | Tr28 x 5	5	105	55	4.8	11		610	○	622	○	634	○	646	○	658	○	670	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AD

For chamfering and recessing thread undercuts

Application:

Ident. No. 100–120, 148–168: For chamfering and grooving for thread undercutting in the material groups of steel and (stainless steel) material groups with low to high cutting speeds and medium cutting conditions.

Ident. No. 124–144: For chamfering and grooving for thread undercutting in the material groups of steel, stainless steel, special alloys, hard machining up to 65 HRC with high cutting speeds and medium cutting conditions.

Execution:

- solid carbide 93° cutting insert with inner cooling

Advantage:

- universal geometry for grooves, chamfers and thread undercuts
- **Ident. No. 100–120:**
  - tough cemented carbide type for broad application field
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 124–144:** innovative coating technology for universal use with extremely demanding service life requirements
- **Ident. No. 124–168:** very hard cemented carbide type ensures low wear
- **Ident. No. 148–168:** extremely sharp cutting edges ensure cutting with process reliability



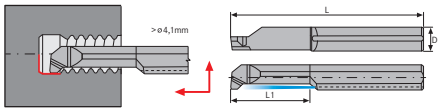
Ident. No. 100–120

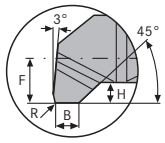


Ident. No. 124–144



Ident. No. 148–168





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Machining direction								Right		Left		Right		Left		Right		Left	
Carbide type								HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed								Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	F (mm)	B (mm)	H (mm)	D min. (mm)	17125... Ident. No.		17125... Ident. No.		17125... Ident. No.		17125... Ident. No.		17125... Ident. No.		17125... Ident. No.	
4	51	18	0.5	1.8	1.5	0.8	4.1	100	○	112	○	124	○	136	○	148	○	160	○
5	51	24	0.5	2.3	1.5	1.2	5.1	104	○	116	○	128	○	140	○	152	○	164	○
6	58	27	0.5	2.8	1.5	1.4	6.1	108	○	120	○	132	○	144	○	156	○	168	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AC

For chamfering, 90°

Application:

Ident. No. 100–136, 180–216: For chamfering and longitudinal internal boring in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

Ident. No. 140–176: For chamfering and longitudinal boring in the material groups of steel, stainless steel, special alloys, hard machining up to 65 HRC with high cutting speeds and medium cutting conditions.

Execution:

- solid carbide cutting insert, 90° chamfer angle with inner cooling

Advantage:

- universal geometry for chamfering and longitudinal internal boring
- **Ident. No. 100–136:**
  - tough cemented carbide type for broad application field
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 140–176:** innovative coating technology for universal use with extremely demanding service life requirements
- **Ident. No. 140–216:** very hard cemented carbide type ensures low wear
- **Ident. No. 180–216:** extremely sharp cutting edges ensure cutting with process reliability



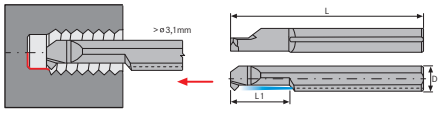
Ident. No. 100–136

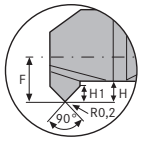


Ident. No. 140–176



Ident. No. 180–216





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Machining direction								Right		Left		Right		Left		Right		Left	
Carbide type								HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed								Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	F (mm)	H (mm)	H1 (mm)	D min. (mm)	17127... Ident. No.		17127... Ident. No.		17127... Ident. No.		17127... Ident. No.		17127... Ident. No.		17127... Ident. No.	
3	39	10	0.2	1.3	0.7	0.3	3.1	100	○	120	○	140	○	160	○	180	○	200	○
4	51	15	0.2	1.7	0.8	0.4	4.1	104	○	124	○	144	○	164	○	184	○	204	○
5	51	15	0.2	2.1	1.2	0.7	5.1	108	○	128	○	148	○	168	○	188	○	208	○
6	51	15	0.2	2.8	1.4	0.7	6.1	112	○	132	○	152	○	172	○	192	○	212	○
7	62	20	0.2	3.3	1.5	0.8	7.1	116	○	136	○	156	○	176	○	196	○	216	○

Prod. Gr. 1FB

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® Miniature cutting insert type AW

For chamfering and profile turning

Application:

Ident. No. 100–135, 160–175: For chamfering and profile turning in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

Ident. No. 140–155: For chamfering and profile turning in the material groups of steel, stainless steel, special alloys, hard machining up to 65 HRC with high cutting speeds and medium cutting conditions.

Execution:

- solid carbide cutting insert, 45° chamfer angle with inner cooling

Advantage:

- user-friendly chamfering and profile turning and precise chamfers with excellent finish quality
- **Ident. No. 100–135:**
  - tough cemented carbide type for broad application field
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 140–155:** innovative coating technology for universal use with extremely demanding service life requirements
- **Ident. No. 140–175:** very hard cemented carbide type ensures low wear
- **Ident. No. 160–175:** extremely sharp cutting edges ensure cutting with process reliability



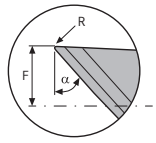
Ident. No. 100–135

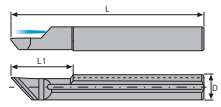


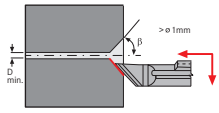
Ident. No. 140–155



Ident. No. 160–175







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Machining direction									Right		Left		Right		Left		Right		Left	
Carbide type									HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed									Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	β (Degree)	α (Degree)	F (mm)	D min. (mm)	Holder size	17128... Ident. No.		17128... Ident. No.		17128... Ident. No.		17128... Ident. No.		17128... Ident. No.		17128... Ident. No.	
6	51	15	0.2	45	45	2.3	1	6	100	○	131	○	140	○	150	○	160	○	170	○
6	51	15	0.2	30	60	2.3	1	6	121	○	135	○	145	○	155	○	165	○	175	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AG

For internal recessing

Application:

Ident. No. 100–208: For inner grooves in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

Ident. No. 212–266, 494–714: For internal recessing in the material groups steel and (stainless steel) at low to high cutting speeds and under average cutting conditions.

Ident. No. 270–490: For internal recessing in the material groups steel, stainless steel and special alloys, hard machining up to 65 HRC at high cutting speeds and under average cutting conditions.

Execution:

- **Ident. No. 100–208:** solid carbide cutting insert with inner cooling
- **Ident. No. 212–714:** Solid carbide cutting insert with internal cooling

Advantage:

- **Ident. No. 100–208:**
  - tough cemented carbide type for broad application field
  - stable geometry for cutting insert
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 212–266:**
  - Tough cemented carbide grade for a broad scope of application
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 212–714:** Stable geometry for the cutting insert
- **Ident. No. 270–490:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 270–714:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 494–714:** Extremely sharp blades ensure process reliability for cutting



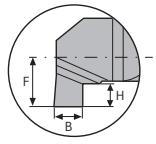
Ident. No. 100–266

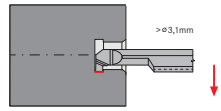


Ident. No. 270–490



Ident. No. 494–714





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Machining direction							Right		Left		Right		Left		Right		Left	
Carbide type							HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed							Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	H (mm)	B (mm)	F (mm)	D min. (mm)	17129... Ident. No.		17129... Ident. No.		17129... Ident. No.		17129... Ident. No.		17129... Ident. No.		17129... Ident. No.	
3	39	10	0.6	0.7	1.3	3.1	100	○	212	○	270	○	382	○	494	○	606	○
4	51	10	1	1	1.7	4.1	104	○	214	○	274	○	386	○	498	○	610	○
4	51	15	1	1	1.7	4.1	108	○	216	○	278	○	390	○	502	○	614	○
4	51	10	1	1.5	1.7	4.1	112	○	218	○	282	○	394	○	506	○	618	○
5	51	15	1.2	1	2.3	5.1	116	○	220	○	286	○	398	○	510	○	622	○
5	51	22	1.2	1	2.3	5.1	120	○	222	○	290	○	402	○	514	○	626	○
5	51	15	1.2	1.5	2.3	5.1	124	○	224	○	294	○	406	○	518	○	630	○
5	51	22	1.2	1.5	2.3	5.1	128	○	226	○	298	○	410	○	522	○	634	○
5	51	15	1.2	2	2.3	5.1	132	○	228	○	302	○	414	○	526	○	638	○
5	51	22	1.2	2	2.3	5.1	136	○	230	○	306	○	418	○	530	○	642	○
6	51	15	1.4	1	2.8	6.1	140	○	232	○	310	○	422	○	534	○	646	○

Machining direction							Right		Left		Right		Left		Right		Left	
Carbide type							HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed							Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	H (mm)	B (mm)	F (mm)	D min. (mm)	17129... Ident. No.		17129... Ident. No.		17129... Ident. No.		17129... Ident. No.		17129... Ident. No.		17129... Ident. No.	
6	51	22	1.4	1	2.8	6.1	144	○	234	○	314	○	426	○	538	○	650	○
6	51	15	1.4	1.5	2.8	6.1	148	○	236	○	318	○	430	○	542	○	654	○
6	51	22	1.4	1.5	2.8	6.1	152	○	238	○	322	○	434	○	546	○	658	○
6	51	15	1.4	2	2.8	6.1	156	○	240	○	326	○	438	○	550	○	662	○
6	51	22	1.4	2	2.8	6.1	160	○	242	○	330	○	442	○	554	○	666	○
7	62	15	2.5	1	3.3	7.1	164	○	244	○	334	○	446	○	558	○	670	○
7	62	22	2.5	1	3.3	7.1	168	○	246	○	338	○	450	○	562	○	674	○
7	62	30	2.5	1	3.3	7.1	172	○	248	○	342	○	454	○	566	○	678	○
7	62	15	2.5	1.5	3.3	7.1	176	○	250	○	346	○	458	○	570	○	682	○
7	62	22	2.5	1.5	3.3	7.1	180	○	252	○	350	○	462	○	574	○	686	○
7	62	30	2.5	1.5	3.3	7.1	184	○	254	○	354	○	466	○	578	○	690	○
7	62	15	2.5	2	3.3	7.1	188	○	256	○	358	○	470	○	582	○	694	○
7	62	22	2.5	2	3.3	7.1	192	○	258	○	362	○	474	○	586	○	698	○
7	62	30	2.5	2	3.3	7.1	196	○	260	○	366	○	478	○	590	○	702	○
8	64	22	1.7	1	3.8	8.1	200	○	262	○	370	○	482	○	594	○	706	○
8	64	22	1.7	1.5	3.8	8.1	204	○	264	○	374	○	486	○	598	○	710	○
8	64	22	2.6	2	3.8	8.1	208	○	266	○	378	○	490	○	602	○	714	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AK

For internal recessing with radius

Application:

Ident. No. 100–160, 228–288: For internal recessing with radius in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

Ident. No. 164–224: For internal recessing with radius in the material groups of steel, stainless steel, special alloys, hard machining up to 65 HRC with high cutting speeds and medium cutting conditions.

Execution:

- solid carbide cutting insert with inner cooling

Advantage:

- stable geometry for cutting insert
- **Ident. No. 100–160:**
  - tough cemented carbide type for broad application field
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 164–224:** innovative coating technology for universal use with extremely demanding service life requirements
- **Ident. No. 164–288:** very hard cemented carbide type ensures low wear
- **Ident. No. 228–288:** extremely sharp cutting edges ensure cutting with process reliability



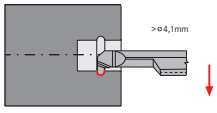
Ident. No. 100–160

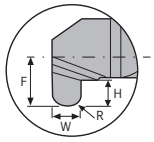


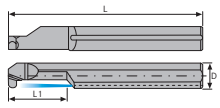
Ident. No. 164–224



Ident. No. 228–288







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Machining direction								Right		Left		Right		Left		Right		Left	
Carbide type								HC5640		HC5640		HC5615		HC5615		HW5615		HW5615	
Material to be processed								Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	W (mm)	H (mm)	F (mm)	D min. (mm)	17130... Ident. No.		17130... Ident. No.		17130... Ident. No.		17130... Ident. No.		17130... Ident. No.		17130... Ident. No.	
4	51	10	0.5	1.0	1	1.7	4.1	100	○	132	○	164	○	196	○	228	○	260	○
4	51	10	0.75	1.5	1	1.7	4.1	104	○	136	○	168	○	200	○	232	○	264	○
5	51	15	0.5	1.0	1.2	2.3	5.1	108	○	140	○	172	○	204	○	236	○	268	○
5	51	15	0.75	1.5	1.2	2.3	5.1	112	○	144	○	176	○	208	○	240	○	272	○
5	51	15	1	2	1.2	2.3	5.1	116	○	148	○	180	○	212	○	244	○	276	○
6	51	15	0.5	1.0	1.6	2.8	6.1	120	○	152	○	184	○	216	○	248	○	280	○
6	51	15	0.75	1.5	1.6	2.8	6.1	124	○	156	○	188	○	220	○	252	○	284	○
6	51	15	1	2	1.6	2.8	6.1	128	○	160	○	192	○	224	○	256	○	288	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AF HC5640

For axial recessing

Application:
For axial recessing in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

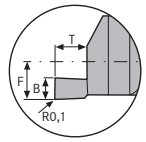
Execution:
- solid carbide cutting insert with inner cooling

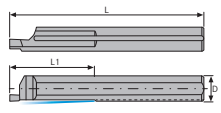
Advantage:
- sturdy geometry for axial cutter insert
- **Ident. No. 100–148:**
  - tough cemented carbide type for broad application field
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 156–200:** innovative coating technology for universal use with extremely demanding service life requirements
- **Ident. No. 156–226:** very hard cemented carbide type ensures low wear
- **Ident. No. 202–226:** extremely sharp cutting edges ensure cutting with process reliability

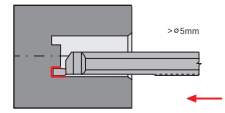

Ident. No. 100–148


Ident. No. 156–200


Ident. No. 202–226







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Machining direction							Right		Right		Right	
Carbide type							HC5640		HC5615		HW5615	
Material to be processed							Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	B (mm)	T (mm)	F (mm)	D min. (mm)	17131... Ident. No.		17131... Ident. No.		17131... Ident. No.	
4	51	15	0.75	1.2	1.95	5	100	○	-	-	202	○
4	51	15	1	1.5	1.95	5	104	○	156	○	204	○
4	51	15	1.5	2.8	1.95	5	108	○	160	○	206	○
5	51	22	0.75	1.2	2.45	6	112	○	164	○	208	○
5	51	22	1	1.5	2.45	6	116	○	168	○	210	○
5	51	22	1.5	2.5	2.45	6	120	○	172	○	212	○
5	51	22	2	3.8	2.45	6	124	○	176	○	214	○
6	51	22	1	1.5	2.95	8	128	○	180	○	216	○
6	51	22	1.5	2.5	2.95	8	132	○	184	○	218	○
6	51	22	2	3	2.95	8	136	○	188	○	220	○
6	51	22	2.5	4.8	2.95	8	140	○	192	○	222	○
6	58	30	3	6	2.95	8	144	○	196	○	224	○
8	64	22	2.5	3.5	3.95	10	148	○	200	○	226	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AF

For axial recessing

Application:
Ident. No. 100–148: For axial recessing in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.
Ident. No. 152–200: Sturdy geometry for axial recessing in the material groups of steel, stainless steel, special alloys, hard machining up to 65 HRC with high cutting speeds and medium cutting conditions.
Ident. No. 204–252: Sturdy geometry for axial recessing in the material groups of steel and (stainless steel) with low to high cutting speeds and medium cutting conditions.

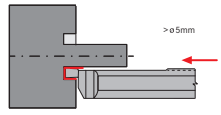
Execution:
- solid carbide cutting insert with inner cooling

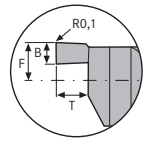
Advantage:
- sturdy geometry for axial cutter insert
- **Ident. No. 100–148:**
  - tough cemented carbide type for broad application field
  - ideal for use with inefficient machines and unstable cutting conditions
- **Ident. No. 152–200:** innovative coating technology for universal use with extremely demanding service life requirements
- **Ident. No. 152–252:** very hard cemented carbide type ensures low wear
- **Ident. No. 204–252:** extremely sharp cutting edges ensure cutting with process reliability

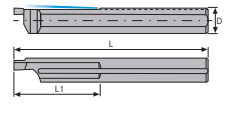

Ident. No. 100–148


Ident. No. 152–200


Ident. No. 204–252







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Machining direction							Left		Left		Left	
Carbide type							HC5640		HC5615		HW5615	
Material to be processed							Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	B (mm)	T (mm)	F (mm)	D min. (mm)	17132... Ident. No.		17132... Ident. No.		17132... Ident. No.	
4	51	15	0.75	1.2	1.75	5	100	○	152	○	204	○
4	51	15	1	1.5	1.75	5	104	○	156	○	208	○
4	51	15	1.5	2.8	1.75	5	108	○	160	○	212	○
5	51	22	0.75	1.2	2.25	6	112	○	164	○	216	○
5	51	22	1	1.5	2.25	6	116	○	168	○	220	○
5	51	22	1.5	2.5	2.25	6	120	○	172	○	224	○
5	51	22	2	3.8	2.25	6	124	○	176	○	228	○
6	51	22	1	1.5	2.75	8	128	○	180	○	232	○
6	51	22	1.5	2.5	2.75	8	132	○	184	○	236	○
6	51	22	2	3	2.75	8	136	○	188	○	240	○
6	51	22	2.5	4.8	2.75	8	140	○	192	○	244	○
6	58	30	3	6	2.75	8	144	○	196	○	248	○
8	64	22	2.5	3.5	3.75	10	148	○	200	○	252	○

Prod. Gr. 1FB

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® Miniature cutting insert type AV

For deep axial recessing

Application:

Ident. No. 100–120, 200–220: For deep axial grooving in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Ident. No. 150–170: For deep axial grooving in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Execution:

- Solid carbide cutting insert with internal cooling



Ident. No. 100–120



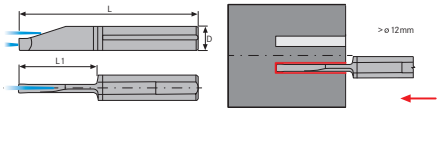
Ident. No. 150–170



Ident. No. 200–220

Advantage:

- Very narrow geometry optimised for deep groove depths
- **Ident. No. 100–120:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 150–170:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 150–220:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 200–220:** Extremely sharp cutters ensure a process-reliable cut



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Machining direction						Right		Right		Right	
Carbide type						HC5640		HC5615		HW5615	
Material to be processed						Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	B (mm)	F (mm)	D min. (mm)	17133... Ident. No.		17133... Ident. No.		17133... Ident. No.	
6	64	15	2	1.1	12	100	○	150	○	200	○
6	64	22	2	1.1	12	104	○	154	○	204	○
6	64	22	2.5	1.4	12	108	○	158	○	208	○
8	64	27	3	1.6	15	112	○	162	○	212	○
8	80	43	3	1.6	15	116	○	166	○	216	○
8	80	43	4	2.1	20	120	○	170	○	220	○

Prod. Gr. 1FB

ATORN® Miniature cutting insert type AZ HC5640

For axial recessing with radius

Application:

Ident. No. 100–128: For axial grooving with radius in steel, (stainless steel), cast iron and non-ferrous metals material groups at low cutting speeds or in unfavourable cutting conditions.

Ident. No. 180–208: For axial grooving with radius in steel, stainless steel, special alloys material groups, hard machining to 65HRC at high cutting speeds and mid-range cutting conditions.

Ident. No. 260–288: For axial grooving with radius in steel and (stainless steel) material groups at low to high cutting speeds and mid-range cutting conditions.

Execution:

- Solid carbide cutting insert with internal cooling



Ident. No. 100–128



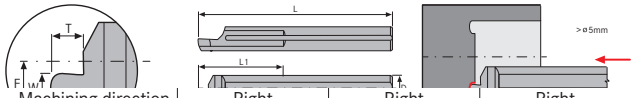
Ident. No. 180–208



Ident. No. 260–288

Advantage:

- Stable geometry for axial grooving
- **Ident. No. 100–128:**
  - Robust cemented carbide grade for a broad application range
  - Ideal for use with low-performance machines and unstable cutting conditions
- **Ident. No. 180–208:** Innovative coating technology for universal use with very high service life requirements
- **Ident. No. 180–288:** Very hard cemented carbide grade ensures low wear
- **Ident. No. 260–288:** Extremely sharp cutters ensure a process-reliable cut

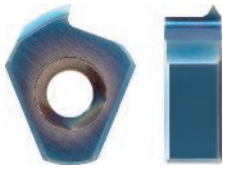
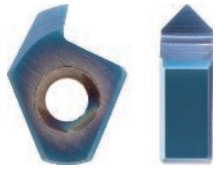
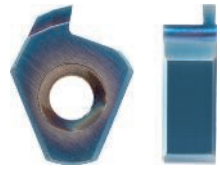
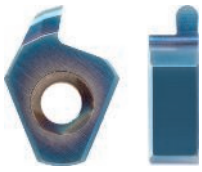
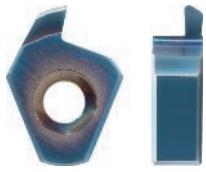


Machining direction								Right		Right		Right	
Carbide type								HC5640		HC5615		HW5615	
Material to be processed								Steel | Stainless steel | Non-ferrous metal | Cast metal		Steel | Stainless steel | Special alloy | Hardened material		Stainless steel | Non-ferrous metal	
D (mm)	L (mm)	L1 (mm)	R (mm)	W (mm)	T (mm)	F (mm)	D min. (mm)	17134... Ident. No.		17134... Ident. No.		17134... Ident. No.	
4	51	15	0.5	1	1.2	1.95	5	100	○	180	○	260	○
4	51	15	0.75	1.5	1.5	1.95	5	104	○	184	○	264	○
5	51	22	0.5	1	1.2	2.45	6	108	○	188	○	268	○
5	51	22	0.75	1.5	1.5	2.45	6	112	○	192	○	272	○
5	51	22	1	2	2.5	2.45	6	116	○	196	○	276	○
6	51	22	0.5	1	1.2	2.95	8	120	○	200	○	280	○
6	51	22	0.75	1.5	1.5	2.95	8	124	○	204	○	284	○
6	51	22	1	2	2.5	2.95	8	128	○	208	○	288	○

Prod. Gr. 1FB


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Miniature lathe range with front cutting attachment
For demanding serial users

Application:
Miniature range for boring range of 8-13 mm in all material groups.

Advantages:
- Extremely wide range for internal boring, copy turning, recessing, thread cutting, chamfering and grooving applications
- Excellent service life in heavy-duty materials stainless steel and titanium, and hard machining up to 50HRC
- Special designs in all variants with short delivery times
- Precision-manufactured cutting inserts and holders for rapid replacement of cutting inserts on machine
- Cemented carbide carrier ensures low susceptibility to vibration
- Internal cooling ensures reliable machining in series production

ATORN® Holder for miniature cutting insert with front-face cutting attachment

Application:
For clamping miniature cutting inserts.

Execution:
- Solid carbide holder in steel design with clamping screw



Suitable for indexable inserts	Length (mm)	Shaft Ø (mm)	Clearance length (mm)	Clearance Ø (mm)	Material	17135... Ident. No.	
A8	80	8	20	7	VHM	010	●
A8	95	8	30	7	VHM	015	●
A8	105	8	40	7	VHM	020	●
A10	150	10	-	10	VHM	025	●
A10	110	12	40	10	VHM	030	●
A10	125	12	55	10	VHM	035	●
A10	70	12	25	10	Steel	040	●
A10	90	16	25	10	Steel	045	●
A10	100	16	35	10	Steel	050	●

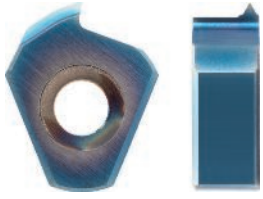
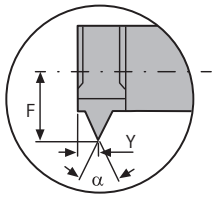
Prod. Gr. 1FI

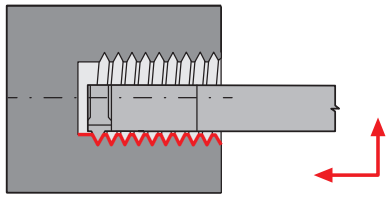
ATORN® Miniature cutting insert, front face
For thread cutting, 60° partial profile

Application:
For variable 60° thread cutting.

Execution:
- Solid carbide cutting insert, 60°

Advantage:
- Very hard cemented carbide grade ensures low wear
- Stable geometry optimised for female thread cutting machining
- Innovative coating technology for universal use with very high service life requirements



Vc in steel ●	15-70 m/min
Vc in cast iron ●	15-30 m/min
Vc in stainless steel ●	15-70 m/min
Vc in non-ferrous metals ●	20-90 m/min
Vc in special alloys ●	20-50 m/min
Min./max. Vc in hardened steel 50 HRC	10-40 m/min

Indexable insert type	Min./max. pitch external	Min./max. pitch internal	Min./max. number of thread starts per inch internal	Min./max. number of thread starts per inch external	F (mm)	Y (mm)	Min. bore Ø (mm)	17135... Ident. No.	
A8	0.4-0.75 mm	0.5-0.75 mm	56-32	64-32	3.7	0.6	8	100	●
A8	0.8-1.0 mm	1.0-1.25 mm	28-20	32-28	4.1	0.8	8.4	105	●
A10	0.4-0.8 mm	0.5-0.8 mm	56-28	64-32	6.4	0.6	11.6	110	●
A10	0.8-1.75 mm	1.0-2.0 mm	28-13	32-15	7.1	1.3	12.3	115	●
A10	1.75-2.5 mm	2.0-3.0 mm	13-8	15-10	7.9	1.5	13.1	120	●

Prod. Gr. 1FJ

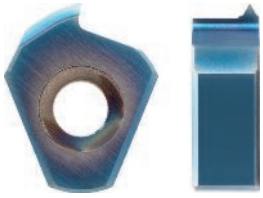
ATORN® Miniature cutting insert, front face

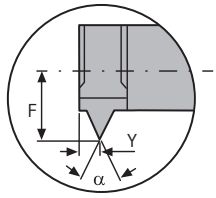
For thread cutting, 55° partial profile

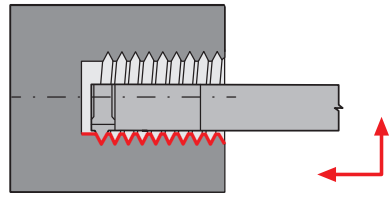
Application:
For variable 55° thread cutting.

Execution:
- Solid carbide cutting insert, 55°

Advantage:
- Very hard cemented carbide grade ensures low wear
- Stable geometry optimised for female thread cutting machining
- Innovative coating technology for universal use with very high service life requirements







Vc in steel ●	15-70 m/min
Vc in stainless steel ●	15-70 m/min
Vc in non-ferrous metals ●	20-90 m/min
Vc in cast iron ●	15-30 m/min
Min./max. Vc in hardened steel 50 HRC	10-40 m/min

Indexable insert type	Min./max. pitch	Min./max. number of thread starts per inch	F (mm)	Y (mm)	Min. bore Ø (mm)	17135... Ident. No.	
A8	1.25-1.5 mm	19-18	4.8	1	9.1	125	●
A8	1.75-2.0 mm	16-14	4.4	1.2	8.7	130	●
A10	1.25-2.0 mm	19-14	7.2	1.2	12.4	135	●

Prod. Gr. 1FJ

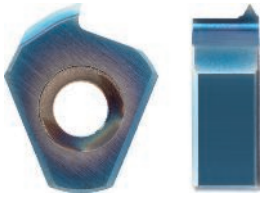
ATORN® Miniature cutting insert, front face

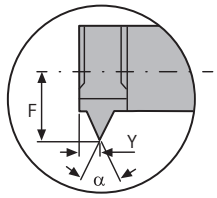
For thread cutting, 60° full profile

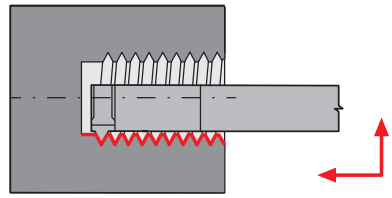
Application:
For 60° thread cutting.

Execution:
- Solid carbide cutting insert, 60°

Advantage:
- Very hard cemented carbide grade ensures low wear
- Stable geometry optimised for female thread cutting machining
- Innovative coating technology for universal use with very high service life requirements







Vc in steel ●	15-70 m/min
Vc in stainless steel ●	15-70 m/min
Vc in non-ferrous metals ●	20-90 m/min
Vc in cast iron ●	15-30 m/min
Min./max. Vc in hardened steel 50 HRC	10-40 m/min

Indexable insert type	Pitch (mm)	Suitable for metric threads from	Suitable for metric fine threads from	F (mm)	Y (mm)	Min. bore Ø (mm)	17135... Ident. No.	
A8	0.5	-	MF8,5	3.6	0.5	8	140	●
A8	0.75	-	MF9	3.8	0.6	8.1	145	●
A8	1	-	MF9	3.7	0.7	8	150	●
A8	1.25	-	MF10	3.9	0.8	8.2	155	●
A8	1.5	M10	MF12	4.1	1	8.4	160	●
A8	1.75	M12	-	4.3	1.1	8.6	165	●
A8	2	M14	MF17	4.5	1.3	8.8	170	●
A10	0.5	-	MF12	6.1	0.5	11.3	175	●
A10	0.75	-	MF12	6.1	0.6	11.3	180	●
A10	1	-	MF13	6.5	0.7	11.7	185	●
A10	1.5	-	MF14	6.5	1	11.7	190	●
A10	2	M16	MF17	6.8	1.3	12	195	●
A10	2.5	M18 | M20	-	7.4	1.4	12.6	200	●
A10	3	M24	MF28	7.4	1.6	12.6	205	●

Prod. Gr. 1FJ

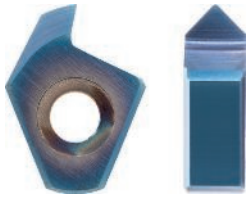
ATORN® Miniature cutting insert, front face

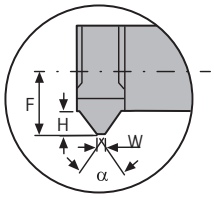
For chamfering

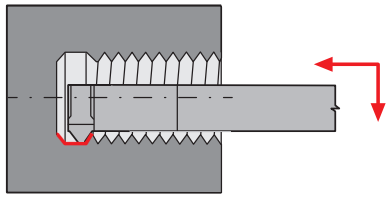
Application:
For chamfering.

Execution:
- Solid carbide cutting insert, 45° chamfering angle

Advantage:
- Very hard cemented carbide grade ensures low wear
- User-friendly chamfering with high surface quality
- Innovative coating technology for universal use with very high service life requirements







Vc in steel ●	15-70 m/min
Vc in stainless steel ●	15-70 m/min
Vc in non-ferrous metals ●	20-90 m/min
Vc in cast iron ●	15-30 m/min
Min./max. Vc in hardened steel 50 HRC	10-40 m/min
f min./max.	0.02-0.08 mm/U

Indexable insert type	Bevel angle (Degree)	Edge depth (mm)	W (mm)	F (mm)	f min./max.	Min. bore Ø (mm)	17135... Ident. No.	
A8	90	1.4	0.2	4.5	0.02-0.08 mm/U	8.8	210	●
A10	90	1.8	0.2	7.5	0.02-0.08 mm/U	12.7	215	●

Prod. Gr. 1FJ

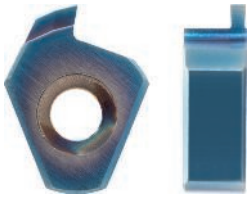
ATORN® Miniature cutting insert, front face

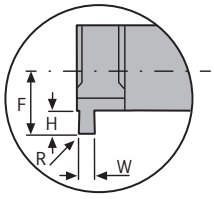
For internal recessing

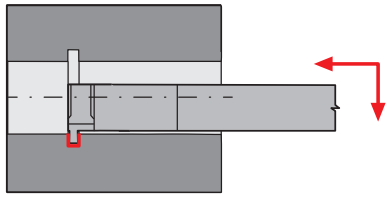
Application:
For internal recessing.

Execution:
- Solid carbide cutting insert

Advantage:
- Very hard cemented carbide grade ensures low wear
- Stable geometry for the cutting insert
- Innovative coating technology for universal use with very high service life requirements







Vc in steel ●	15-70 m/min
Vc in stainless steel ●	15-70 m/min
Vc in non-ferrous metals ●	20-90 m/min
Vc in cast iron ●	15-30 m/min
Min./max. Vc in hardened steel 50 HRC	10-40 m/min

Indexable insert type	Recessing width (mm)	Tolerance of plunge depth	Plunge depth (mm)	F (mm)	Min. bore Ø (mm)	17135... Ident. No.	
A8	1	± 0.02 mm	2	5.1	9.4	220	●
A8	1.5	± 0.02 mm	2	5.1	9.4	225	●
A8	2	± 0.02 mm	2	5.1	9.4	230	●
A8	2.5	± 0.02 mm	2	5.1	9.4	235	●
A8	3	± 0.02 mm	2	5.1	9.4	240	●
A10	1	± 0.02 mm	1.4	7.1	12.3	245	●
A10	1.5	± 0.02 mm	1.4	7.1	12.3	250	●
A10	2	± 0.02 mm	1.4	7.1	12.3	255	●
A10	1	± 0.02 mm	2.3	7.9	13.1	260	●
A10	1.5	± 0.02 mm	2.3	7.9	13.1	265	●
A10	2	± 0.02 mm	2.3	7.9	13.1	270	●
A10	2.5	± 0.02 mm	2.3	7.9	13.1	275	●
A10	3	± 0.02 mm	2.3	7.9	13.1	280	●

Prod. Gr. 1FJ

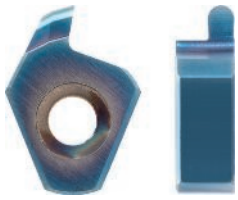
ATORN® Miniature cutting insert, front face

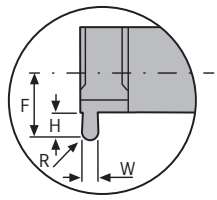
For internal recessing with radius

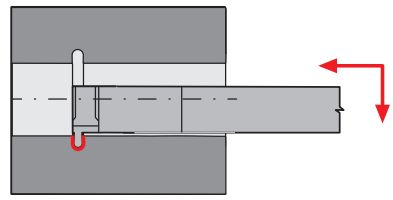
Application:
For internal recessing with radius.

Execution:
- Solid carbide cutting insert with radius

Advantage:
- Very hard cemented carbide grade ensures low wear
- Stable geometry for the cutting insert
- Innovative coating technology for universal use with very high service life requirements







Vc in steel ●	15-70 m/min
Vc in stainless steel ●	15-70 m/min
Vc in non-ferrous metals ●	20-90 m/min
Vc in cast iron ●	15-30 m/min
Min./max. Vc in hardened steel 50 HRC	10-40 m/min

Indexable insert type	Recessing width (mm)	Tolerance of plunge depth	Radius (mm)	Plunge depth (mm)	F (mm)	Min. bore Ø (mm)	f min./max.	17135... Ident. No.	
A8	0.8	± 0.02 mm	0.4	1	4.1	8.4	0.01-0.03 mm/U	285	●
A8	1.2	± 0.02 mm	0.6	1	4.1	8.4	0.01-0.03 mm/U	290	●
A8	1.8	± 0.02 mm	0.9	1	4.1	8.4	0.01-0.03 mm/U	295	●
A10	0.8	± 0.02 mm	0.4	2.2	7.9	13.1	0.01-0.03 mm/U	300	●
A10	1.2	± 0.02 mm	0.6	2.2	7.9	13.1	0.01-0.03 mm/U	305	●
A10	1.8	± 0.02 mm	0.9	2.2	7.9	13.1	0.01-0.03 mm/U	310	●
A10	2	± 0.02 mm	1	2.2	7.9	13.1	0.01-0.03 mm/U	315	●

Prod. Gr. 1FJ

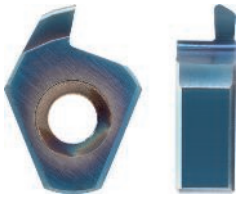
ATORN® Miniature cutting insert, front face

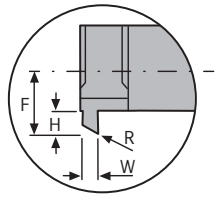
For back turning

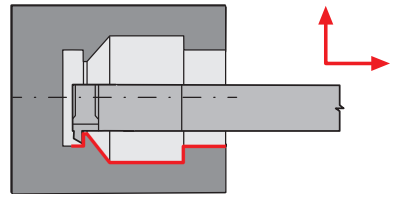
Application:
For recessing.

Execution:
- Solid carbide cutting insert

Advantage:
- Very hard cemented carbide grade ensures low wear
- Stable and optimised geometry for recessing
- Innovative coating technology for universal use with very high service life requirements





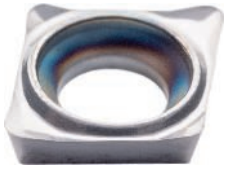


Vc in steel ●	15-70 m/min
Vc in stainless steel ●	15-70 m/min
Vc in non-ferrous metals ●	20-90 m/min
Vc in cast iron ●	15-30 m/min
Min./max. Vc in hardened steel 50 HRC	10-40 m/min
f min./max.	0.03-0.10 mm/U

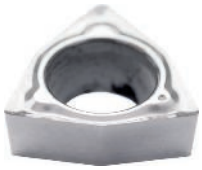
Indexable insert type	Radius (mm)	Plunge depth (mm)	Recessing width (mm)	F (mm)	Min. bore Ø (mm)	17135... Ident. No.	
A8	0.2	2	1.5	5.1	9.4	320	●
A10	0.2	2.3	1.5	7.9	13.1	325	●
A10	0.4	2.3	1.5	7.9	13.1	330	●

Prod. Gr. 1FJ

Miniature boring range using indexable inserts
For ambitious serial users

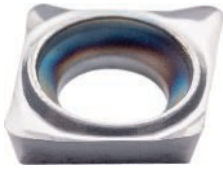




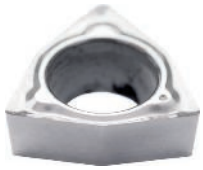
Application:
For miniature boring from a diameter of 4.8 mm with CD.., CP.., WC.., VC.. Indexable inserts

- Wide holder range in different materials (steel, solid carbide)
- Interchangeable system for universal use
- The latest generation of innovative indexable inserts

Miniature boring range using indexable inserts
For ambitious serial users





Application:
For miniature boring from a diameter of 4.8 mm with CD.., CP.., WC.., VC.. Indexable inserts
- Wide range of holders in various materials (steel, solid carbide)
- Innovative indexable inserts from the latest generation

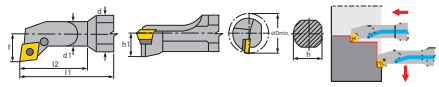
17827035-060	SCLD offset solid carbide boring bar, positive, left For face turning and longitudinal turning using CD indexable insert	
17827105-140	SCUP offset solid carbide boring bar, positive, right For face and longitudinal turning using CP indexable insert	
17827185-220	SCXP offset solid carbide boring bar, positive, left For face and longitudinal turning using CP indexable insert	
17827295-320	SCLD solid carbide boring bar, positive left For face turning and longitudinal turning using CD indexable insert	
17827355-380	SVLC solid carbide boring bar, positive left For longitudinal and copy turning with VC indexable insert	
17827415-440	SVVC solid carbide boring bar, positive left For longitudinal and copy turning with VC indexable insert	
17827475-500	SVXC solid carbide boring bar, positive left For longitudinal and copy turning with VC indexable insert	
17827535-560	SV95C solid carbide boring bar, positive left For longitudinal and copy turning with VC indexable insert	
17827565-580	SWUC boring bar, solid carbide, positive For face turning and longitudinal turning using WC indexable insert	

ATORN® SCLD offset steel boring bar, positive (DIN 8024)
For facing and longitudinal turning using CD indexable inserts

Application:
For face and longitudinal turning with CD indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **steel**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces

									SCLD offset steel boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
A 0408H SCLD R/L 04	4.8	4	8	16	100	7	2.4	CD.. 0401	005	●	010	●	900	●
A 0508H SCLD R/L 04	5.8	5	8	20	100	7	2.9	CD.. 0401	015	●	020	●	900	●
A 0608H SCLD R/L 04	6.8	6	8	24	100	7	3.4	CD.. 0401	025	●	030	●	900	●

Prod. Gr. 1FK

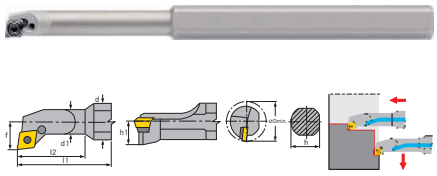
ATORN® SCLD offset solid carbide boring bar, positive (DIN 8024)

For facing and longitudinal turning using CD indexable inserts

Application:
For face and longitudinal turning with CD indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces



									SCLD offset solid carbide boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
E 0408H SCLD R/L 04	4.8	4	8	24	100	7	2.4	CD.. 0401	**035**	●	**040**	●	**900**	●
E 0508H SCLD R/L 04	5.8	5	8	30	100	7	2.9	CD.. 0401	**045**	●	**050**	●	**900**	●
E 0608H SCLD R/L 04	6.8	6	8	36	100	7	3.4	CD.. 0401	**055**	●	**060**	●	**900**	●

Prod. Gr. 1FK

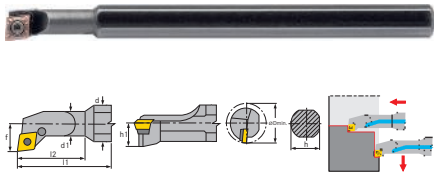
ATORN® SCLC offset steel boring bar, positive (DIN 8024)

For facing and longitudinal turning using CP indexable inserts

Application:
For face and longitudinal turning with CP indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **steel**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces



									SCLC offset steel boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
A 0608H SCUP R/L 05	8	6	8	20	100	7	4.5	CP.. 05T1..	**065**	●	**070**	●	**902**	●
A 0810J SCUP R/L 05	11	8	10	26	110	9	6	CP.. 05T1..	**075**	●	**080**	●	**902**	●
A 1012K SCUP R/L 05	13	10	12	32	125	11	7	CP.. 05T1..	**085**	●	**090**	●	**902**	●
A 1216M SCUP R/L 05	16	12	16	40	150	15	9	CP.. 05T1..	**095**	●	**100**	●	**902**	●

Prod. Gr. 1FK

ATORN® SCUP offset solid carbide boring bar, positive (DIN 8024)

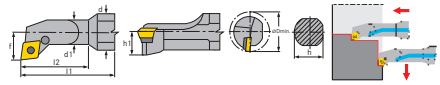
For facing and longitudinal turning using CP indexable inserts

Application:
For face and longitudinal turning with CP indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces





									SCUP offset solid carbide boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
E 0608H SCUP R/L 05	8	6	8	28	100	7	4.5	CP.. 05T1..	**105**	●	**110**	●	**902**	●
E 0810J SCUP R/L 05	11	8	10	36	110	9	6	CP.. 05T1..	**115**	●	**120**	●	**902**	●
E 1012K SCUP R/L 05	13	10	12	44	125	11	7	CP.. 05T1..	**125**	●	**130**	●	**902**	●
E 1216M SCUP R/L 05	16	12	16	55	150	15	9	CP.. 05T1..	**135**	●	**140**	●	**902**	●

Prod. Gr. 1FK

ATORN® SCXP steel offset boring bar, positive (DIN 8024)

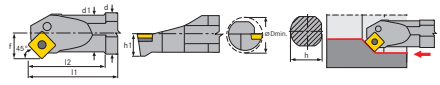
For facing and longitudinal turning using CP indexable inserts

Application:
For face and longitudinal turning with CP indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **steel**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces





									SCXP steel offset boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
A 0608H SCXP R/L 05	8.5	6	8	20	100	7	4.5	CP.. 05T1..	**145**	●	**150**	●	**902**	●
A 0810J SCXP R/L 05	11	8	10	26	110	9	6	CP.. 05T1..	**155**	●	**160**	●	**902**	●
A 1012K SCXP R/L 05	13	10	12	32	125	11	7	CP.. 05T1..	**165**	●	**170**	●	**902**	●
A 1216M SCXP R/L 05	16	12	16	40	150	15	9	CP.. 05T1..	**175**	●	**180**	●	**902**	●

Prod. Gr. 1FK

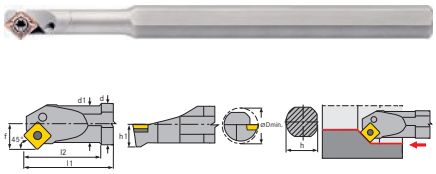
ATORN® SCXP offset solid carbide boring bar, positive (DIN 8024)

For longitudinal turning using CP indexable inserts

Application:
For face and longitudinal turning with CP indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, offset, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces



									SCXP offset solid carbide boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
E 0608H SCXP R/L 05	8.5	6	8	28	100	7	4.5	CP.. 05T1..	185	●	190	●	902	●
E 0810J SCXP R/L 05	11	8	10	36	110	9	6	CP.. 05T1..	195	●	200	●	902	●
E 1012K SCXP R/L 05	13	10	12	44	125	11	7	CP.. 05T1..	205	●	210	●	902	●
E 1216M SCXP R/L 05	16	12	16	55	150	15	9	CP.. 05T1..	215	●	220	●	902	●

Prod. Gr. 1FK

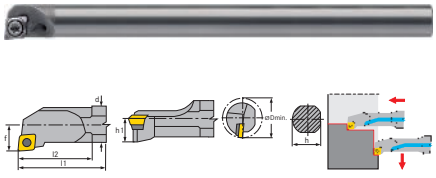
ATORN® SCLD steel boring bar, positive (DIN 8024)

For facing and longitudinal turning using CD indexable inserts

Application:
For face and longitudinal turning with CD indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **steel**, with internal cooling, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces



								SCLD steel boring bar, positive				clamping screw for indexable insert	
							Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
A 04E SCLD R/L 04	4.8	4	3.0	70	4	2.4	CD.. 0401	265	●	270	●	900	●
A 05E SCLD R/L 04	5.8	5	4.0	70	5	2.9	CD.. 0401	275	●	280	●	900	●
A 06F SCLD R/L 04	6.8	6	4.0	80	6	3.4	CD.. 0401	285	●	290	●	900	●

Prod. Gr. 1FK

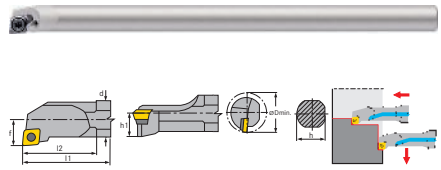
ATORN® SCLD solid carbide boring bar, positive (DIN 8024)

For facing and longitudinal turning using CD indexable inserts

Application:
For face and longitudinal turning with CD indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, type C, attack angle 95°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces



								SCLD solid carbide boring bar, positive				clamping screw for indexable insert	
							Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
E 04F SCLD R/L 04	4.8	4	3.5	80	4	2.4	CD.. 0401	295	●	300	●	900	●
E 05F SCLD R/L 04	5.8	5	4.0	80	5	2.9	CD.. 0401	305	●	310	●	900	●
E 06G SCLD R/L 04	6.8	6	4.5	95	6	3.4	CD.. 0401	315	●	320	●	900	●

Prod. Gr. 1FK

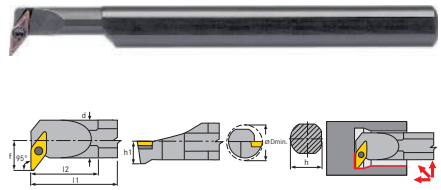
ATORN® SVLC steel boring bar, positive (DIN 8024)

For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-made boring bar, **steel**, with internal cooling, type V, attack angle 95°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces



									SVLC steel boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
A 10H SVLC R/L 07	12.5	10	7.5	22	100	9	7	VC.. 0702..	325	●	330	●	904	●
A 12K SVLC R/L 07	15.5	12	8.0	28	125	11	9	VC.. 0702..	335	●	340	●	904	●
A 16M SVLC R/L 07	19.5	16	9.5	36	150	15	11	VC.. 0702..	345	●	350	●	904	●

Prod. Gr. 1FK

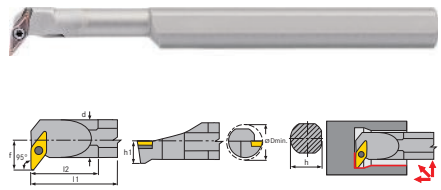
ATORN® SVLC solid carbide boring bar, positive (DIN 8024)

For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, type V, attack angle 95°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces



									SVLC solid carbide boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
E 10H SVLC R/L 07	12.5	10	7.5	32	100	9	7	VC.. 0702..	355	●	360	●	904	●
E 12K SVLC R/L 07	15.5	12	8.0	40	125	11	9	VC.. 0702..	365	●	370	●	904	●
E 16M SVLC R/L 07	19.5	16	9.0	55	150	15	11	VC.. 0702..	375	●	380	●	904	●

Prod. Gr. 1FK

ATORN® SVVC steel boring bar, positive (DIN 8024)

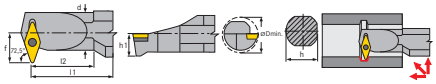
For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-made boring bar, **steel**, with internal cooling, type V, attack angle 72.5°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces





									SVVC steel boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
A 10H SVVC R/L 07	13.5	10	7.5	22	100	9	8	VC.. 0702..	385	●	390	●	904	●
A 12K SVVC R/L 07	15.5	12	8.5	28	125	11	9	VC.. 0702..	395	●	400	●	904	●
A 16M SVVC R/L 07	17.5	16	9.5	36	150	15	11	VC.. 0702..	405	●	410	●	904	●

Prod. Gr. 1FK

ATORN® SVVC solid carbide boring bar, positive (DIN 8024)

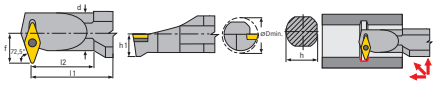
For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, type V, attack angle 72.5°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces





									SVVC solid carbide boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
E 10H SVVC R/L 07	13.5	10	7.5	32	100	9	8	VC.. 0702..	415	●	420	●	904	●
E 12K SVVC R/L 07	15.5	12	7.5	40	125	11	9	VC.. 0702..	425	●	430	●	904	●
E 16M SVVC R/L 07	17.5	16	8.5	55	150	15	11	VC.. 0702..	435	●	440	●	904	●

Prod. Gr. 1FK

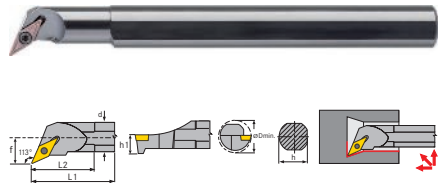
ATORN® SVXC steel boring bar, positive (DIN 8024)

For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-made boring bar, **steel**, with internal cooling, type V, attack angle 113°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces



									SVXC steel boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
A 10H SVXC R/L 07	12.5	10	6.0	22	100	9	7	VC.. 0702..	**445**	●	**450**	●	**904**	●
A 12K SVXC R/L 07	15.5	12	8.0	28	125	11	9	VC.. 0702..	**455**	●	**460**	●	**904**	●
A 16M SVXC R/L 07	19.5	16	9.5	36	150	15	11	VC.. 0702..	**465**	●	**470**	●	**904**	●

Prod. Gr. 1FK

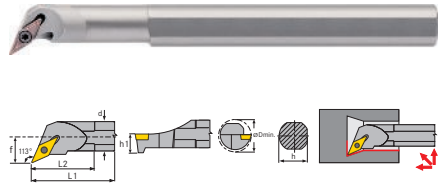
ATORN® SVXC solid carbide boring bar, positive (DIN 8024)

For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, type V, attack angle 113°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces



									SVXC solid carbide boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
E 10H SVXC R/L 07	12.5	10	7.5	32	100	9	7	VC.. 0702..	**475**	●	**480**	●	**904**	●
E 12K SVXC R/L 07	15.5	12	8.0	40	125	11	9	VC.. 0702..	**485**	●	**490**	●	**904**	●
E 16M SVXC R/L 07	19.5	16	9.5	55	150	15	11	VC.. 0702..	**495**	●	**500**	●	**904**	●

Prod. Gr. 1FK

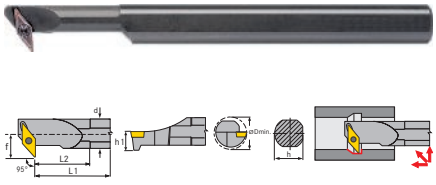
ATORN® SV95C steel boring bar, positive (DIN 8024)

For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-made boring bar, **steel**, with internal cooling, type V, attack angle 95°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces



									SV95C steel boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
A 10H SV95C R/L 07	12.5	10	6.5	22	100	9	7	VC.. 0702..	505	●	510	●	904	●
A 12K SV95C R/L 07	15.5	12	8.0	28	125	11	9	VC.. 0702..	515	●	520	●	904	●
A 16M SV95C R/L 07	17.5	16	10.0	36	150	15	11	VC.. 0702..	525	●	530	●	904	●

Prod. Gr. 1FK

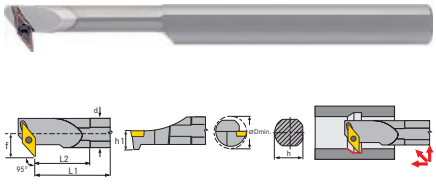
ATORN® SV95C solid carbide boring bar, positive (DIN 8024)

For longitudinal and copy turning using VC indexable inserts

Application:
For longitudinal and copy turning with VC indexable insert 55°

Execution:
- Precision-manufactured boring bar, **solid carbide**, with internal cooling, type V, attack angle 95°, tip angle 35°, clearance angle 7°

Advantage:
- Slender geometry for longitudinal and copy turning
- Positive geometry for the body ensures low cutting forces



									SV95C solid carbide boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	17827... Ident. No.		17827... Ident. No.		17827... Ident. No.	
E 10H SV95C R/L 07	12.5	10	6.5	32	100	9	7	VC.. 0702..	535	●	540	●	904	●
E 12K SV95C R/L 07	15.5	12	8.0	40	125	11	9	VC.. 0702..	545	●	550	●	904	●
E 16M SV95C R/L 07	17.5	16	9.5	55	150	15	11	VC.. 0702..	555	●	560	●	904	●

Prod. Gr. 1FK

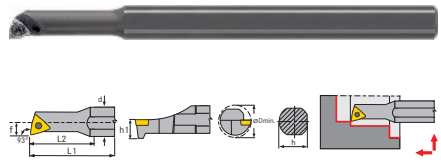
ATORN® SWUC steel offset boring bar, positive (DIN 8024)

For facing and longitudinal turning using WC indexable inserts

Application:
For face and longitudinal turning with WC indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **steel**, with internal cooling, offset, type C, attack angle 93°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces



									SWUC steel offset boring bar, positive				clamping screw for indexable insert	
								Tool design	Right		Left			
ISO name	D min. (mm)	d1 (mm)	d (mm)	l2 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
A 0508H SWUC R/L 02	5.8	5	8	18	100	7	2.9	WC.. 0201..	**225**	●	**230**	●	**906**	●
A 0608H SWUC R/L 02	7.8	6	8	24	100	7	3.9	WC.. 0201..	**235**	●	**240**	●	**906**	●
E 0508H SWUC R/L 02	5.8	5	8	18	100	7	2.9	WC.. 0201..	**245**	●	**250**	●	**906**	●
E 0608H SWUC R/L 02	7.8	6	8	24	100	7	3.9	WC.. 0201..	**255**	●	**260**	●	**906**	●

Prod. Gr. 1FK

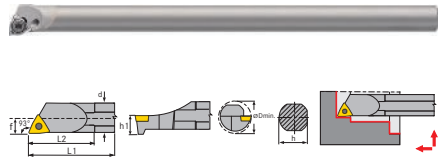
ATORN® SWUC solid carbide boring bar, positive (DIN 8024)

For facing and longitudinal turning using WC indexable inserts

Application:
For face and longitudinal turning with WC indexable insert, 80°.

Execution:
- Precision-manufactured boring bar, **steel**, with internal cooling, type W, attack angle 93°, tip angle 80°, clearance angle 7°

Advantage:
- Universal use for face and longitudinal turning
- Positive geometry for the body ensures low cutting forces



								SWUC solid carbide boring bar, positive				clamping screw for indexable insert	
							Tool design	Left		Right			
ISO name	D min. (mm)	d (mm)	h1 (mm)	l1 (mm)	h (mm)	f (mm)	Suitable for indexable inserts	**17827...** Ident. No.		**17827...** Ident. No.		**17827...** Ident. No.	
E 05F SWUC R/L 02	5.8	5	4.0	85	5	2.9	WC.. 0201..	**565**	●	**570**	●	**904**	●
E 06G SWUC R/L 02	7.8	6	5.0	95	6	3.9	WC.. 0201..	-	-	**580**	●	**904**	●

Prod. Gr. 1FK

ATORN® CDGT indexable insert, positive
ISO N

Application:
For longitudinal turning and face turning under good operating conditions at small to medium feed depths in the non-ferrous metals material group.

Execution:
- Ground cemented carbide indexable insert

Advantage:
- Very high hardness and wear resistance, for high service life requirements
- Very positive chip breaker for ideal chip breaking at low cutting depths



		Carbide type	HW6315	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals ●	160-280 m/min	
ISO name	min./max. ap	f min./max.	17827... Ident. No.	
CDGT 040101-MN	0.1-1 mm	0.04-0.12 mm/U	700	●
CDGT 040102-MN	0.1-1 mm	0.04-0.12 mm/U	705	●
CDGT 040104-MN	0.1-1 mm	0.04-0.12 mm/U	710	●

Prod. Gr. 1FL

ATORN® CPMT indexable insert, positive
ISO P

Application:
For longitudinal turning and face turning under average operating conditions at low to medium feed depths in the steel, stainless steel and cast iron material groups.

Execution:
- Sintered cemented carbide indexable insert

Advantage:
- Perfect combination of wear resistance and toughness, for high process stability and a wide range of applications
- Very positive chip breaker for ideal chip breaking at low cutting depths



		Carbide type	HC7625	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	110-220 m/min	
		Vc in stainless steel ●	60-120 m/min	
		Vc in cast iron ●	120-190 m/min	
ISO name	min./max. ap	f min./max.	17827... Ident. No.	
CPMT 05T102-FP1	0.1-1.5 mm	0.05-0.15 mm/U	745	●
CPMT 05T104-FP1	0.1-1.5 mm	0.05-0.15 mm/U	750	●

Prod. Gr. 1FL

ATORN® VCGT indexable insert, positive
ISO N

Application:
For longitudinal turning, face turning and copy turning under good operating conditions at small to medium feed depths in the non-ferrous metals material group.

Execution:
- Ground cemented carbide indexable insert

Advantage:
- Very high hardness and wear resistance, for high service life requirements
- Very positive chip breaker for ideal chip breaking at low cutting depths



		Carbide type	HW6315	
		Machining conditions for indexable insert	Good	
		Vc in non-ferrous metals ●	160-280 m/min	
ISO name	min./max. ap	f min./max.	17827... Ident. No.	
VCGT 070201-MN	0.1-1.5 mm	0.04-0.12 mm/U	755	●
VCGT 070202-MN	0.1-1.5 mm	0.04-0.12 mm/U	760	●
VCGT 070204-MN	0.1-1.5 mm	0.04-0.12 mm/U	765	●

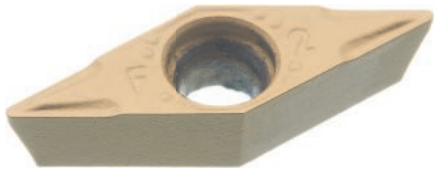
Prod. Gr. 1FL

ATORN® VCMT indexable insert, positive
ISO P

Application:
For longitudinal turning, face turning and copy turning under good operating conditions at low to medium feed depths in the steel, stainless steel and cast iron material groups.

Execution:
- Ground cemented carbide indexable insert

Advantage:
- Perfect combination of wear resistance and toughness, for high process stability and a wide range of applications
- Very positive chip breaker for ideal chip breaking at low cutting depths



		Carbide type	HC7625	
		Machining conditions for indexable insert	Medium	
		Vc in steel ●	110-220 m/min	
		Vc in stainless steel ●	60-120 m/min	
		Vc in cast iron ●	120-190 m/min	
ISO name	min./max. ap	f min./max.	17827... Ident. No.	
VCMT 070202-FP1	0.1-1.5 mm	0.05-0.15 mm/U	770	●
VCMT 070204-FP1	0.1-1.5 mm	0.05-0.15 mm/U	775	●

Prod. Gr. 1FL

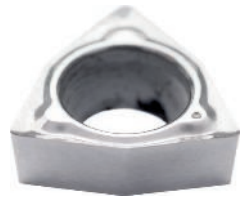
ATORN® WCGT indexable insert, positive

ISO N

Application:
For longitudinal turning and face turning under good operating conditions at small to medium feed depths in the non-ferrous metals material group.

Execution:
- Ground cemented carbide indexable insert

Advantage:
- Very high hardness and wear resistance, for high service life requirements
- Very positive chip breaker for ideal chip breaking at low cutting depths



		Carbide type	HW6315	
		Machining conditions for indexable insert	Good	
		Vc in steel ●	140-200 m/min	
		Vc in non-ferrous metals ●	160-280 m/min	
ISO name	min./max. ap	f min./max.	17827... Ident. No.	
WCGT 020101-MN	0.1-0.8 mm	0.04-0.12 mm/U	790	●
WCGT 020102-MN	0.1-0.8 mm	0.04-0.12 mm/U	795	●
WCGT 020104-MN	0.1-0.8 mm	0.04-0.12 mm/U	800	●

Prod. Gr. 1FL

WBGT indexable insert, positive

For internal longitudinal and copy lathing

Application:
For longitudinal and copy turning, internal, with shallow feed depths for steel, stainless steel, aluminium and cast iron material groups in series production.

Execution:
- Three-tip indexable insert, ground all round with chip breaker

Advantage:
- Ground chip breaker ensures good chip removal



		Machining direction	Left	
		Material to be processed	Steel | Stainless steel | Non-ferrous metal | Cast metal	
		Vc in steel ●	300-350 m/min	
		Vc in stainless steel ●	40-50 m/min	
		Vc in non-ferrous metals ●	500-600 m/min	
		Vc in cast iron ●	250-280 m/min	
ISO name	Cutting material	Radius (mm)	17213... Ident. No.	
WBGT-080204-L	Cermet	0.4	820	●

Prod. Gr. 192



Thread-cutting range
For demanding serial users

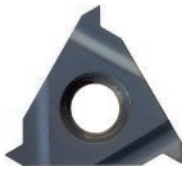




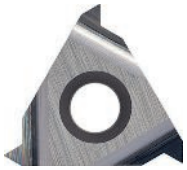
ATORN®



Right, HC5615



Right, HC5630



Right, HW5615

Application:
For male and female thread cutting in all material groups in sub- and full-profile.

- **HC5630** optimised cemented carbide and coating for low cutting speeds and universal use
- **HC5615** optimised cemented carbide and coating for high cutting speeds and long service life and universal use
- **HW5615** optimised cemented carbide without any coating for sharp cutting edges
-
- **Advantages:**
- Ground quality for challenging requirements in terms of accuracy, chips, surface quality
- Wide assortment of cemented carbide grades and coatings
- Wide range also outside of the catalogue range
- Chip breaker geometries ensure optimal chip breaking
- Compatibility with plunge inserts
- Cutting edge treatment ensures a long service life and good surfaces

Shim for clamp holders

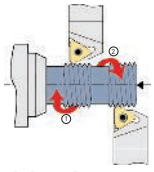
The correct selection of the shim is extremely important as the shim defines the angle to the workpiece. The gradient must be set correctly to ensure that the cutting edge does not rub on the workpiece. To do this, shims with different gradient angles are available for the required application. The most accurate method of determining the correct shim is to use the formula shown below.

Formula for calculating the pitch angle (s)	
For 60° and 55° threads (metric, UN, WHIT, NPT, BSPT)	**For trapezoidal, round, ACME, STUB threads**
s = ((20*p/d)*r)	s = (((30*p/2)/d)*r)

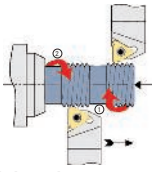
The following parameters are required for calculating the pitch angle:
d = nominal diameter of the thread
p = thread pitch
r = cutting direction

The cutting direction determines whether positive or negative shims are used.
r = 1 Cutting direction towards the chuck, see graphic Fig. 1 and 4
r = -1 Cutting direction away from the chuck, see graphic Fig. 2 and 3

External machining:

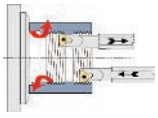


Right-hand thread:
1st right holder with right indexable insert
2nd left holder with left indexable insert

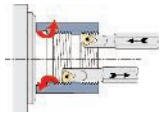


Left-hand thread:
3rd right holder with right indexable insert
4th left holder with left indexable insert

Internal machining:



Right-hand thread:
1st right holder with right indexable insert
2nd left holder with left indexable insert



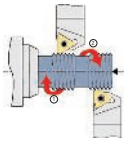
Left-hand thread:
3rd right holder with right indexable insert
4th left holder with left indexable insert

Examples for calculating the pitch angle (s):

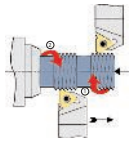
Male thread, right, in front of turning centre Towards the chuck r = 1 M30 x 2	Male thread, right, behind turning centre Away from the chuck r = -1 Tr16 x 3
s = (20p/d)*r s = (20*2/30)* 1 s = 1.33°	s = (((30*p/2)/d)*r) s = ((30*3/2)/16)*-1 s = -0.93
The calculated pitch angle is now rounded up/down to the next size. s = 1.50	s = -0.5

ATORN® Shims for thread cutting holder

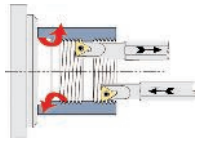
For use in thread cutting holder no. 17745-17747



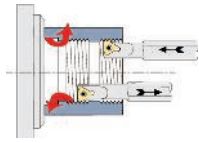
Right-hand thread:
1. Right holder with right indexable insert
2. Left holder with left indexable insert



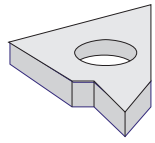
Left-hand thread:
3. Right holder with right indexable insert
4. Left holder with left indexable insert

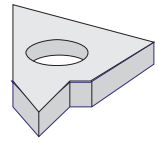


Right-hand thread:
1. Right holder with right indexable insert
2. Left holder with left indexable insert



Left-hand thread:
3. Right holder with right indexable insert
4. Left holder with left indexable insert





Ident. No. 316–322

		Suitable for indexable insert size		16		16		22		22	
		Suitable for holder		ER/IL		EL/IR		ER/IL		EL/IR	
Base plate code	Resulting pitch angle			17749... Ident. No.		17749... Ident. No.		17749... Ident. No.		17749... Ident. No.	
AE 16 +4.5	+4.5°			700	●	-	-	-	-	-	-
AI 16 +4.5	+4.5°			-	-	702	●	-	-	-	-
AE 22 +4.5	+4.5°			-	-	-	-	704	●	-	-
AI 22 +4.5	+4.5°			-	-	-	-	-	-	706	●
AE 16 +3.5	+3.5°			710	●	-	-	-	-	-	-
AI 16 +3.5	+3.5°			-	-	712	●	-	-	-	-
AE 22 +3.5	+3.5°			-	-	-	-	714	●	-	-
AI 22 +3.5	+3.5°			-	-	-	-	-	-	716	●
AE 16 +2.5	+2.5°			720	●	-	-	-	-	-	-
AI 16 +2.5	+2.5°			-	-	722	●	-	-	-	-
AE 22 +2.5	+2.5°			-	-	-	-	724	●	-	-
AI 22 +2.5	+2.5°			-	-	-	-	-	-	726	●
AE 16 +1.5	+1.5°			216	●	-	-	-	-	-	-
AI 16 +1.5	+1.5°			-	-	316	●	-	-	-	-
AE 22 +1.5	+1.5°			-	-	-	-	222	●	-	-
AI 22 +1.5	+1.5°			-	-	-	-	-	-	322	●
AE 16 +0.5	+0.5°			730	●	-	-	-	-	-	-
AI 16 +0.5	+0.5°			-	-	732	●	-	-	-	-
AE 22 +0.5	+0.5°			-	-	-	-	734	●	-	-
AI 22 +0.5	+0.5°			-	-	-	-	-	-	736	●
AE 16 -0	0°			760	○	762	○	-	-	-	-
AE 16 -0.5	-0.5°			740	●	-	-	-	-	-	-
AI 16 -0.5	-0.5°			-	-	742	●	-	-	-	-
AE 22 -0.5	-0.5°			-	-	-	-	746	●	-	-
AI 22 -0.5	-0.5°			-	-	-	-	-	-	748	●
AE 16 -1.5	-1.5°			750	●	-	-	-	-	-	-
AI 16 -1.5	-1.5°			-	-	752	●	-	-	-	-
AE 22 -1.5	-1.5°			-	-	-	-	756	●	-	-
AI 22 -1.5	-1.5°			-	-	-	-	-	-	758	●

Prod. Gr. 158

ATORN® Clamp holders for male threads

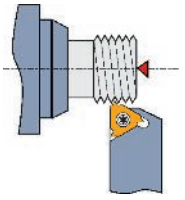
Application:
For male thread machining for thread turning inserts.

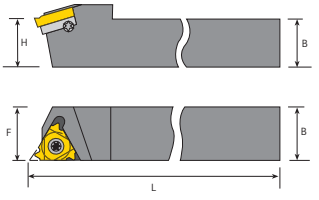
Execution:
- precision-engineered steel support, burnished and hardened, with 1.5° pitch angle

Advantage:
- top-quality and wear-resistant steel support with high-strength clamping screw
- precision-engineered insert seat provides extremely precise threads and excellent finish quality

Notes:
No. 17745011-020 and 311-320 without interchangeable shim. Pitch angle cannot be corrected.







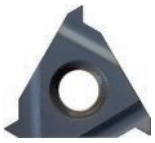
					Tool design	Right		Left	
ISO name	Suitable for indexable insert size	B (mm)	H (mm)	L (mm)		17745... Ident. No.		17745... Ident. No.	
SE (R/L) 1010 H11	11	10	11	100		011	●	311	○
SE (R/L) 1212 F16	16	12	16	80		013	●	312	●
SE (R/L) 1616 H16	16	16	16	100		016	●	316	●
SE (R/L) 2020 K16	16	20	20	125		020	●	320	●
SE (R/L) 2525 M16	16	25	25	150		025	●	325	●
SE (R/L) 2525 M22	22	25	25	150		050	●	350	●
SE (R/L) 3232 P22	22	32	32	170		055	●	355	○

Prod. Gr. 158

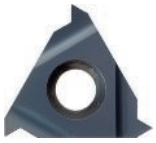
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® Thread cutting inserts partial profile 60°

For external thread cutting



Ident. No. 005, 025, 040, 050, 060
Right, HC5630



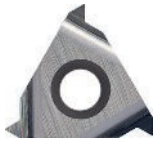
Ident. No. 007, 012, 022, 027, 032
Left, HC5630



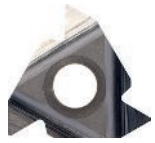
Ident. No. 010, 020, 030, 035, 055
Right, HC5615



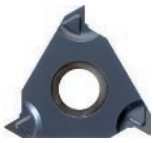
Ident. No. 037, 042, 052, 057, 062
Left, HC5615



Ident. No. 246, 248, 252, 256, 266
Right, HW5615



Ident. No. 247, 249, 253, 257, 267
Left, HW5615



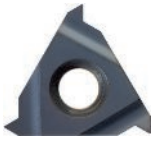
Ident. No. 070–075
Right, HC5630 with chip breaker

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron ●		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Min./max. pitch	17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.	
11 (ER/EL) A60	0.5-1.5 mm	005	○	007	○	035	○	037	○	246	○	247	○	-	-
16 (ER/EL) A60	0.5-1.5 mm	040	●	012	○	010	●	042	○	248	●	249	○	070	○
16 (ER/EL) G60	1.75-3.0 mm	050	●	022	○	020	●	052	○	252	○	253	○	075	●
16 (ER/EL) AG60	0.5-3.0 mm	025	●	027	●	055	●	057	●	256	●	257	○	-	-
22 (ER/EL) N60	3.5-5.0 mm	060	●	032	○	030	●	062	●	266	○	267	○	-	-

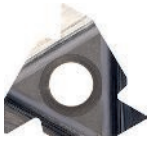
Prod. Gr. 158

ATORN® Thread cutting inserts partial profile 55°

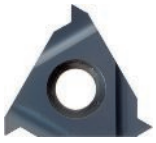
For external thread cutting



Ident. No. 100, 125, 140, 145, 155
Right, HC5630



Ident. No. 293, 297, 299
Left, HW5615



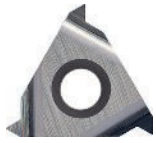
Ident. No. 102, 112, 122, 127, 132
Left, HC5630



Ident. No. 110, 120, 130, 135, 150
Right, HC5615



Ident. No. 137, 142, 147, 152, 157
Left, HC5615



Ident. No. 288–292, 296, 298
Right, HW5615



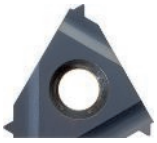
Ident. No. 160–162
Right, HC5630 with chip breaker

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron ●		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Min./max. number of thread starts per inch	17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.		17735... Ident. No.	
11 (ER/EL) A55	48-16	100	○	102	○	135	○	137	○	288	○	-	-	-	-
16 (ER/EL) A55	48-16	140	○	112	○	110	●	142	○	292	○	293	○	-	-
16 (ER/EL) G55	14-8	145	○	122	○	120	●	147	○	296	○	297	○	160	○
16 (ER/EL) AG55	48-8	125	●	127	●	150	●	152	●	298	●	299	○	162	●
22 (ER/EL) N55	7-5	155	●	132	○	130	●	157	○	-	-	-	-	-	-

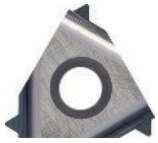
Prod. Gr. 158

ATORN® Thread cutting inserts full profile 60°

For external thread cutting



Ident. No. 015, 025, 035, 045, 055, 065, 075, 085, 095–096, 099, 116, 126, 136, 146–202, 206, 218–222, 226, 238, 242, 246, 531–532, 535–536
Right, HC5630



Ident. No. 700, 702, 704, 706, 708–712, 714–716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 748, 750–752
Right, HW5615



Ident. No. 011, 021, 031, 041, 051, 061, 071, 081, 091, 097, 101, 113, 123, 133, 143, 203, 215, 223, 227, 235, 239, 243, 247, 372
Left, HC5630



Ident. No. 010, 020, 030, 040, 050, 060, 070, 080, 090, 098, 102–112, 122, 132, 142, 208–212, 216, 228–232, 236, 240, 244, 248, 530, 533–534
Right, HC5615



Ident. No. 599–652
Left, HC5615



Ident. No. 701, 703, 705, 707, 713, 717, 719, 721, 723, 725, 727, 729, 731, 733, 735, 737, 739, 741, 743, 746, 749
Left, HW5615



Ident. No. 262–272, 537–539
Right, HC5630 with chip breaker

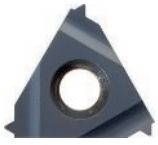
Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron ●		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Pitch (mm)	17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.	
11 (ER/EL) 0.35 ISO	0.35	202	●	203	○	530	○	599	○	700	○	701	○	-	-
11 (ER/EL) 0.4 ISO	0.4	206	○	-	-	208	○	-	-	702	○	703	○	-	-
11 (ER/EL) 0.45 ISO	0.45	531	○	372	○	212	○	-	-	704	○	705	○	-	-
11 (ER/EL) 0.5 ISO	0.5	532	○	215	○	216	●	606	○	706	○	707	○	-	-
11 (ER/EL) 0.6 ISO	0.6	218	○	-	-	533	○	608	○	708	○	-	-	-	-
11 (ER/EL) 0.7 ISO	0.7	222	○	223	○	534	●	610	○	710	○	-	-	-	-
11 (ER/EL) 0.75 ISO	0.75	226	○	227	○	228	●	612	○	712	○	713	○	-	-
11 (ER/EL) 0.8 ISO	0.8	535	○	-	-	232	●	-	-	714	○	-	-	-	-
11 (ER/EL) 1.0 ISO	1	536	○	235	○	236	●	616	○	716	○	717	○	-	-
11 (ER/EL) 1.25 ISO	1.25	238	○	239	○	240	●	618	○	718	○	719	○	-	-
11 (ER/EL) 1.5 ISO	1.5	242	○	243	○	244	●	620	○	720	○	721	○	-	-
11 (ER/EL) 1.75 ISO	1.75	246	○	247	○	248	●	622	○	722	○	723	○	-	-

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron ●		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Pitch (mm)	17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.	
16 (ER/EL) 0.5 ISO	0.5	015	●	011	○	010	●	624	○	724	○	725	○	-	-
16 (ER/EL) 0.75 ISO	0.75	025	●	021	○	020	●	626	○	726	○	727	○	-	-
16 (ER/EL) 1.0 ISO	1	035	●	031	●	030	●	628	●	728	●	729	○	537	●
16 (ER/EL) 1.25 ISO	1.25	045	●	041	○	040	●	-	-	730	●	731	○	262	●
16 (ER/EL) 1.5 ISO	1.5	055	●	051	●	050	●	632	●	732	●	733	○	538	●
16 (ER/EL) 1.75 ISO	1.75	065	●	061	○	060	●	634	○	734	○	735	○	266	●
16 (ER/EL) 2.0 ISO	2	075	●	071	●	070	●	636	●	736	○	737	○	268	●
16 (ER/EL) 2.5 ISO	2.5	085	●	081	○	080	●	638	○	738	○	739	○	539	●
16 (ER/EL) 3.0 ISO	3	095	●	091	○	090	●	640	○	740	○	741	○	272	●
22 (ER/EL) 3.5 ISO	3.5	116	●	113	○	112	●	642	○	742	○	743	○	-	-
22 (ER/EL) 4.0 ISO	4	126	●	123	○	122	●	644	○	744	○	-	-	-	-
22 (ER/EL) 4.5 ISO	4.5	136	●	133	○	132	○	646	○	746	○	-	-	-	-
22 (ER/EL) 5.0 ISO	5	146	●	143	○	142	○	648	○	748	○	749	○	-	-
22 (ER/EL) 5.5 ISO	5.5	096	○	097	○	098	○	650	○	750	○	-	-	-	-
22 (ER/EL) 6.0 ISO	6	099	○	101	○	102	○	652	○	752	○	-	-	-	-

Prod. Gr. 158

ATORN® Thread cutting inserts full profile 55°

For external thread cutting



Ident. No. 166, 176, 186, 196, 474, 478, 482, 486, 490, 494, 496, 500
Right, HC5630



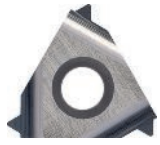
Ident. No. 163, 173, 183, 193, 479, 483, 487, 491, 495, 497, 501
Left, HC5630



Ident. No. 162, 172, 182, 192, 476, 480, 484, 488, 492, 498, 502, 528
Right, HC5615



Ident. No. 167, 177, 187, 197, 477, 481, 485, 489, 493, 499, 503, 529
Left, HC5615



Ident. No. 754, 756, 758–760, 762, 764, 766, 768, 770–776
Right, HW5615



Ident. No. 755, 757, 761, 763, 765, 767, 769
Left, HW5615



Ident. No. 472–473
Right, HC5630 with chip breaker

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Number of thread starts per inch	17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.	
16 (ER/EL) 10W	10	500	○	501	○	502	○	503	○	754	○	755	○	-	-
16 (ER/EL) 11W	11	196	●	193	●	192	●	197	●	756	●	757	○	473	○
16 (ER/EL) 12W	12	496	○	497	○	498	○	499	○	758	○	-	-	-	-
16 (ER/EL) 14W	14	186	●	183	●	182	●	187	●	760	●	761	○	-	-
16 (ER/EL) 16W	16	494	○	495	○	528	○	529	○	762	○	763	○	-	-

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Number of thread starts per inch	17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.		17741... Ident. No.	
16 (ER/EL) 18W	18	490	○	491	○	492	○	493	○	764	○	765	○	-	-
16 (ER/EL) 19W	19	176	●	173	●	172	●	177	○	766	●	767	○	472	○
16 (ER/EL) 20W	20	486	○	487	○	488	●	489	○	768	○	769	○	-	-
16 (ER/EL) 24W	20	482	○	483	○	484	○	485	○	770	○	-	-	-	-
16 (ER/EL) 28W	28	166	●	163	○	162	●	167	○	772	○	-	-	-	-
16 (ER/EL) 32W	32	478	○	479	○	480	○	481	○	774	○	-	-	-	-
16 (ER/EL) 36W	36	474	○	-	-	476	○	477	○	776	○	-	-	-	-

Prod. Gr. 158

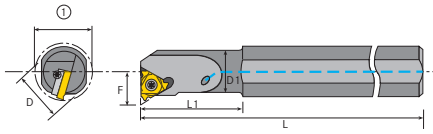
ATORN® Clamp holders for female threads

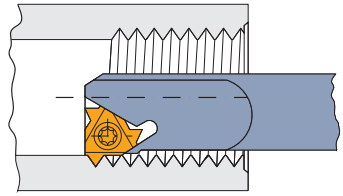
Application:
For female thread machining for thread turning inserts.

Execution:
- precision-engineered steel support, burnished and hardened, with 1.5° pitch angle

Advantage:
- top-quality and wear-resistant steel support with high-strength clamping screw
- precision-engineered insert seat provides extremely precise threads and excellent finish quality
- **Ident. No. 020–075, 320–375:** internal cooling for excellent process reliability and good chip removal





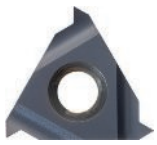


ISO name	Suitable for indexable insert size	D min. (mm)	D (mm)	D1 (mm)	L (mm)	F (mm)	L1 (mm)	Tool design Coolant supply	Right 17747... Ident. No.		Left 17747... Ident. No.	
SIR/L 0010 H11	11	12	10	10	100	7.4	-	External	130	●	160	●
SIR/L 0010 K11	11	12	10	16	125	7.4	25	External	132	●	162	●
SIR/L 0013 L11	11	15	13	16	140	8.9	32	External	134	●	164	●
SIR/L 0013 M16	16	16	13	16	150	10.2	32	External	136	●	166	●
SIR/L 0016 P16	16	19	16	20	170	11.7	40	External	138	●	168	●
SIR/L 0020 P16	16	24	20	20	170	13.7	-	External	140	●	170	●
SIR/L 0025 R16	16	29	25	25	200	16.2	-	External	142	●	172	●
SIR/L 0032 S16	16	36	32	32	250	19.7	-	External	144	○	174	○
SIR/L 0040 T16	16	44	40	40	300	23.7	-	External	146	○	176	○
SIR/L 0020 P22	22	24	20	20	170	15.6	-	External	148	●	178	●
SIR/L 0025 R22	22	29	25	25	200	18.1	-	External	150	●	180	●
SIR/L 0032 S22	22	38	32	32	250	21.6	-	External	152	●	182	○
SIR/L 0040 T22	22	46	40	40	300	25.6	-	External	154	●	184	○
SIR/L 0010 K11B	11	12	10	16	125	7.4	25	Internal	020	●	320	○
SIR/L 0013 M16B	16	16	13	16	150	10.2	32	Internal	030	●	330	○
SIR/L 0016 P16B	16	19	16	20	170	11.7	40	Internal	050	●	340	○
SIR/L 0020 P16B	16	24	20	20	170	13.7	-	Internal	060	●	350	○
SIR/L 0025 R16B	16	29	25	25	200	16.2	-	Internal	070	●	370	○
SIR/L 0025 R22B	22	29	25	25	200	18.1	-	Internal	075	●	375	○

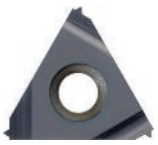
Prod. Gr. 158

ATORN® Thread cutting inserts partial profile 60°

For internal thread cutting



Ident. No. 022, 042, 052, 054, 056
Right, HC5630



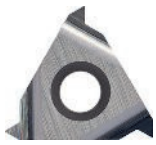
Ident. No. 021, 041, 051, 053, 055
Left, HC5630



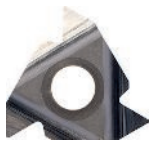
Ident. No. 020, 040, 050, 058, 064
Right, HC5615



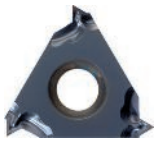
Ident. No. 023, 043, 057, 059–061
Left, HC5615



Ident. No. 001, 003, 005, 007, 009
Right, HW5615



Ident. No. 000, 002, 004, 006, 008
Left, HW5615



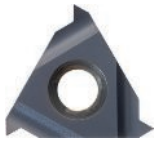
Ident. No. 130–132
Right, HC5630 with chip breaker

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5615		HC5630		HC5630		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		75-110 m/min		90-120 m/min		90-120 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		70-75 m/min		80-100 m/min		80-100 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●		200-600 m/min						200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron ●		70-80 m/min		100-110 m/min		100-110 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Min./max. pitch	17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.	
11 (IR/IL) A60	0.5-1.5 mm	020	●	021	●	022	●	023	●	000	○	001	○	-	-
16 (IR/IL) A60	0.5-1.5 mm	040	●	041	○	042	○	043	○	002	●	003	○	130	○
16 (IR/IL) G60	1.75-3.0 mm	050	●	051	○	056	●	057	●	004	○	005	○	132	●
16 (IR/IL) AG60	0.5-3.5 mm	058	●	053	●	052	●	059	●	006	●	007	○	-	-
22 (IR/IL) N60	3.5-5.0 mm	064	●	055	○	054	●	061	●	008	○	009	○	-	-

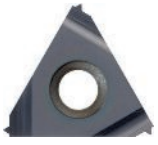
Prod. Gr. 158

ATORN® Thread cutting inserts partial profile 55°

For internal thread cutting



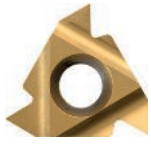
Ident. No. 030–032, 092, 094
Right, HC5630



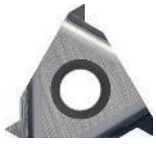
Ident. No. 062, 082, 093, 095–096
Left, HC5630



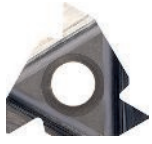
Ident. No. 033–034, 060, 080, 090
Right, HC5615



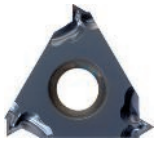
Ident. No. 035–039
Left, HC5615



Ident. No. 011, 013, 015, 017
Right, HW5615



Ident. No. 010, 012, 014, 016
Left, HW5615



Ident. No. 152–154
Right, HC5630 with chip breaker

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron ●		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Min./max. number of thread starts per inch	17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.	
11 (IR/IL) A55	48-16	030	●	062	○	060	●	035	●	010	○	011	○	-	-
16 (IR/IL) A55	48-16	031	○	082	○	080	●	036	○	012	○	013	○	152	○

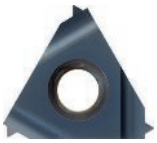
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys										30-40 m/min		30-40 m/min			
ISO name	Min./max. number of thread starts per inch	17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.		17737... Ident. No.	
16 (IR/IL) AG55	48-8	092	●	093	○	033	●	038	●	014	○	015	○	-	-
16 (IR/IL) G55	14-8	032	○	096	○	090	●	037	○	016	●	017	○	154	●
22 (IR/IL) N55	7-5	094	○	095	○	034	●	039	○	-	-	-	-	-	-

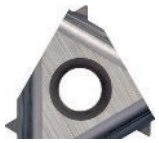
Prod. Gr. 158

ATORN® Thread cutting inserts full profile 60°

For internal thread cutting



Ident. No. 017, 027, 037, 047, 117, 127, 137, 147, 157, 167, 177, 187, 197-316, 376-379
Right, HC5630



Ident. No. 800, 806, 812, 816, 818, 820, 822, 824, 826, 828, 832, 834, 836, 838, 840, 842, 844, 848, 919, 921, 923-927
Left, HW5615



Ident. No. 317-345, 380-389
Left, HC5630



Ident. No. 012, 022, 032, 042, 112, 122, 132, 142, 152, 162, 172, 182, 192, 346-362, 390-394
Right, HC5615



Ident. No. 850-908
Left, HC5615



Ident. No. 799, 801-805, 807-811, 813-815, 817, 819, 821, 823, 825, 827, 829-831, 833, 835, 837, 839, 841, 843, 845-847, 918, 920, 922
Right, HW5615



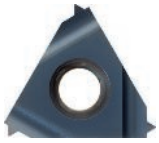
Ident. No. 560-572
Right, HC5630 with chip breaker

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys										30-40 m/min		30-40 m/min			
ISO name	Pitch (mm)	17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.	
11 (IR/IL) 0.35 ISO	0.35	298	○	317	○	346	○	850	○	799	○	800	○	-	-
11 (IR/IL) 0.40 ISO	0.40	299	○	318	○	347	○	852	○	801	○	-	-	-	-
11 (IR/IL) 0.45 ISO	0.45	302	○	-	-	348	○	-	-	803	○	-	-	-	-
11 (IR/IL) 0.5 ISO	0.5	017	●	380	○	012	●	856	○	805	○	806	○	-	-
11 (IR/IL) 0.6 ISO	0.6	303	○	-	-	349	○	-	-	807	○	-	-	-	-
11 (IR/IL) 0.7 ISO	0.7	376	○	322	○	390	○	860	○	809	○	-	-	-	-
11 (IR/IL) 0.75 ISO	0.75	027	●	323	○	022	●	862	○	811	○	812	○	-	-
11 (IR/IL) 0.8 ISO	0.8	305	○	382	○	391	○	864	○	813	○	-	-	-	-
11 (IR/IL) 1.0 ISO	1	037	●	325	●	032	●	866	●	815	●	816	○	-	-
11 (IR/IL) 1.25 ISO	1.25	306	○	326	○	352	●	868	○	817	○	818	○	-	-
11 (IR/IL) 1.5 ISO	1.5	047	●	327	●	042	●	870	●	819	○	820	○	-	-
11 (IR/IL) 1.75 ISO	1.75	307	○	328	○	353	○	872	○	821	○	822	○	-	-
11 (IR/IL) 2.0 ISO	2	308	●	329	○	392	●	874	●	823	○	824	○	-	-
16 (IR/IL) 0.5 ISO	0.5	117	●	383	○	112	●	876	○	825	○	826	○	-	-
16 (IR/IL) 0.75 ISO	0.75	127	●	384	○	122	●	878	○	827	○	828	○	-	-
16 (IR/IL) 0.80 ISO	0.8	309	○	332	○	355	○	880	○	829	○	-	-	-	-
16 (IR/IL) 1.0 ISO	1	137	●	333	○	132	●	882	●	831	○	832	○	560	○
16 (IR/IL) 1.25 ISO	1.25	147	●	385	○	142	●	884	○	833	○	834	○	562	●
16 (IR/IL) 1.5 ISO	1.5	157	●	335	●	152	●	886	●	835	○	836	○	564	●
16 (IR/IL) 1.75 ISO	1.75	167	●	336	○	162	●	888	○	837	○	838	○	566	●
16 (IR/IL) 2.0 ISO	2	177	●	337	●	172	●	890	●	839	○	840	○	568	●
16 (IR/IL) 2.5 ISO	2.5	187	●	338	○	182	●	892	○	841	○	842	○	570	○
16 (IR/IL) 3.0 ISO	3	197	●	339	○	192	●	894	○	843	○	844	○	572	●
16 (IR/IL) 3.5 ISO	3.5	377	●	386	○	356	●	896	○	845	○	-	-	-	-
22 (IR/IL) 3.5 ISO	3.5	378	●	387	○	357	○	898	○	847	○	848	○	-	-
22 (IR/IL) 4.0 ISO	4	312	●	342	○	358	●	900	○	918	○	919	○	-	-
22 (IR/IL) 4.5 ISO	4.5	313	○	343	○	359	○	902	○	920	○	921	○	-	-
22 (IR/IL) 5.0 ISO	5	379	●	388	○	393	○	904	○	922	○	923	○	-	-
22 (IR/IL) 5.5 ISO	5.5	315	○	345	○	394	○	906	○	-	-	925	○	-	-
22 (IR/IL) 6.0 ISO	6	316	●	389	○	362	●	908	○	-	-	927	○	-	-

Prod. Gr. 158

ATORN® Thread cutting inserts full profile 55°

For internal thread cutting



Ident. No. 217, 227, 267, 277, 297–685
Right, HC5630



Ident. No. 687–695
Left, HC5630



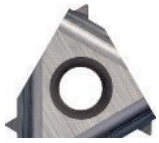
Ident. No. 212, 222, 262, 272, 292, 697–702
Right, HC5615



Ident. No. 703–713
Left, HC5615



Ident. No. 948–952, 954, 956–958, 990, 992, 994, 996–998
Right, HW5615



Ident. No. 953, 955, 959, 991, 993, 995
Left, HW5615



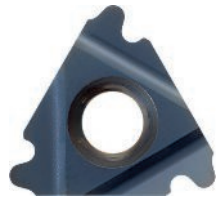
Ident. No. 720–726
Right, HC5630 with chip breaker

Machining direction		Right		Left		Right		Left		Right		Left		Right	
Carbide type		HC5630		HC5630		HC5615		HC5615		HW5615		HW5615		HC5630 with chip breaker	
Vc in steel ●		90-120 m/min		90-120 m/min		75-110 m/min		75-110 m/min						75-110 m/min	
Vc in stainless steel ●		80-100 m/min		80-100 m/min		70-75 m/min		70-75 m/min		60-70 m/min		60-70 m/min		80-100 m/min	
Vc in non-ferrous metals ●						200-600 m/min		200-600 m/min		200-600 m/min		200-600 m/min			
Vc in cast iron ●		100-110 m/min		100-110 m/min		70-80 m/min		70-80 m/min						100-110 m/min	
Vc in special alloys ●										30-40 m/min		30-40 m/min			
ISO name	Number of thread starts per inch	17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.		17743... Ident. No.	
11 (IR/IL) 11W	11	680	○	-	-	697	○	-	-	948	○	-	-	-	-
11 (IR/IL) 12W	12	681	○	687	○	698	○	704	○	950	○	-	-	-	-
11 (IR/IL) 14W	14	227	●	688	○	222	●	705	○	952	○	953	○	-	-
11 (IR/IL) 19W	19	217	●	689	○	212	●	706	○	954	○	955	○	-	-
11 (IR/IL) 28W	28	682	○	690	○	699	○	-	-	956	○	-	-	-	-
16 (IR/IL) 11W	11	297	●	691	○	292	●	708	○	958	○	959	○	720	●
16 (IR/IL) 12W	12	683	○	692	○	700	○	709	○	990	○	991	○	-	-
16 (IR/IL) 14W	14	277	●	693	○	272	●	710	○	992	○	993	○	724	○
16 (IR/IL) 16W	16	684	○	694	○	701	○	711	○	994	○	995	○	-	-
16 (IR/IL) 19W	19	267	●	695	○	262	●	712	○	996	○	-	-	726	○
16 (IR/IL) 28W	28	685	○	-	-	702	○	713	○	998	○	-	-	-	-
11 (IR/IL) 11W	-	-	-	-	-	-	-	703	○	-	-	-	-	-	-

Prod. Gr. 158

ATORN® Thread cutting inserts, full-profile, round thread

For right-hand external thread cutting

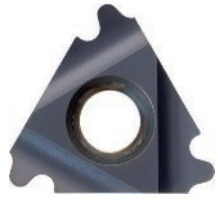


ISO name							16 ER 6RND	16 ER 8RND
Pitch (mm)							6	8
	Machining direction	Carbide type	Vc in steel ●	Vc in stainless steel ●	Vc in cast iron ●			
17741...	Right	HC5630	90-120 m/min	80-100 m/min	100-110 m/min	Ident. No.	855	850
							●	●

Prod. Gr. 158

ATORN® Thread cutting inserts, full-profile, round thread

For right-hand internal thread cutting



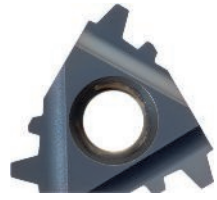
Machining direction	Right
Carbide type	HC5630
Vc in steel ●	90-120 m/min
Vc in stainless steel ●	80-100 m/min
Vc in cast iron ●	100-110 m/min

ISO name	Pitch (mm)	17743... Ident. No.	
16 IR 6RND	6	432	●
16 IR 8RND	8	430	●
22 IR 4RND	4	436	●
22 IR 6RND	6	434	○

Prod. Gr. 158

ATORN® Thread cutting inserts, full-profile, trapezoidal thread

For right-hand external thread cutting



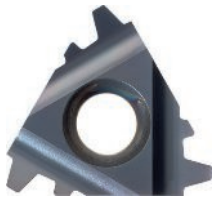
Machining direction	Right
Carbide type	HC5630
Vc in steel ●	90-120 m/min
Vc in stainless steel ●	80-100 m/min
Vc in cast iron ● (m/min)	100

ISO name	Pitch (mm)	17741... Ident. No.	
16 ER 3TR	3	805	●
22 ER 4TR	4	810	●
22 ER 5TR	5	815	●
22 ER 6TR	6	825	●

Prod. Gr. 158

ATORN® Thread cutting inserts, full-profile, trapezoidal thread

For right-hand internal thread cutting



	Machining direction	Right	
	Carbide type	HC5630	
	Vc in steel ●	90-120 m/min	
	Vc in stainless steel ●	80-100 m/min	
	Vc in cast iron ● (m/min)	100	
ISO name	Pitch (mm)	17743... Ident. No.	
16 IR 2TR	2	420	●
16 IR 3TR	3	422	●
22 IR 4TR	4	424	●
22 IR 5TR	5	426	●
22 IR 6TR	6	428	●

Prod. Gr. 158

ATORN® Plunge inserts and plunge insert set

For thread holders

Application:
For producing outer and inner grooves on CNC or conventional machines in steel, stainless steel, cast iron and non-ferrous metals material groups at mid-range cutting speed.

Execution:
- Plunge insert ground on three sides

Advantage:
- Thread-turning inserts and plunge inserts require only one holder
- Three-cutter geometry ensures high profitability
- Innovative cutting geometry and TiN coating ensure a long service life

Technical data:
- Tolerance of plunge depth: ± 0.02 mm



Ident. No. 010–020, 040–050



Ident. No. 022–032, 052–062



p. 660



p. 656

				Machining direction	Right | Left		Left | Right	
				Machining type	Outside | Inside		Outside | Inside	
				Carbide type	HC5615		HC5615	
ISO name	Radius (mm)	Recessing width (mm)	Plunge depth (mm)	Radius tolerance	17750... Ident. No.		17750... Ident. No.	
16ER/IL 1.0	-	1.0	1.4	-	010	●	-	-
16ER/IL 1.2	-	1.2	1.6	-	012	●	-	-
16ER/IL 1.4	-	1.4	1.8	-	014	●	-	-
16ER/IL 1.7	-	1.7	2.0	-	016	●	-	-
16ER/IL 1.95	-	1.95	2.0	-	018	●	-	-
16ER/IL 2.25	-	2.25	2.25	-	020	●	-	-
16IR/EL 1.0	-	1.0	1.4	-	-	-	022	●
16IR/EL 1.2	-	1.2	1.6	-	-	-	024	●
16IR/EL 1.4	-	1.4	1.8	-	-	-	026	●
16IR/EL 1.7	-	1.7	2.0	-	-	-	028	●
16IR/EL 1.95	-	1.95	2.0	-	-	-	030	●
16IR/EL 2.25	-	2.25	2.25	-	-	-	032	●
16ER/IL R 0.5	0.5	-	1.4	± 0.04	040	○	-	-
16ER/IL R 0.6	0.6	-	1.6	± 0.04	042	○	-	-
16ER/IL R 0.9	0.9	-	1.8	± 0.04	044	○	-	-
16ER/IL R 1.0	1.0	-	2.0	± 0.04	046	○	-	-
16ER/IL R 1.1	1.1	-	2.0	± 0.04	048	○	-	-
16ER/IL R 1.2	1.2	-	2.25	± 0.04	050	○	-	-
16IR/EL R 0.5	0.5	-	1.4	± 0.04	-	-	052	○
16IR/EL R 0.6	0.6	-	1.6	± 0.04	-	-	054	○
16IR/EL R 0.9	0.9	-	1.8	± 0.04	-	-	056	○
16IR/EL R 1.0	1.0	-	2.0	± 0.04	-	-	058	○
16IR/EL R 1.1	1.1	-	2.0	± 0.04	-	-	060	○
16IR/EL R 1.2	1.2	-	2.25	± 0.04	-	-	062	○

Prod. Gr. 158

ATORN® Plunge insert set

For creating external and internal recesses on CNC or conventional machines.

Application:
For producing outer and inner grooves on CNC or conventional machines in steel, stainless steel, cast iron and non-ferrous metals material groups at mid-range cutting speed.

Execution:
- Set of plunge inserts ground on three sides, comprising 1 each of plunge width 1/1.2/1.4/1.7/1.95/2.25

Advantage:
- Tool-cost optimisation: Thread-turning inserts and plunge inserts require only one holder
- Three-cutter geometry ensures high profitability
- Innovative cutting geometry and TiN coating ensure a long service life



ISO name			16 (ER/IL) 1.00-2.25 SET	16 (IR/EL) 1.00-2.25 SET
Carbide type			HC5640	HC5640
Machining type			Outside | Inside	Outside | Inside
	Machining direction			
17750...	Right | Left	Ident. No.	021	033
			●	●

Prod. Gr. 158

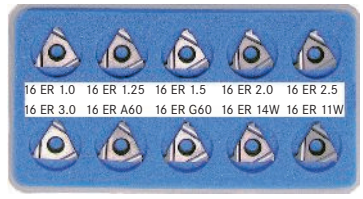
ATORN® Thread indexable insert set

For right-hand external and internal threads

Application:
For manufacturing threads in the steel, stainless steel and cast iron material group on CNC machines at medium to high speed.

Execution:
- **Ident. No. 001:** Ground thread-turning insert for male threads, TiALN coated
- **Ident. No. 002:** Thread-turning insert set for female threads, TiALN coated

Advantage:
- Ground thread-turning insert ensures good surface qualities and cutting precision
- High cutting speed and long service life through innovative TiALN coating technology
- Set covers a broad range of uses in the most common pitches



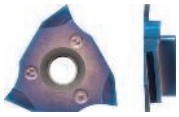
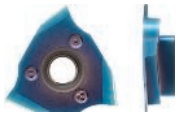
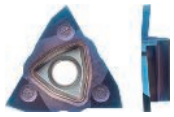
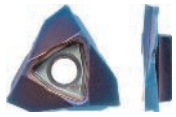
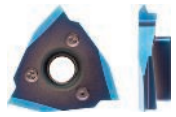
Composition of set			16 ER 1.0 ISO, 16ER 1.25 ISO, 16 ER 1.5 ISO, 16 ER 2.0 ISO, 16 ER 2.5 ISO, 16 ER 3.0 ISO, 16 ER A60, 16 ER G60, 16 ER 14W, 16 ER 11W	16 IR 1.0 ISO, 16 IR 1.25 ISO, 16 IR 1.5 ISO, 16 IR 2.0 ISO, 16 IR 2.5 ISO, 16 IR 3.2 ISO, 16 IR A60, 16 IR G60, 16 IR 14W, 16 IR 11W
	Cutting direction			
17748...	Right-hand cutting	Ident. No.	001	002
			●	●

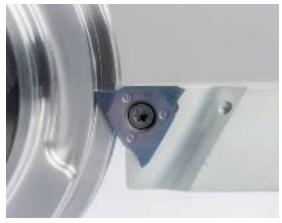
Prod. Gr. 158



Grooving and lathe system
For professional serial users



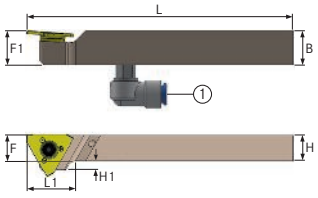


application:
the newly developed Atorn grooving and lathe system has been engineered for ambitious serial machinists.
it covers the machining tasks grooving, tapping, thread cutting, lathing and recessing.

advantages:
- wide machining range with only one holder.
- high-performance cutting material and coating ensure a long service life and a wide machining range even in difficult materials such as stainless steel or titanium.
- 3 cutting edges make for a high level of profitability.
- high switching accuracy - can be changed directly on the machine.
- internal coolant supply ensures a long service life and high degree of process reliability.

ATORN® Holder for 3-blade cutting and turning system
For cutting insert no. 17759

Application:
For carrying grooving inserts, 3 cutting edges



Advantage:
- Catch system ensures high force transmission of the cutting insert
- High-strength carrier


Ident. No. 003–008


Ident. No. 009–014

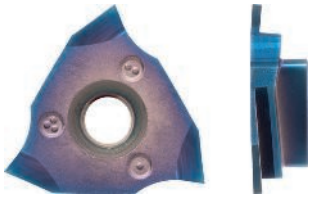
B=F1 (mm)	H (mm)	L1 (mm)	L (mm)	F (mm)	H (mm)	H1 (mm)	Coolant supply	Tool design Ø of the cooling duct connection	Left 17759... Ident. No.		Right 17759... Ident. No.	
16	8	17	125	8	8	8	External	4/6 mm	003	●	004	●
16	10	17	125	10	10	6	Internal	4/6 mm	005	●	006	●
16	12	17	125	12	12	4	Internal	4/6 mm	007	●	008	●
16	16	-	125	16	16	-	Internal	4/6 mm	009	●	010	●
20	20	-	125	20	20	-	Internal	4/6 mm	011	●	012	●
25	25	-	150	25	25	-	Internal	4/6 mm	013	●	014	●

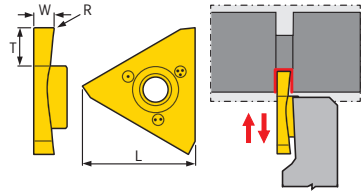
Prod. Gr. 1FF

ATORN® 3-blade cutting insert
For cutting

Application:
For grooving.

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





				Machining direction		Right		Left	
				Vc in steel ●		40-150 m/min		40-150 m/min	
				Vc in stainless steel ●		30-120 m/min		30-120 m/min	
				Vc in special alloys ●		30-70 m/min		30-70 m/min	
				Min./max. Vc in hardened steel 50 HRC		20-50 m/min		20-50 m/min	
L (mm)	W (mm)	T (mm)	Radius (mm)	Min./max. f radial	Min./max. f axial	17759... Ident. No.		17759... Ident. No.	
19	0.5	1.5	-	0.01-0.06 mm/U	0.02-0.10 mm/U	050	●	051	●
19	0.6	1.6	-	0.01-0.06 mm/U	0.02-0.10 mm/U	052	●	053	●
19	0.7	1.7	-	0.01-0.06 mm/U	0.02-0.10 mm/U	054	●	055	●
19	0.8	2.0	0.05	0.01-0.06 mm/U	0.02-0.10 mm/U	056	●	057	●
19	1	2.5	0.05	0.02-0.07 mm/U	0.02-0.10 mm/U	058	●	059	●
19	1.2	3	0.05	0.02-0.07 mm/U	0.02-0.10 mm/U	060	●	061	●
19	1.4	3	0.05	0.03-0.08 mm/U	0.02-0.10 mm/U	062	●	063	●
19	1.5	3	0.05	0.03-0.08 mm/U	0.02-0.10 mm/U	064	●	065	●
19	1.7	4	0.05	0.04-0.09 mm/U	0.02-0.20 mm/U	066	●	067	●
20	2	4	0.1	0.05-0.10 mm/U	0.02-0.20 mm/U	068	●	069	●
20	2.25	5	0.1	0.05-0.10 mm/U	0.02-0.20 mm/U	070	●	071	●
20	2.5	6	0.1	0.05-0.10 mm/U	0.02-0.20 mm/U	072	●	073	●
20	3	6	0.1	0.05-0.10 mm/U	0.02-0.20 mm/U	074	●	075	●

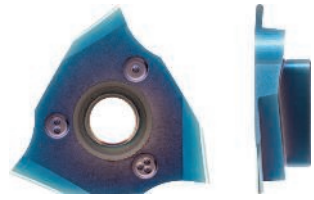
Prod. Gr. 1FG

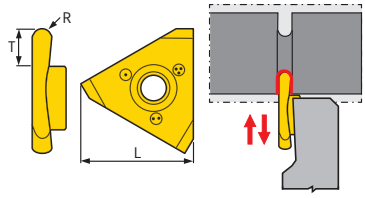
ATORN® 3-blade cutting insert

For cutting with radius

Application:
For grooving with radius.

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





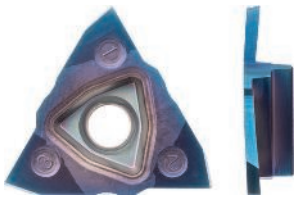
			Machining direction		Right		Left	
			Vc in steel ●		40-150 m/min		40-150 m/min	
			Vc in stainless steel ●		30-120 m/min		30-120 m/min	
			Vc in special alloys ●		30-70 m/min		30-70 m/min	
			Min./max. Vc in hardened steel 50 HRC		20-50 m/min		20-50 m/min	
L (mm)	T (mm)	Radius (mm)	Min./max. f radial	Min./max. f axial	17759... Ident. No.		17759... Ident. No.	
19	1.5	0.25	0.01-0.06 mm/U	0.02-0.10 mm/U	080	●	081	●
19	2.0	0.40	0.01-0.06 mm/U	0.02-0.10 mm/U	082	●	083	●
19	2.5	0.50	0.02-0.07 mm/U	0.02-0.10 mm/U	084	●	085	●
19	3.0	0.60	0.02-0.07 mm/U	0.02-0.10 mm/U	086	●	087	●
19	3.5	0.80	0.04-0.09 mm/U	0.02-0.20 mm/U	088	●	089	●
19	4.0	1.00	0.05-0.10 mm/U	0.02-0.20 mm/U	290	●	091	●
20	6.0	1.25	0.05-0.10 mm/U	0.02-0.20 mm/U	292	●	093	●
20	6.0	1.50	0.05-0.10 mm/U	0.02-0.20 mm/U	294	●	095	●

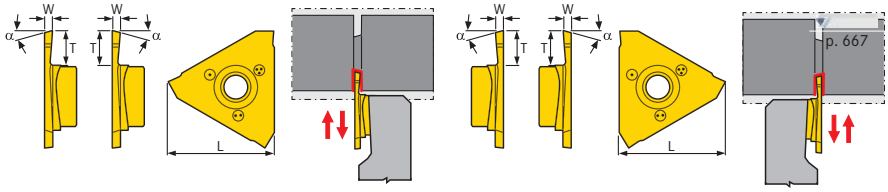
Prod. Gr. 1FG

ATORN® 3-blade cutting insert
For parting

Application:
For tapping.

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





Machining direction right

Cut-off direction
Right Left

Machining direction left

Cut-off direction
Right Left

				Machining direction	Right		Right		Left		Left	
				Parting direction	Right		Left		Right		Left	
				Vc in steel ●	40-150 m/min		40-150 m/min		40-150 m/min		40-150 m/min	
				Vc in stainless steel ●	30-120 m/min		30-120 m/min		30-120 m/min		30-120 m/min	
				Vc in special alloys ●	30-70 m/min		30-70 m/min		30-70 m/min		30-70 m/min	
				Min./max. Vc in hardened steel 50 HRC	20-50 m/min		20-50 m/min		20-50 m/min		20-50 m/min	
L (mm)	W (mm)	α (Degree)	T (mm)	Min./max. f radial	17759... Ident. No.		17759... Ident. No.		17759... Ident. No.		17759... Ident. No.	
19	1.0	15	5.4	0.02-0.09 mm/U	090	●	092	●	121	●	122	●
19	1.2	15	5.4	0.02-0.09 mm/U	094	●	096	●	124	●	126	●
20	1.5	15	6.4	0.04-0.10 mm/U	098	●	100	●	128	●	130	●
20	1.8	15	6.4	0.04-0.10 mm/U	102	●	104	●	132	●	134	●
20	2.0	15	6.4	0.05-0.12 mm/U	106	●	108	●	136	●	138	●
20	2.5	15	6.4	0.05-0.12 mm/U	110	●	112	●	140	●	142	●
20	3.0	15	6.4	0.05-0.12 mm/U	114	●	120	●	144	●	146	●

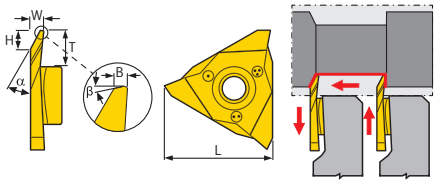
Prod. Gr. 1FG

ATORN® 3-blade cutting insert
For back turning

Application:
For recessing.

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





								Machining direction	Right		Left	
								Vc in steel ●	40-150 m/min		40-150 m/min	
								Vc in stainless steel ●	30-120 m/min		30-120 m/min	
								Vc in special alloys ●	30-70 m/min		30-70 m/min	
								Min./max. Vc in hardened steel 50 HRC	20-50 m/min		20-50 m/min	
L (mm)	W (mm)	T (mm)	Radius (mm)	α (Degree)	β (Degree)	B (mm)	H (mm)	f min./max.	17759... Ident. No.		17759... Ident. No.	
19	3.4	5.4	0.1	30	12	0.5	4.3	0.05-0.15 mm/U	150	●	152	●
20	3.4	6.4	0.1	30	12	0.5	4.3	0.05-0.15 mm/U	154	●	156	●

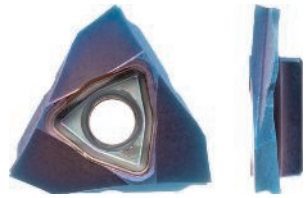
Prod. Gr. 1FG

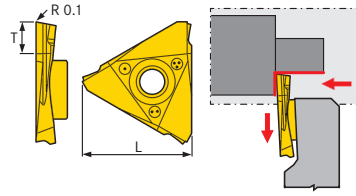
ATORN® 3-blade cutting insert

For longitudinal turning and facing

Application:
For longitudinal and face turning

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





			Machining direction	Right		Left	
			Vc in steel ●	40-150 m/min		40-150 m/min	
			Vc in stainless steel ●	30-120 m/min		30-120 m/min	
			Vc in special alloys ●	30-70 m/min		30-70 m/min	
			Min./max. Vc in hardened steel 50 HRC	20-50 m/min		20-50 m/min	
L	T (mm)	Radius (mm)	f min./max.	17759... Ident. No.		17759... Ident. No.	
19	5.4	0.1	0.05-0.15 mm/U	170	●	172	●
20	6.4	0.1	0.05-0.15 mm/U	174	●	176	●

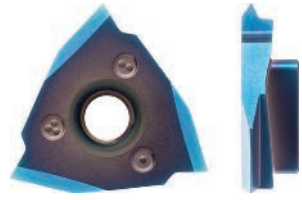
Prod. Gr. 1FG

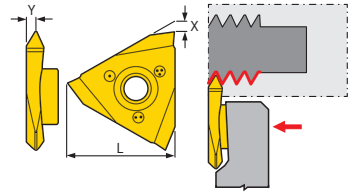
ATORN® 3-blade cutting insert

for variable thread cutting 60° partial profile

Application:
For variable thread cutting, 60° sub-profile

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





					Machining direction	Right		Left	
					Vc in steel ●	40-150 m/min		40-150 m/min	
					Vc in stainless steel ●	30-120 m/min		30-120 m/min	
					Vc in special alloys ●	30-70 m/min		30-70 m/min	
					Min./max. Vc in hardened steel 50 HRC	20-50 m/min		20-50 m/min	
L (mm)	Min./max. pitch	Min./max. number of thread starts per inch	X (mm)	Y (mm)		17759... Ident. No.		17759... Ident. No.	
19	0.5-1.5 mm	48-16	2.8	1.1		180	●	182	●
19	1.75-3.0 mm	14-8	2.8	1.7		184	●	186	●
19	0.5-3.0 mm	48-16	2.8	1.7		188	●	190	●

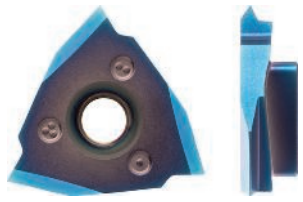
Prod. Gr. 1FG

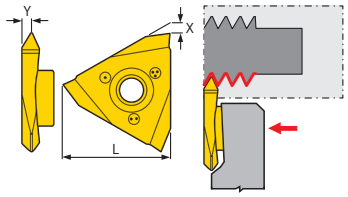
ATORN® 3-blade cutting insert

for variable thread cutting 55° partial profile

Application:
For variable thread cutting, 55° sub-profile

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





					Machining direction	Right		Left	
					Vc in steel ●	40-150 m/min		40-150 m/min	
					Vc in stainless steel ●	30-120 m/min		30-120 m/min	
					Vc in special alloys ●	30-70 m/min		30-70 m/min	
					Min./max. Vc in hardened steel 50 HRC	20-50 m/min		20-50 m/min	
L (mm)	Min./max. pitch	Min./max. number of thread starts per inch	X (mm)	Y (mm)		17759... Ident. No.		17759... Ident. No.	
19	0.5-1.5 mm	48-16	2.8	1		200	●	202	●
19	1.75-3.0 mm	14-8	2.8	1.7		204	●	206	●
19	0.5-3.0 mm	48-8	2.8	1.7		208	●	210	●

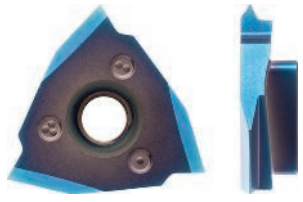
Prod. Gr. 1FG

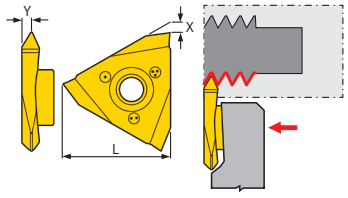
ATORN® 3-blade cutting insert

For thread cutting, 60° full profile

Application:
For variable thread cutting, 60° full-profile

Advantage:
- High-quality cutting material and innovative coating technology for high requirements around service life





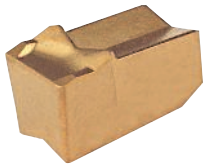
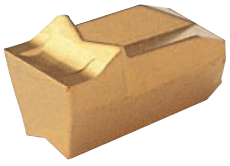
				Machining direction	Right		Left	
				Vc in steel ●	40-150 m/min		40-150 m/min	
				Vc in stainless steel ●	30-120 m/min		30-120 m/min	
				Vc in special alloys ●	30-70 m/min		30-70 m/min	
				Min./max. Vc in hardened steel 50 HRC	20-50 m/min		20-50 m/min	
L (mm)	Pitch (mm)	X (mm)	Y (mm)		17759... Ident. No.		17759... Ident. No.	
19	0.5	2.8	0.6		220	●	222	●
19	0.7	2.8	0.7		224	●	226	●
19	0.75	2.8	0.7		228	●	230	●
19	0.8	2.8	0.7		232	●	234	●
19	1.0	2.8	0.8		236	●	238	●
19	1.25	2.8	1.0		240	●	242	●
19	1.5	2.8	1.1		244	●	246	●
19	1.75	2.8	1.3		248	●	250	●

Prod. Gr. 1FG


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Cutting system with single-cutter cutting insert
For demanding serial users




Application:
For grooving, tapping, copy turning and axial grooving.

- Wide range of holders and cutting inserts for numerous applications
- Wide range of chipping geometries ensure reliable working
- Precise insert seating for high-precision lathe operations
- High-strength carrier material ensures long service life of carriers

ATORN® Recessing system AH101 neutral cutter holder
For external deep recessing and parting using AIMC, AIMJ and AIPV cutting inserts

Application:
For deep recessing and parting off, external.

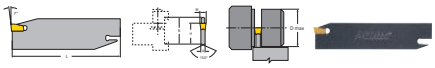
Execution:
- Precision-manufactured steel support, burnished and hardened

Advantage:
- High-quality and wear-resistant steel support
- Precisely manufactured insert setting

Delivery:
With ejector, no cutting insert

Notes:
Blade holder is not suitable for turning and copy turning operations!





W (mm)	A (mm)	H (mm)	B (mm)	L (mm)	D max (mm)	Suitable for clamping shanks	17665... Ident. No.	
1.6	1.2	15.7	19	86	32	ATBR 19-2 | ATBN 16-2	010	●
2.2	1.6	15.7	19	86	38	ATBR 19-2 | ATBN 16-2	015	●
1.6	1.2	21.4	26	110	35	ATBR 25-6 | ATBN 16-5 | ATBN 19-5 | ATBN 20-5	020	●
2.2	1.6	21.4	26	110	50	ATBR 25-6 | ATBN 16-5 | ATBN 19-5 | ATBN 20-5	025	●
3.1	2.4	21.4	26	110	75	ATBR 25-6 | ATBN 16-5 | ATBN 19-5 | ATBN 20-5	030	●
4.1	3.2	21.4	26	110	80	ATBR 25-6 | ATBN 16-5 | ATBN 19-5 | ATBN 20-5	035	●
2.2	1.6	24.8	32	150	50	ATBN 20-6 | ATBN 25-6 | ATBN 32-6	040	●
3.1	2.4	24.8	32	150	100	ATBN 20-6 | ATBN 25-6 | ATBN 32-6	045	●
4.1	3.2	24.8	32	150	100	ATBN 20-6 | ATBN 25-6 | ATBN 32-6	050	●
5.1	4	24.8	32	150	125	ATBN 20-6 | ATBN 25-6 | ATBN 32-6	055	●
6.4	5.2	24.8	32	150	125	ATBN 20-6 | ATBN 25-6 | ATBN 32-6	060	●

Prod. Gr. 181

ATORN® Recessing system AH201 clamp holder

For external recessing and parting using AIMC, AIMJ and AIPV cutting inserts

Application:
For parting off and external grooving.

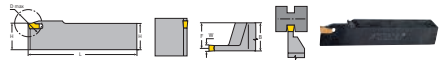
Execution:
- precision-manufactured steel holder, burnished and hardened

Advantage:
- high-quality and wear-resistant steel holder
- precision-manufactured insert seat

Delivery:
with ejector, without cutting insert

Notes:
The cutter holder is not suitable for lathe and copy turning tasks!





W (mm)	B (mm)	H (mm)	F (mm)	L (mm)	Tool design D max (mm)	Right 17665... Ident. No.		Left 17665... Ident. No.	
2.2	12	12	11.2	110	32	110	●	111	●
3.1	12	12	10.8	110	32	115	●	116	●
2.2	16	16	15.2	110	32	120	●	121	○
3.1	16	16	14.8	110	35	125	●	126	●
2.2	20	20	19.2	110	35	130	●	131	●
3.1	20	20	18.8	120	52	135	●	136	●
4.1	20	20	18.4	120	57	140	●	141	●
3.1	25	25	23.8	150	56	145	●	146	●
4.1	25	25	23.4	150	65	150	●	151	●

Prod. Gr. 181

ATORN® Recessing system AH211 clamp holder

For external recessing, parting and copying using AIMC, AIMJ and AIPV cutting inserts

Application:
For parting off, grooving and copy turning externally.

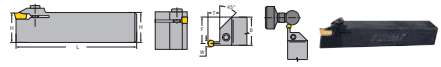
Execution:
- precision-manufactured steel holder, burnished and hardened with clamping element

Advantage:
- high-quality and wear-resistant steel holder with high tensile clamping element
- precision-manufactured insert seat

Delivery:
with clamping screw, without cutting insert

Notes:
AIMC, AIMJ cutting inserts are only suitable for recessing work.





W (mm)	B (mm)	H (mm)	L (mm)	F (mm)	Tool design T (mm)	Recessing system AH211 clamp holder: Right 17665... Ident. No.		Left 17665... Ident. No.		A-Cut replacement clamping screw 17668... Ident. No.	
3.1	16	16	100	14.7	9.9	210	●	211	●	500	●
4.1	16	16	100	14.2	13	215	●	216	●	500	●
3.1	20	20	125	18.7	9.9	220	●	221	●	505	●
4.1	20	20	125	18.2	13	225	●	226	●	505	●
3.1	25	25	150	23.7	9.9	230	●	231	●	505	●
4.1	25	25	150	23.2	13	235	●	236	●	510	●
5.1	25	25	150	22.7	13	240	●	241	●	510	●
6.4	25	25	150	22.2	16	245	●	246	●	510	●

Prod. Gr. 181

ATORN® Recessing system AH619619 boring bar

For internal recessing and copying using AIMC, AIMJ and AIPV cutting inserts

Application:
For recessing and copy turning, internal.

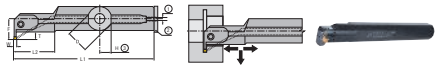
Execution:
- Precision-manufactured boring bar with internal cooling, burnished and hardened with clamping element, sealing thread: R1/8”

Advantage:
- High-quality and wear-resistant steel support with high-strength clamping element
- Precisely manufactured insert setting

Delivery:
With clamping screw, Torx wrench T20, seal, no cutting insert

Notes:
AIMC, AIMJ cutting inserts only suitable for recessing work. When using the seal, the boring bar can be shortened by up to 100 mm.





									Recessing system AH619619 boring bar				A-Cut replacement clamping screw	
								Tool design	Right		Left			
W (mm)	D (mm)	F (mm)	T (mm)	L1 (mm)	L2 (mm)	H (mm)	C (mm)	Min. bore Ø (mm)	17665... Ident. No.		17665... Ident. No.		17668... Ident. No.	
2.2	25	20	6.5	200	51	11.5	0.3	35	310	●	311	●	520	●
3.1	25	20.8	8	200	51	11.5	0.5	47	315	●	316	●	525	●
4.1	25	20.8	8	200	51	11.5	0.5	47	320	●	321	●	525	●
2.2	32	25	7.5	250	63.5	14.5	0.3	43	325	●	326	○	525	●
3.1	32	26.6	10	250	57	14.5	0.5	52	330	○	331	●	525	●
4.1	32	26.6	10	250	51	14	0.5	52	335	●	336	○	525	●
4.1	40	33	12	300	51	18	0.5	47	340	●	341	○	525	●

Prod. Gr. 181

ATORN® Recessing system AH106 right-hand cutter holder

For external axial recessing using AIMF cutting insert and ATBN.-6 clamping shank

Application:
For deep grooving and parting off externally.

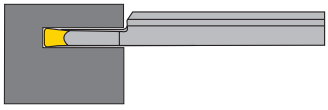
Execution:
- precision-manufactured steel holder, burnished and hardened

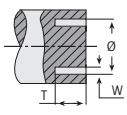
Advantage:
- high-quality and wear-resistant steel holder
- precision-manufactured insert seat

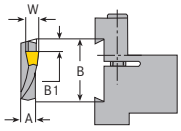
Delivery:
with ejector, without cutting insert

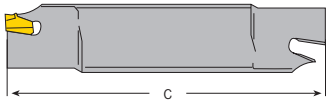


Right-hand version









W (mm)	A (mm)	B (mm)	C (mm)	B1 (mm)	T1 (mm)	D min./max.	17665... Ident. No.	
2.1	5.2	32	150	0.8	20	35-46 mm	500	●
2.1	5.2	32	150	0.8	20	45-61 mm	505	●
2.1	5.2	32	150	0.8	20	60-80 mm	510	●
2.1	4	32	150	0.8	20	79-102 mm	515	●
2.1	4	32	150	0	20	101-132 mm	520	○
3	5.2	32	150	1	20	65-92 mm	525	●
3	5.2	32	150	0.2	20	90-122 mm	530	●
3	5.2	32	150	0	25	120-160 mm	535	●
4	5.2	32	150	2.5	30	80-155 mm	540	●
4	5.2	32	150	2.5	30	150-500 mm	545	●
5	5.2	32	150	2.5	32	80-162 mm	550	●
5	5.2	32	150	2.5	35	150-600 mm	555	●
6	5.2	32	150	2.5	32	90-150 mm	560	○
6	5.2	32	150	2.5	35	148-700 mm	565	○

Prod. Gr. 181

ATORN® Recessing and parting system ATBR clamping shank

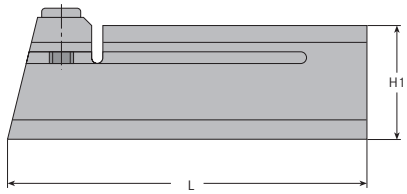
For mounting cutter holder AH101

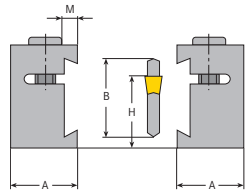
Application:
For clamping cutter holder AH101 for grooving and parting off.

Execution:
- precision-manufactured steel holder, burnished and hardened

Advantage:
- high-quality and wear-resistant steel holder with high tensile clamping element
- precision-manufactured cutter holder mount







ISO name	A (mm)	B (mm)	M (mm)	H (mm)	H1 (mm)	L (mm)	Suitable for clamping screw size	Suitable for knife carrier	Recessing and parting system ATBR clamping shank 17668... Ident. No.		A-Cut replacement clamping screw 17668... Ident. No.	
MAN 19-2	19	19	2	19	25	100	M6 x 25 mm	AH 101 19	010	●	515	●
ATBR 25-6	20	26	5	25	32	120	M6 x 30 mm	AH 101 26	015	●	515	●

Prod. Gr. 181

ATORN® Recessing and parting system ATBN clamping shank

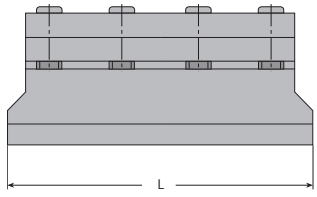
For mounting cutter holders AH101 and AH106

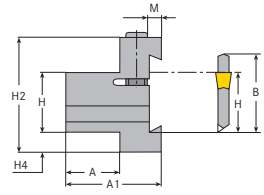
Application:
For clamping cutter holders AH101 and AH106 for grooving and parting off.

Execution:
- precision-manufactured steel holder, burnished, hardened with clamping element

Advantage:
- high-quality and wear-resistant steel holder with high tensile clamping element
- precision-manufactured cutter holder mount







ISO name	H (mm)	A (mm)	B (mm)	M (mm)	L (mm)	A1 (mm)	H4 (mm)	H2 (mm)	Suitable for knife carrier	Suitable for clamping screw size	Recessing and parting system ATBN clamping shank 17668... Ident. No.		A-Cut replacement clamping screw 17668... Ident. No.	
MAN 16-2	16	16	19	2	76	26	4	30	AH 101 19	M5 x 25 mm	100	●	510	●
MAN 16-5	16	16	26	4	76	30	12	38	AH 101 26	M6 x 30 mm	105	●	515	●
MAN 19-5	19	19	26	5	87	33	9	38	AH 101 26	M6 x 30 mm	110	●	515	●
MAN 20-5	20	19	26	4	87	33	8	38	AH 101 26	M6 x 30 mm	115	●	515	●
MAN 20-6	20	19	32	5.5	100	35	13	48	AH 101 32 | AH 106	M6 x 40 mm	120	●	515	●
ATBN 25-6	25	20	32	5.5	110	36	8	48	AH 101 32 | AH 106	M6 x 40 mm	125	●	515	●
MAN 32-6	32	28	32	5.5	120	44	3	48	AH 101 32 | AH 106	M6 x 40 mm	130	●	515	●

Prod. Gr. 181

ATORN® Spare clamping screws

For cutting system

Application:
For use in clamp holder AHR/L 211 and boring bar AHR/L 619



ISO name		M5 x 16/hex-agon socket	M5 x 20/hex-agon socket	M5 x 25/hex-agon socket	M6 x 25/hex-agon socket	SR 76-1021/ TX	SR 76-1022/ TX
17668...	Ident. No.	500	505	510	515	520	525
		●	●	●	●	●	●

Prod. Gr. 181

ATORN® Recessing and parting system AIMC cutting inserts

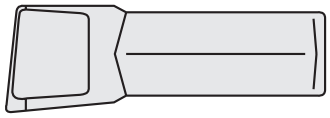
For AH 101, AHR/L 201 and AHR/L 619

Application:
For parting off and grooving in difficult operating conditions and medium to high feed rates in individual part and series production.

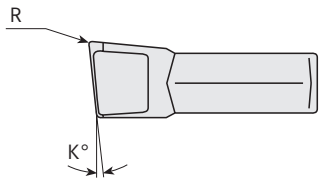
Advantage:
- extremely sturdy cutting edge, enables long service life even in difficult operating conditions

Execution:
- precision-sintered cutting insert, C geometry with sturdy cutting edge

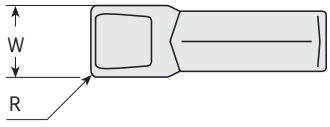




Left



Right



Neutral

	Surface	Uncoated	Coated	Coated
	Carbide type	HW3410	HC3630	HC3635
	Material to be processed	Non-ferrous metal | Cast metal	Steel	Steel | Stainless steel | Cast metal
	Vc in steel ●		40-150 m/min	45-180 m/min
	f in steel ●		0.05-0.40 mm/U	0.05-0.40 mm/U
	Vc in stainless steel ●			60-160 m/min
	f in stainless steel ●			0.05-0.20 mm/U
	Vc in non-ferrous metals ●	100-600 m/min		
	f in non-ferrous metals ●	0.05-0.20 mm/U		
	Vc in cast iron ●	80-120 m/min		40-140 m/min
	f in cast iron ●	0.05-0.15 mm/U		0.02-0.15 mm/U

ISO name	W (mm)	Radius (mm)	K° (Degree)	Tool design	17666... Ident. No.		17666... Ident. No.		17666... Ident. No.	
AIMC 1,6	1.6	0.16	0	Neutral	001	●	002	●	-	-
AIMC 2	2.2	0.2	0	Neutral	006	●	007	●	008	●
AIMC 2 6L	2.2	0.2	6	Left	011	●	012	●	-	-
AIMC 2 6R	2.2	0.2	6	Right	016	●	017	●	-	-
AIMC 3	3.1	0.2	0	Neutral	021	●	022	●	023	●
AIMC 3 6L	3.1	0.2	6	Left	026	●	027	●	028	●
AIMC 3 6R	3.1	0.2	6	Right	031	●	032	●	033	●
AIMC 4	4.1	0.25	0	Neutral	036	●	037	●	038	●
AIMC 4 6L	4.1	0.25	6	Left	041	●	042	●	-	-
AIMC 4 6R	4.1	0.25	6	Right	046	●	047	●	-	-
AIMC 5	5.1	0.3	0	Neutral	051	●	052	●	053	●
AIMC 5 6L	5.1	0.3	6	Left	056	○	057	○	-	-
AIMC 5 6R	5.1	0.3	6	Right	061	●	-	-	-	-
AIMC 6	6.4	0.35	0	Neutral	066	●	067	●	068	●
AIMC 6 6L	6.4	0.35	6	Left	071	○	072	○	-	-
AIMC 6 6R	6.4	0.35	6	Right	076	●	077	●	-	-

Prod. Gr. 181

ATORN® Recessing and parting system AIMJ cutting inserts

For AH 101, AHR/L 201, AHR/L 211 and AHR/L 619

Application:

Ident. No. 101, 106, 111, 116, 121, 126, 131, 136, 141, 146: For parting off and grooving under medium operating conditions in soft materials, small diameters and pipes with low feed rates in the material group of cast iron and non-ferrous metals in individual parts and series production.

Ident. No. 102–103, 107–108, 112–113, 117–118, 122–123, 127–128, 132–133, 138, 142–143, 147: For cutting off and plunging under average machining conditions in soft materials, small diameters and pipes with low feed rates in the cast and NF metal material groups in single part and series production.

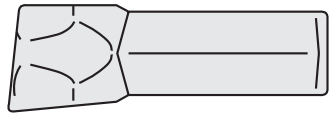
Execution:

- **Ident. No. 101, 106, 111, 116, 121, 126, 131, 136, 141, 146:** precision-sintered cutter insert, J geometry with positive cutting edge
- **Ident. No. 102–103, 107–108, 112–113, 117–118, 122–123, 127–128, 132–133, 138, 142–143, 147:** Precision-sintered insert with J geometry and a positive cutting edge

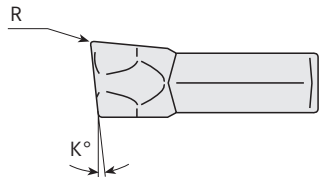
Advantage:

- **Ident. No. 101, 106, 111, 116, 121, 126, 131, 136, 141, 146:** extremely positive cutter provides a soft cut and reduces cutting forces
- **Ident. No. 102–103, 107–108, 112–113, 117–118, 122–123, 127–128, 132–133, 138, 142–143, 147:** Extremely positive cutter for a soft cut and reduced cutting forces

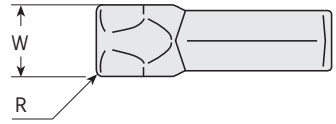




Left



Right



Neutral

Surface					Uncoated		Coated		Coated	
Carbide type					HW3410		HC3630		HC3635	
Material to be processed					Non-ferrous metal | Cast metal		Steel		Steel | Cast metal	
Vc in steel ●							40-150 m/min		45-180 m/min	
f in steel ●							0.05-0.40 mm/U		0.05-0.40 mm/U	
Vc in stainless steel ●									60-160 m/min	
f in stainless steel ●									0.05-0.20 mm/U	
Vc in non-ferrous metals ●					100-600 m/min					
f in non-ferrous metals ●					0.05-0.20 mm/U					
Vc in cast iron ●					80-120 m/min				80-140 m/min	
f in cast iron ●					0.05-0.15 mm/U				0.02-0.15 mm/U	
ISO name	W (mm)	Radius (mm)	K° (Degree)	Tool design	17666... Ident. No.		17666... Ident. No.		17666... Ident. No.	
AIMJ 2	2.2	0.2	0	Neutral	101	●	102	●	103	●
AIMJ 2 6L	2.2	0.2	6	Left	106	●	107	●	108	●
AIMJ 2 6R	2.2	0.2	6	Right	111	●	112	●	113	●
AIMJ 3	3.1	0.2	0	Neutral	116	●	117	●	118	●
AIMJ 3 6L	3.1	0.2	6	Left	121	●	122	●	123	●
AIMJ 3 6R	3.1	0.2	6	Right	126	●	127	●	128	●
AIMJ 4	4.1	0.25	0	Neutral	131	●	132	●	133	●
AIMJ 4 6L	4.1	0.25	6	Left	136	○	-	-	138	●
AIMJ 4 6R	4.1	0.25	6	Right	141	●	142	●	143	●
AIMJ 5	5.1	0.3	0	Neutral	146	●	147	●	-	-

Prod. Gr. 181

ATORN® Recessing system AIPV HC3635 cutting inserts

For profile lathing, precision recessing and fine lathing for AH101, AHR/L211, AHR/L 619

Application:

For profile machining and fine lathe work as well as precision recessing in the material groups of steel, stainless steel and cast material for individual part and series production.

Execution:

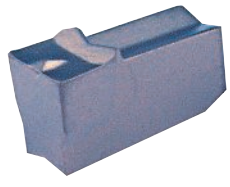
- precision-sintered cutting insert with V geometry, with multi-directional chip breaker, +-0.02 width tolerance, cutting inserts with E=rounded version, cutting inserts without version E=circlip

Advantage:

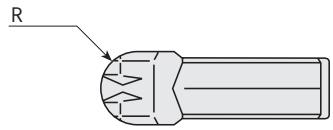
- innovative cutting geometry ensures optimum chip breaking during profile machining



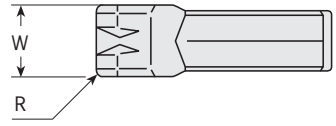
Ident. No. 202–237



Ident. No. 302–332



Ident. No. 202–237
R = 0.5 x W for cutting inserts with full radius



Ident. No. 302–332

				Surface	Coated
				Carbide type	HC3635
				Material to be processed	Steel | Stainless steel | Cast metal
				Vc in steel ●	30-160 m/min
				f in steel ●	0.05-0.25 mm/U
				Vc in stainless steel ●	40-140 m/min
				f in stainless steel ●	0.05-0.20 mm/U
				Vc in cast iron ●	60-120 m/min
				f in cast iron ●	0.02-0.10 mm/U

ISO name	W (mm)	Radius (mm)	Tolerance of plunge depth	17666... Ident. No.	
AIPV 3.00E 0.40	3	0.40	± 0.02 mm	202	●
AIPV 4.00E 0.40	4	0.4	± 0.02 mm	207	●
AIPV 6.00E 0.40	6	0.40	± 0.02 mm	217	●
AIPV 3.00E 1.50	3	1.5	± 0.02 mm	222	●
AIPV 4.00E 2.00	4	2	± 0.02 mm	227	●
AIPV 6.00E 3.00	6	3	± 0.02 mm	237	●
AIPV 1,85 0,10	1.85	0.1	± 0.02 mm	302	●
AIPV 2,0 0,20	2	0.2	± 0.02 mm	307	●
AIPV 2,15 0,15	2.15	0.15	± 0.02 mm	312	●
AIPV 2,65 0,15	2.65	0.15	± 0.02 mm	317	●
AIPV 3,0 0,20	3	0.2	± 0.02 mm	322	●
AIPV 4,0 0,20	4	0.2	± 0.02 mm	327	●
AIPV 4,15 0,15	4.15	0.15	± 0.02 mm	332	●

Prod. Gr. 181

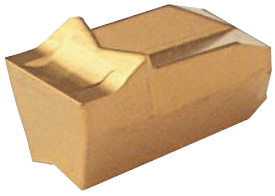
ATORN® Recessing system AIMF HC3630 cutting inserts

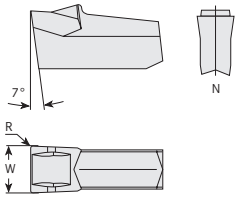
For axial and end recessing for AH106

Application:
For axial and face recessing in the material group of steel, stainless steel and cast iron for individual part and series production.

Execution:
- precision-sintered cutting insert, F geometry with positive cutting edge

Advantage:
- innovative cutting geometry and chip breaker for optimum chip breaking when recessing axially





						Surface	Coated
						Carbide type	HC3630
						Material to be processed	Steel
						Vc in steel ●	30-145 m/min
						f in steel ●	0.05-0.15 mm/U

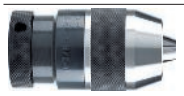
ISO name	W (mm)	Radius (mm)	Tolerance of plunge depth	Tool design	Min. Ø (mm)	17666... Ident. No.	
AIMF 2N	2.1	0.2	± 0.1 mm	Neutral	35	410	●
AIMF 3N	3	0.3	± 0.1 mm	Neutral	54	420	●
AIMF 4N	4	0.25	± 0.1 mm	Neutral	35	430	●
AIMF 5N	5	0.25	± 0.1 mm	Neutral	40	440	●
AIMF 6N	6	0.25	± 0.1 mm	Neutral	44	450	●

Prod. Gr. 181



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Tool clamp

	Technical introduction – tool chucks
	Tool chucks DIN 69893 HSK 63/100
	Tool chucks ISO 7388-1 SK 40/50
	Tool chucks ISO 7388-2 BT40/50
	Tool extension with straight shank
	Pull stud/coolant transfer pipe
	Reducing sleeve and clamping sleeves
	Clamping nuts and tool
	Tapping chucks and accessories
	Thread cutting machine
	Drill chucks

Tool clamp

	Tool mounting device
	Setting and measuring instruments
	Technical introduction – tool presetters
	Overview page - tool presetters
	Tool presetters and accessories

tool chucks in accordance with ISO 7388-1
old standard DIN 69871-1 was replaced by ISO 7388-1 (dimensions are identical)

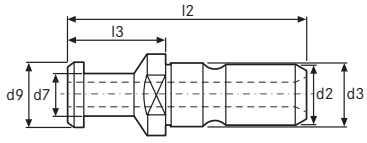
for the tool chucks in accordance with new type ISO 7388-1

type A without through-bore

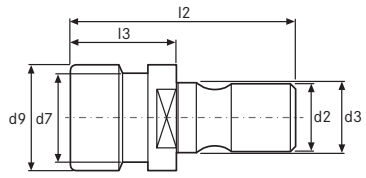
type AD with through-bore (for central coolant feed)

type AF with side coolant supply feed across the tool collar **(old type designation was type B)**

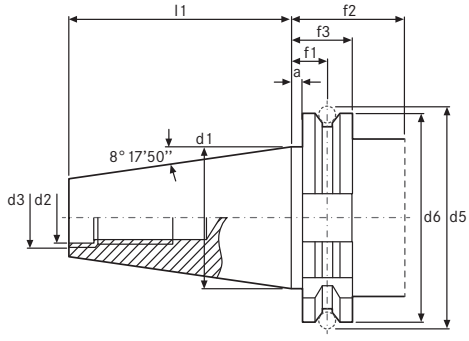
type AD/AF with through-bore and with side coolant feed through the tool collar. **(old type specification was AD/B)**



pull stud 69872



pull stud ISO 7388/B



ISO 7388-1

pull stud 69872 and ISO 7388/B

design	steep taper size	d_2	d_3 g6	d_7	d_9	l_2	l_3
ISO 7388/B	40	M16	17	12,95	18,95	44,5	16,4
	50	M24	25	19,6	29,1	65,5	25,55
DIN 69872	30	M12	13	9	13	44	24
	40	M16	17	14	19	54	26
	50	M24	25	21	28	74	34

steep taper ISO 7388-1

steep taper size	$a^{\pm 0.1}$	b^{H12}	d_1	d_2	d_3^{H7}	$d_5^{\pm 0.05}$	$d_{6\text{-}0.1}$	d_8 max.	$f_1^{\pm 0.1}$	f_2 min.	$f_3^{-0.1}$	$l_1^{-0.3}$	$l_5^{-0.3}$	$l_6^{-0.4}$	$l_7^{-0.4}$
30	3,2	16,1	31,75	M12	13	59,3	50	45	11,1	35	19,1	47,8	15	16,4	19
40	3,2	16,1	44,45	M16	17	72,3	63,55	50	11,1	35	19,1	68,4	18,5	22,8	25
50	3,2	25,7	69,85	M24	25	107,35	97,5	80	11,1	35	19,1	101,75	30	35,5	37,7

all dimensions in mm

tool chucks in accordance with ISO 7388-2
old standard JIS B 6339 MAS BT was replaced by ISO 7388-2

for the tool chucks in old type JIS B 6339 MAS BT NORM

type A without through-bore

type AD with through-bore (for central coolant feed)

type B with side coolant feed across the tool collar

type AD/B with through-bore and with side coolant feed through the tool collar

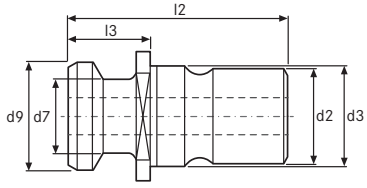
for the tool chucks in accordance with new type ISO 7388-2

type J without through-bore

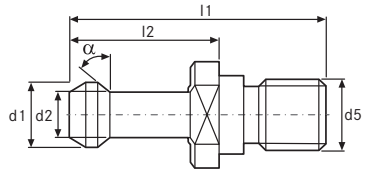
type JD with through-bore (for central coolant feed)

type JF with side coolant feed across the tool collar

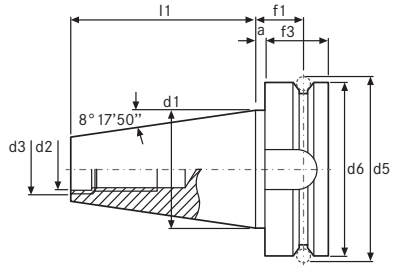
type JD/JF with through-bore and with side coolant feed through the tool collar



ISO 7388/B



pull stud compliant with JIS standard MAS BT 30° and 45°



ISO 7388-2

pull stud 7388/B

design	steep taper no.	d_2	d_3 g6	d_7	d_9	l_2	l_3
ISO 7388/B	40	M16	17	12,95	18,95	44,5	16,4
	50	M24	25	19,6	29,1	65,5	25,55

pull stud compliant with JIS standard

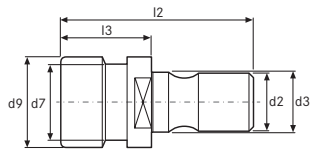
	d_5	d_1	d_2	l_1	l_2	angle α
MAS BT I	M16	15	10	60	35	45°
MAS BT II	M16	15	10	60	35	30°
MAS BT I	M24	23	17	85	45	45°
MAS BT II	M24	23	17	85	45	30°

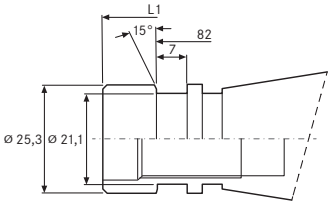
steep taper ISO 7388-2

steep taper size	a ±0.1	b^{H12}	d_1	d_2	$d_3{}^{H7}$	d_5 -0.1	d_6 -0.05	f_1 ±0.1	f_3	l_1 ±0.2	l_6 -0.25
40	2	16,1	44,45	M16	17	69,68	63	16,6	25	65,4	22,5
50	3	25,7	69,85	M24	25	110	100	23,2	35	101,8	35,3

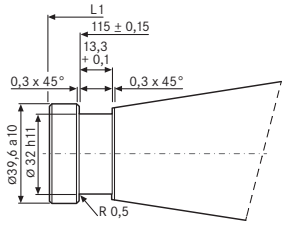
standard for steep tapers in accordance with DIN 2080 and corresponding pull studs

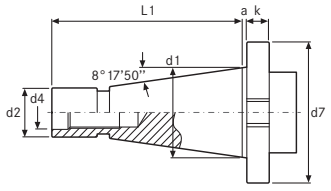
pull stud Ott-ring groove
on spindle nose DIN 2079
only in conjunction with stones type C





tool chuck compliant with DIN 2080





Ott-ring groove pull stud

design	steep taper size	d_2	d_3 g6	d_7	d_9	l_2	l_3
Ott-ring groove	40	M16	17	21,1	25	53,1	25

tool chuck DIN 2080

steep taper size	$a^{\pm 0.2}$	b^{H12}	d_1	d_2 a10	$d_7{}^{-0.1}$	d_4	$k^{\pm 0.15}$	l_1	l_7 max.
30	1,6	16,1	31,75	17,4	50	M12	8	68,4	16,2
40	1,6	16,1	44,45	25,3	63	M16	10	93,4	22,5
50	3,2	25,7	69,85	39,6	97,5	M24	12	126,8	35,3

all dimensions in mm

ATORN precision collet chucks
maximum concentricity for optimum surface quality and maximum tool life

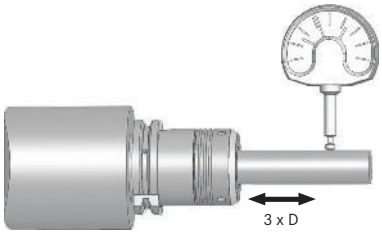


fig. 1

total concentricity on ATORN precision collet chuck 3 µm (fig. 1)
- high-gloss polished surface
- precision collet chuck without clamp bridge
- collet chuck sits completely in the inner taper of the collet chuck (tolerance in µ range) **(Figure 2)**
- collet chuck and clamping nut with a 30° trapezoidal thread ① and two cylindrical guides form a single unit ②.

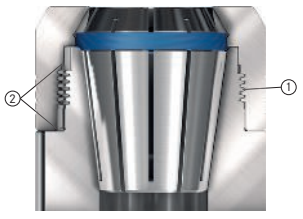
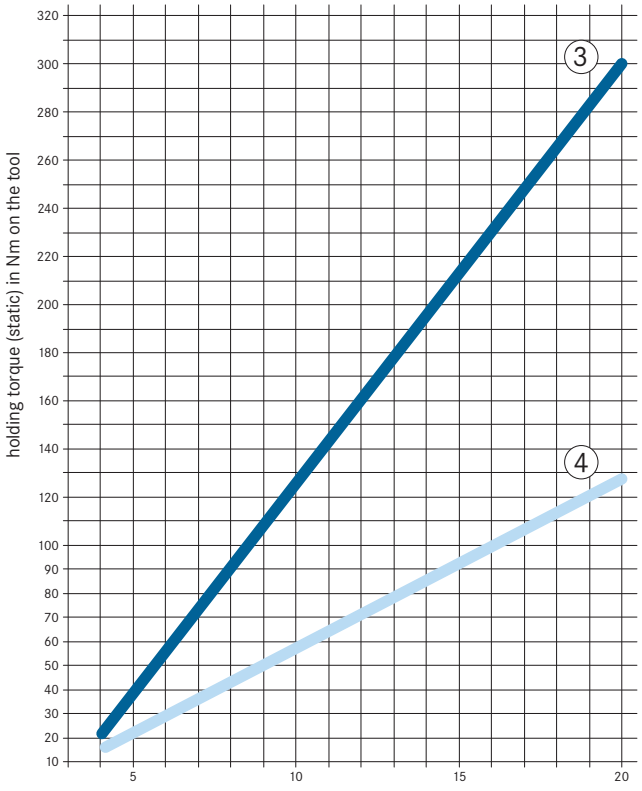


fig. 2
with Fahrrion 2 µm HP collet chuck

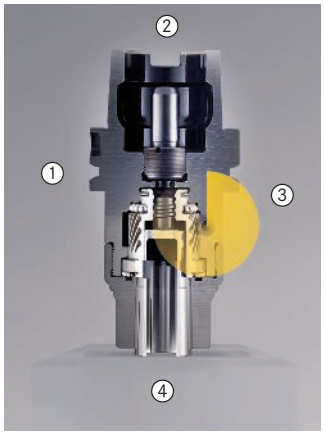
all of these innovations have led to the following advantages compared with other systems:
- more uniform engagement of all cutting edges
- longer tool life
- optimised surface
- fewer chatter marks
- minimised vibration
- higher cutting data
- system concentricity ≤ 3 µm



③ ATORN precision collet chuck 160 Nm Ø 12 mm
④ standard collet chuck ER32 69 Nm Ø 12 mm



ALBRECHT precision chuck APC



successes have reasons

1. the only chuck in the world with a 1:16 worm gear.
patent 1206990. this is the only way to ensure 100 % retention force on the milling cutter.

2. the highest rigidity is ensured by this design and base. measurement portfolio of Sophia University, Tokyo.

3. worm gear unit with 3 tonnes of traction and collet chuck with 1.25° flat taper angle guide the miller perfectly through trochoidal, dry and hard machining up to 110 °C.

4. optimal damping.
the clamping sleeve/taper connection dampens virtually all vibrations.

ATORN hydro expansion chucks — advantages

our hydro expansion chucks or HPH (High Performance Holders) with axial and radial length adjustment are used on woodworking and metalworking machines with rotating tools. depending on the type of use, various versions are available, e. g.:

- **automatic tool change chucks in acc. with:** ISO 7388-1 (DIN 69871); DIN 69893-A, DIN 69893-F, DIN 69893-E and ISO 7388-2 (JIS B6339)

Advantages of the ATORN hydro expansion clamping technology:

- Tool change in the shortest possible time
- High concentricity
- Vibration-damping tool clamping
- Increased tool service life
- Reduction of micro abrasions on the tool cutting edge
- Improvement in surface quality
- Reducing sleeves allow flexible use
- Low maintenance requirements through closed clamping system
- Easy operation
- High torque transmission
- Design corresponds to DIN 69882-7
- High positioning accuracy and repeatability
- Tool clamping with excellent concentricity (maximum 3 µm)
- Continual further development
- Products certified according to DIN EN ISO 9001:2008, manufactured in Germany

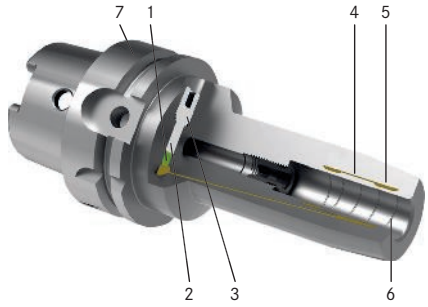


ATORN 3 degree hydro expansion chuck ultra-slim 3D-printed design

ATORN hydro expansion clamping technology — elements and functional principle

Elements of the hydro expansion clamping technology:

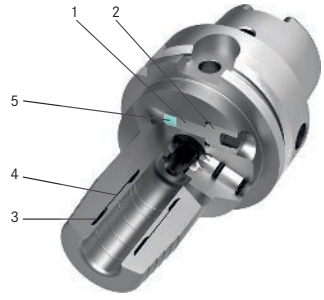
① Sealing element; leakage at the clamping bore is prevented by the sealing lip.
② Clamping piston; presses the hydraulic medium into the chamber system.
③ Clamping screw; tightening to operate the clamping piston can be done without a torque wrench.
④ Expansion sleeve; clamps the tool shaft centrally with even pressure.
⑤ Chamber system; is formed through the connection between expansion sleeve and basic body. Has a dampening effect on the tool through the hydraulic medium, which therefore reduces wear.
⑥ Groove; residual oil, grease or lubricant is forced into the groove by the high clamping pressure. The clamping surfaces remain largely dry, which ensures proper transfer of torque.
⑦ Basic body; ATORN hydro expansion chucks are available for all common machine interfaces (HSK-A, HSK-C, HSK-E, HSK-F, SK, BT and flange module).



Functional principle

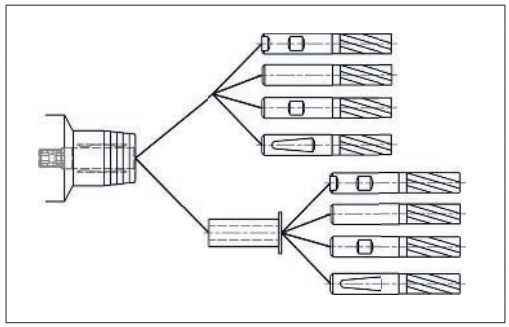
When clamping with hydro expansion technology, an even pressure is built up within a closed chamber system by means of a clamping screw and clamping piston. The integrated expansion sleeve transfers this pressure to the tool.

① The clamping screw is screwed in with a hexagon key until it stops.
② The clamping piston pushes the hydraulic medium into the
③ expansion chamber and causes an increase in pressure.
④ The thin-walled expansion sleeve curves evenly against the tool shaft. In this clamping process, the tool shaft is first centred and then clamped firmly over its full surface.
⑤ The sealing element ensures a perfect seal and a long service life.



ATORN hydro expansion chuck – technical data

technical data:
- material 1600-1800 N/mm² tensile strength
- hardness 52 + 2HRc
- balanced holder
- laser marked
- max. speed 40,000 rpm (observing limit speed, interface, precision balancing recommended!)
- operating temperature 20-50°C; higher temperatures on request, do not use above 80°C
- maximum coolant pressure 80 bar
- adjustment path 10 mm
- clamp shafts (tolerance h6) with and without reducing sleeves:
  - DIN 1835 Form A, B, C, D
  - DIN 6535 Form H, HB, HE



permissible transferable torques with direct clamping

clamping diameter in mm	6	8	10	12	14	16	18	20	25	32
minimum clamping depth in mm	27	27	31	36	36	39	39	41	47	51
transferable torque in Nm (min. dimension h6)	20	30	47	80	100	160	200	330	400	650
maximum transferable torque in Nm (max. dimension h6)	30	45	85	140	160	230	270	400	470	730

reliably transferable torques for ATORN hydraulic expansion chuck, clamping diameter 32 mm with reducing sleeve

clamping diameter in mm	6	8	10	12	14	16	18	20	25
transferable torque in Nm (min. dimension h6)	30	45	60	120	120	180	220	250	360
maximum transferable torque in Nm (max. dimension h6)	45	65	110	170	170	230	300	320	440

reliably transferable torques for ATORN hydraulic expansion chuck, clamping diameter 20 mm with reducing sleeve

clamping diameter in mm	3	4	5	6	8	10	12	14	16
transferable torque in Nm (min. dimension h6)	6	9	16	30	55	90	120	135	190
maximum transferable torque in Nm (max. dimension h6)	10	12	22	40	75	120	150	170	260

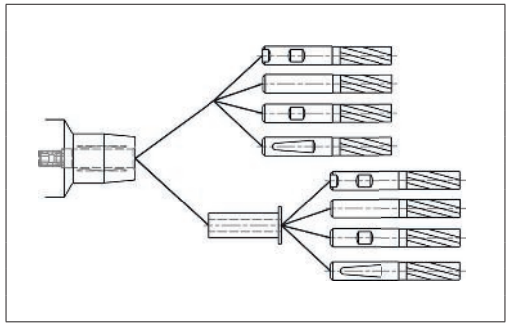
reliably transferable torques for ATORN hydraulic expansion chuck, clamping diameter 12 mm with reducing sleeve

clamping diameter in mm	3	4	5	6	8
transferable torque in Nm (min. dimension h6)	3	4	7	12	18
maximum transferable torque in Nm (max. dimension h6)	4	8	12	20	26



ATORN HPH – high-performance hydro-expansion chuck – technical data

technical data:
- material 1600-1800 N/mm² tensile strength
- hardness 52 + 2HRc
- balanced holder
- laser marking
- max. speed 40,000 rpm (observing limit speed, interface, precision balancing recommended!)
- operating temperature 20-120°C
- maximum coolant pressure 80 bar
- adjustment path 10 mm
- clamp shafts (tolerance h6) with and without reducing sleeves:
  - DIN 1835 Form A, B, C, D
  - DIN 6535 Form H, HB, HE



permissible transferable torque with direct clamping HPH (high-performance holder) – high-performance hydro-expansion chuck holder

clamping diameter in mm	6	8	10	12	14	16	18	20	25	32
minimum clamping depth in mm	27	27	31	36	36	39	39	41	47	51
transferable torque in Nm (min. dimension h6)	30	50	100	150	210	280	360	550	650	800
maximum transferable torque in Nm (max. dimension h6)	40	65	135	190	280	380	450	650	750	890

permissible transferable torque with direct clamping HPH 3° Multi

clamping diameter in mm	3	4	5	6	8	10	12	14	16	18	20
minimum clamping depth in mm	12	16	20	27	27	31	36	36	39	39	41
transferable torque in Nm (min. dimension h6)	3	6	10	20	35	65	110	120	160	200	260
maximum transferable torque in Nm (max. dimension h6)	6	10	14	35	55	90	150	160	200	260	340

ATORN shrink technology — benefits

the shrink technology uses heat-induced expansion to clamp tools. an induction coil heats the shrink-fit chuck. the chuck expands and the cold tool shaft can be inserted. the shrink-fit chuck is cooled down again, tightens and forms a friction connection with the tool due to the oversize at the tool shaft.

advantages:

- simple tool holder design
- high concentricity in tool clamping
- reliable force transmission
- slim construction
- profitability
- high torque transmission,
- long service life and temperature resistance through the use of high-strength heat-resistant steel
- distortion-free through optimum heat treatment
- optimally balanced
- comes with impact thread drill by default above clamping diameter of 6 mm
- design corresponds to DIN 69882-8
- high positioning accuracy and repeatability
- guaranteed maximum concentricity – a maximum of 3 µm
- laser marking for secure product traceability
- products certified according to DIN EN ISO 9001:2008 - made in Germany
- flexible shrink system through the use of ATORN shrink-fit extensions
- stop screw adjustable on both sides



ATORN shrink-fit chuck — functional principle

ATORN shrink-fit chucks are used on woodworking and metalworking machines with rotating tools. Shrink-fit chucks use heat-induced expansion to clamp tools. The application areas for these chucks range from a wide variety of milling tasks to heavy-duty machining, woodwork and drilling. ATORN shrink-fit chucks are produced with an internal coolant feed as standard.

Selected product groups in the range also have flange cooling. Custom designs for the use of lateral coolant bores are always possible on request.

for automatic tool changing, ATORN shrink-fit chucks are available in the following versions: ISO 7388-1 (DIN 69871), DIN 69893-A, DIN 69893-E, DIN 69893-F and ISO 7388-2 (JIS B6339).

functional principle:

① **warm the chuck:** the clamping point of the chuck is warmed precisely using state-of-the-art induction technology. An induction coil generates rapidly changing eddy currents which work directly on the shrink-fit chuck, and heat precisely the point on which the tool shaft sits. The bore diameter widens.

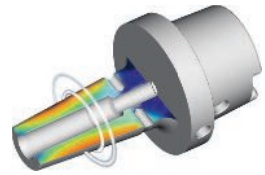
② **insert the tool shaft:** the cold tool shaft is put into the heated shrink-fit chuck.

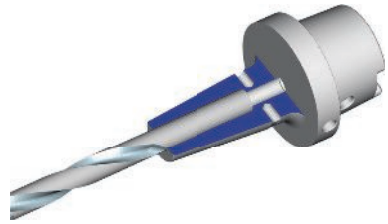
③ **cooling:** the shrink-fit chuck is cooled, the clamping diameter returns to its initial level and clamps the tool shaft. a powerful device with water-cooled heat sinks allows rapid cooling within 30 seconds. this means neither the taper nor the data chips warm up. extensions or non-standard shrink-fit chucks can be cooled using adapters in the heat sinks.

the result:

inductive heating means the tool change can be performed in seconds. shrink-fit chuck and tool shaft form a friction-locked connection. cemented carbide and even HSS tools can be clamped. the tool fits precisely in the tool chuck with the highest level of clamping force.



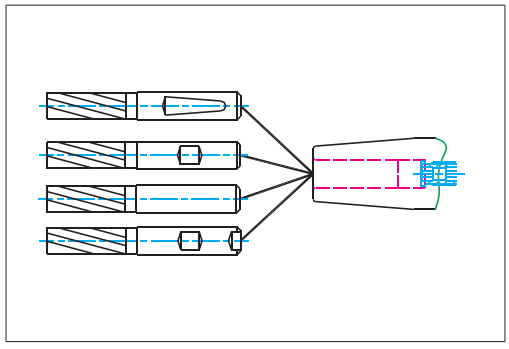




ATORN shrink-fit chuck – technical data

technical data:

- material 1600-1800 N/mm² tensile strength
- hardness 52 + 2HRc
- balanced holder by default
- laser marking
- max. speed 40,000 rpm (observing limit speed, interface, precision balancing recommended!)
- shrink temperature 100-420°C
- maximum shrink temperature 500°C
- maximum coolant pressure 80 bar
- adjustment travel 10 mm, can be adjusted on both sides
- can be clamped: cylinder shafts tolerance outside diameter h6
- shrinking in and out of cemented carbide and HSS tools when using the corresponding shrinking devices



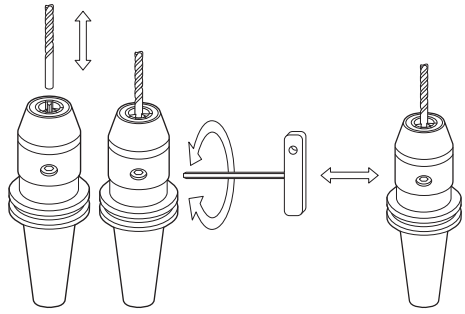


permissible transferable torques with direct voltage

clamping diameter in mm	3	4	5	6	8	10	12	14	16	18	20	25	32
minimum clamping depth in mm	12	16	20	26	26	31	37	37	40	40	42	48	52
transferable torque in Nm	4	11	17	24	45	82	145	190	200	290	450	530	700

ATORN drill chucks — components and functional principle

① Open the clamping jaws anti-clockwise to insert the respective cutter.
② The cutter must be pushed in all the way to the stop, so that the tool shaft is against the entire length of the clamping jaws. (Caution: Do not clamp conical shafts, as there is a risk of accident!)
③ Turn the key clockwise to the specified tightening torque, to properly clamp the tool. Extensions or tightening aids must not be used, as too much tightening torque can break the bevel gear drive. Here, the pinion serves as a predetermined breaking point to avoid more significant damage to the drill chuck.
④ Once it has been verified that the cutter is clamped correctly and centred, the drill chuck is ready for use.



Secure clamping:

All ATORN drill chucks are clamped with a hexagonal cross handle key via a bevel gear drive at the side. The key is turned clockwise to clamp the drill chuck. The drill chuck is opened in the anti-clockwise direction (see markings on the pinion bore). Step-by-step instructions can be found in the respective operating instructions.



Care and maintenance:

ATORN drill chucks are maintenance free. After use, the drill chucks should be wiped with a clean cloth. Before storing, the drill chucks should be oiled to prevent corrosion.

Caution: Do not use compressed air to clean drill chucks as fine chips can enter the clamping mechanism. The drill chucks must not be cleaned with solvents or cleaners containing solvents, as these can cause corrosion.

ATORN drill chuck and micro universal chuck – technical data





ATORN standard	drill chuck
clamping range	0.5-16 mm
maximum concentricity deviation	< 0.02 mm (*)
torque in relation to concentricity deviation	15 Nm
transferable torque	45 Nm (**)
maximum permissible tightening torque	20 Nm
transferable torque at maximum permissible tightening torque	90 Nm (**)
maximum permissible speed	35,000 rpm (***)

(*) check of concentricity deviation as per test protocol “Precision”

(**) all CNC drill chucks are clamped by means of a hexagonal T-key on the side via a bevel gear. for the use of the drill chuck, a torque of 8 Nm or 15 Nm is sufficient on the hexagonal T-key. the higher holding torques achievable with the CNC drill chucks are additional security and therefore not necessary for normal use.

(***) the CNC drill chucks are “unbalanced” suitable for use up to 7000 rpm . for applications at speeds above 7000 rpm (up to max. 35,000 rpm), such as in aluminium or wood processing, the drill chucks must also be balanced as per the balancing classes, taking into account the speed and balancing quality.

MICRO 03	MICRO 06
0.2-3.4 mm	0.2-6.4 mm
< 0.005 mm (*)	< 0.005 mm (*)
1.5 Nm	3 Nm
4.5 Nm (**)	9 Nm (**)
2 Nm	4 Nm
7 Nm (**)	12 Nm (**)
60,000 rpm (***)	60,000 rpm (***)

(*) check of concentricity deviation as per the test protocol “MICRO universal chuck”.

(**) all MICRO universal chucks are clamped by means of a hexagonal T-key on the side via a bevel gear. for the use of MICRO universal chuck, a tightening torque of 1.5 Nm (MICRO 03) or 3 Nm (MICRO 06) is sufficient on the hexagonal T-key. the higher holding torques achievable with the MICRO universal chucks are additional security and are not necessary for normal use.

(***) the MICRO universal chucks are “unbalanced” suitable for use up to 18,000 rpm . for applications at speeds of over 18,000 rpm to 60,000 rpm (such as in aluminium or wood processing), the MICRO universal chucks must also be balanced as per the balancing classes, taking into account the speed and balancing quality.

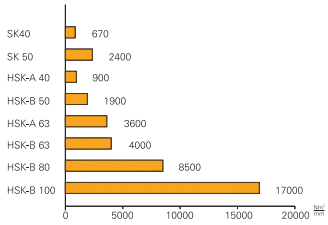
Hollow shank taper tools
For automatic and manual tool exchange

tool chuck HSK-32/40/50/63/80/100 types A to F

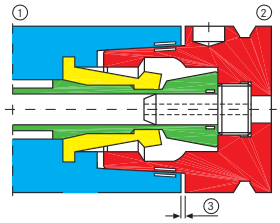
To prepare a quotation, we need your spindle size and possible tool chucks.

Advantages vis-à-vis steep taper:

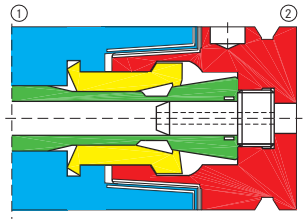
- **High rigidity:** considerably greater bending strength is achieved with the same tool sizes as a result of the support at the collar (flange).
- **Excellent change precision:** the flange attachment facilitates axial positioning precision in the µm range. The form-fit, tight taper tolerance prevents any radial run-out.
- **Good torque transmission:** the hollow shank taper is held in the receiving spindle so that torque transmission is possible as a result of friction contact. 2 carrier blocks also engage in the slots at the shank end.
- **Ideal for high rotation speeds:** at high rotation speeds the spindle expands due to centrifugal force. This could cause the steep taper to slip in the spindle and jam. This is prevented by the flange. In addition, the clamping elements are pushed outwards by centrifugal force which increases the clamping force.
- Integrated tool system: the hollow shank taper was designed for both stationary and rotating tool chucks. This enables the tool holders to be used on milling machines and lathes and as modular tools.



Radial nominal rigidity of various machine tool interfaces



Functional principle of the HSK interface
① Spindle, ② Tool, ③ Free space



Connecting position with locating faces
① Spindle, ② Tool



Clamping situation with locating faces

ATORN® CNC precision short drill chuck (DIN 69893-1)
With worm gear mechanism

HSK 63 | Form A | IK | R/L | G 40 7000 rpm | DIN 69893

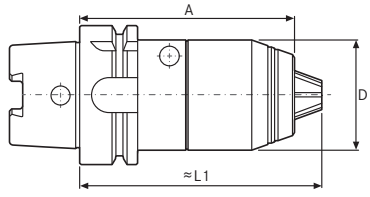
Application:
For use on machining centres and CNC milling machines with tool change systems. For drilling, reaming, countersinking and also light milling and finishing tasks.

Execution:
- With worm gear
- Precision chuck with high concentricity, concentricity tolerance 0.03 mm

Advantage:
- Max. 12 Nm torque, corresponds to 70 Nm holding torque

Notes:
Higher rotation speeds on request.





Tool holding device	Min./max. clamping width	D (mm)	A (mm)	L1 (mm)	21329... Ident. No.	
HSK 63	1-16 mm	50	98	110	120	●

Prod. Gr. 208
Compatible coolant transfer pipe no. 23715 050

ATORN® CNC precision short drill chuck (DIN 69893-1)

With spur gear mechanism

HSK 63 | Form A | IK | R/L | G 6,3 25000 rpm | DIN 69893

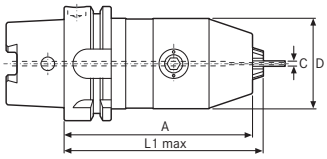
Application:
For use on machining centres and CNC milling machines with tool change. For drilling, reaming, countersinking and also light milling and smoothing tasks.

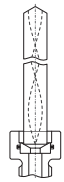
Execution:
- Shank in accordance with DIN 69893, HST type A
- Integrated spur gear ensures high retaining torque
- glass bead blasted

Advantage:
- Wear parts hardened and polished for long service life
- Remains securely clamped even with sudden spindle stop

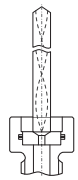
Delivery:
Including hexagon key







Sealing washer ATORN 16 (Ø 4.2 mm)



Sealing washer ATORN 16 (Ø 2.05 mm)

Tool holding device	Min./max. clamping width	D (mm)	A (mm)	L1 (mm)	21329... Ident. No.	
HSK 63	0.5-16 mm	57	109	113	542	●

Prod. Gr. 208
Compatible coolant transfer pipe no. 23715 050

ATORN® Precision collet (DIN 69893-1)

HSK 63 | Form A | IK | G 2,5 25000 rpm | DIN 69893

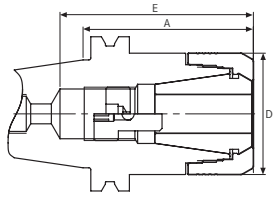
Application:
For clamping tools with straight shanks without loss of concentricity or clamping force up to shank tolerance h10, for economic machining of individual and series parts with extremely high-precision machining results. Ideal for HPC and HSC metal cutting.

Execution:
- 30° trapezoidal thread with polished, extra-long double guide with special easy glide coating for lower friction
- Clamping forces are evenly distributed across the entire cylindrical shell surface and perfect surfaces are achieved through the optimally absorbed radial forces
- Precise centring when tightening the clamping nut

Advantage:
- Resistant to fluctuations in temperature and fully suitable for drying processes and hard milling up to 200 °C
- The strengthening of the chuck body over the diameter of the clamping nut creates enormous stability with the optimum interference contour
- Extremely low system concentricity of < 3 µm with 2 µm collets from Fahrion, HP/HPD 23323, unsealed and sealed collets up to 80 bar for IC (without sealing disc)
- Completely surrounded in the chuck cone for optimum stability and even distribution of the clamping forces
- Retention forces are doubled compared to conventional collets

Delivery:
Tool chuck including Clamping nut
Please order spanner separately. Suitable torque wrench attachments 23360 960-966
Torque wrench recommended, suitable collet chucks type ER no. 23323 617-658





Tool holding device	HSK 63	HSK 63	HSK 63	HSK 63	HSK 63	HSK 63	HSK 63	HSK 63	HSK 63	HSK 63
Size	HPE 16	HPE 16	HPE 16	HPE 16	HPE 25	HPE 25	HPE 25	HPE 32	HPE 32	HPE 32
Collet type	ER 16 (426 E)	ER 16 (426 E)	ER 16 (426 E)	ER 16 (426 E)	ER 25 (430 E)	ER 25 (430 E)	ER 25 (430 E)	ER 32 (470 E)	ER 32 (470 E)	ER 32 (470 E)
Min./max. clamping range	1-10 mm	1-10 mm	1-10 mm	1-10 mm	2-16 mm	2-16 mm	2-16 mm	2-20 mm	2-20 mm	2-20 mm
A (mm)	55	100	160	200	100	160	200	70	100	160
D (mm)	30	30	30	30	40	40	40	50	50	50
E (mm)	32	71	106	136	70	128	148	46	114	129
Max. tightening torque (Nm)	55	55	55	55	85	85	85	140	140	140
23761... Ident. No.	001	002	003	004	005	006	007	008	009	010
	●	●	○	○	●	●	○	●	●	○

Prod. Gr. 263
Compatible coolant transfer pipe no. 23715 050 page 767
Compatible ER-type collet chucks no. 23323 617-658 and no. 23322 501-636

ATORN® HPH high-performance hydraulic expansion chuck (DIN 69893-1)

Short, heavy-duty design

HSK 63 | HSK 100 | Form A | IK | G 2,5 25000 rpm | ≤0,003 | DIN 69893

Application:
For high precision, centric clamping of milling, drilling and reaming tools – particularly for milling and heavy-duty machining during rough machining.

Execution:
- axial longitudinal adjustment
- reducing sleeves for flexible applications
- coolant pressure up to 80 bar
- Heat-resistant up to 100°C

Advantage:
- sturdy version ideal for HPC+HSC metal cutting
- damping properties to increase duration of tools and service life of machine spindle
- Vibration-damping effect reduces micro-cracks and improves the workpiece surface
- All common shanks can be clamped (Ø tolerance h6)
- Very high torque transfer (Ø 20 = 650 Nm/Ø 32 = 890 Nm)

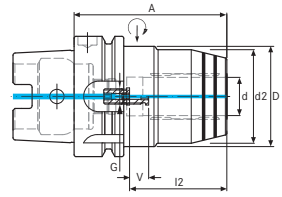
Delivery:
tool chuck with matching hexagon key



Ident. No. 012



Ident. No. 020–032



Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	l2 (mm)	G	max. V (mm)	23738... Ident. No.	
HSK 63	12	80	42	52.5	46	M8 x 1	10	012	●
HSK 63	20	80	49	52.5	51	M8 x 1	10	020	●
HSK 100	32	100	70	75	61	M8 x 1	10	032	○

Prod. Gr. 263
Compatible coolant transfer pipe no. 23715 050-070

ATORN® HYDRO expansion chucks (DIN 69893-1)

Short, heavy-duty design

HSK 63 | Form A | IK | G 2,5 25000 rpm | ≤0,003 | DIN 69893

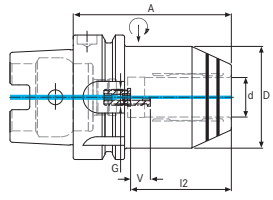
Application:
For high precision, centric clamping of milling, drilling and reaming tools – particularly for milling and heavy-duty machining during rough machining.

Execution:
- axial longitudinal adjustment
- reducing sleeves for flexible applications
- coolant pressure up to 80 bar

Advantage:
- Damping properties to increase duration of tools and service life of machine spindle
- Very high torque transfer (Ø 20 = 400 Nm/Ø 32 = 730 Nm)
- Vibration-damping effect reduces micro-cracks and improves workpiece surface
- All common shanks can be clamped (Ø tolerance h6)

Delivery:
tool chuck with matching hexagon key





Tool holding device	d (mm)	A (mm)	D (mm)	l2 (mm)	G	max. V (mm)	23738... Ident. No.	
HSK 63	20	80	52.5	51	M8 x 1	10	220	●

Prod. Gr. 263
Compatible coolant transfer pipe no. 23715 050-070

ATORN® Hydro-expansion chuck type A (DIN 69893-1)

Short slimline design

HSK 63 | HSK 100 | Form A | IK | ≤0,003 | DIN 69893

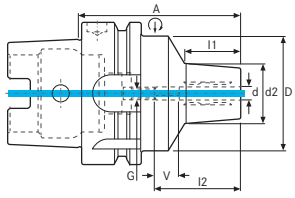
Application:
For clamping drill bits and milling tools with straight shank.

Execution:
- High clamping forces
- Axial longitudinal adjustment
- Highly precise centric clamping
- Outstanding absorption
- Standard tool changes as with expansion chucks without requiring additional devices
- Various applications when used with reducer bushings
- With Balluff chip hole
- Can be clamped with all common shank types

Advantage:
- High degree of torque transmission
- Good surface qualities
- Suitable for high rotation speeds
- Excellent vibration-absorbing properties
- Longer service life of cutting tools

Delivery:
Tool holder with matching hex key





Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	l1 (mm)	l2 (mm)	G	max. V (mm)	23733... Ident. No.	
HSK 63	6	70	26	50	24	37	M5	10	006	●
HSK 63	8	70	28	50	24	37	M6	10	008	●
HSK 63	10	80	30	50	25	41	M8 x 1	10	010	●
HSK 63	12	85	32	50	35	46	M10 x 1	10	012	●
HSK 63	14	85	34	50	40	46	M10 x 1	10	014	●
HSK 63	16	90	38	50	40	49	M12 x 1	10	016	●
HSK 63	18	90	40	50	46	49	M12 x 1	10	018	●
HSK 63	20	90	42	50	47	51	M16 x 1	10	020	●
HSK 63	25	120	57	53	63	57	M16 x 1	10	025	●
HSK 100	6	75	-	50	-	37	M5	10	150	○
HSK 100	8	75	-	50	-	37	M6	10	151	○
HSK 100	10	90	-	50	-	41	M8 x 1	10	152	○
HSK 100	12	95	-	50	-	46	M10 x 1	10	153	○
HSK 100	14	95	-	50	-	46	M10 x 1	10	154	○
HSK 100	16	100	-	50	-	49	M12 x 1	10	155	○
HSK 100	18	100	-	50	-	49	M12 x 1	10	156	○
HSK 100	20	105	-	50	-	51	M16 x 1	10	157	○
HSK 100	25	110	-	53	-	57	M16 x 1	10	158	○
HSK 100	32	110	-	59	-	61	M16 x 1	10	159	○

23733 006 = Prod. Gr. 263, 23733 008 = Prod. Gr. 263, 23733 016 = Prod. Gr. 263, 23733 018 = Prod. Gr. 263, 23733 020 = Prod. Gr. 263, 23733 025 = Prod. Gr. 263, 23733 150 = Prod. Gr. 263, 23733 151 = Prod. Gr. 263, 23733 152 = Prod. Gr. 263, 23733 153 = Prod. Gr. 263, 23733 154 = Prod. Gr. 263, 23733 155 = Prod. Gr. 263, 23733 156 = Prod. Gr. 263, 23733 157 = Prod. Gr. 263, 23733 158 = Prod. Gr. 263, 23733 159 = Prod. Gr. 263, 23733 010 = Prod. Gr. 287, 23733 012 = Prod. Gr. 287, 23733 014 = Prod. Gr. 287

ATORN® Hydro expansion chuck 3°, ultra-slim (DIN 69893-1)

3D-printed

HSK 40 | HSK 63 | Form A | IK | G 2,5 25000 rpm | ≤0,003 | DIN 69893

Application:
Produced using an innovative process, the ultra-slim Hydro expansion chuck combines the advantages of an expansion chuck and a shrink-fit chuck in a single product.

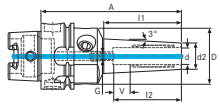
Execution:
- Extremely high heat resistance (up to 120°C) ensures that the chuck retains its accuracy
- Outstanding absorption
- Standard tool changes as with expansion chucks without requiring additional devices
- Various applications when used with reducer bushings
- With Balluff chip hole
- **No. 23733 303–23733 312:**
  - Unusually high gripping forces
  - Slimline design for a shrink-fit chuck, therefore suitable for narrow interfering contours
- **No. 23733 320–23738 163:**
  - Exceptionally high clamping forces
  - Slimline design of a shrink-fit chuck, therefore suitable for narrow interfering contours

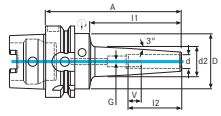
Delivery:
tool chuck with matching hexagon key

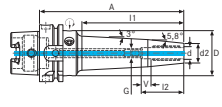

No. 23733 303–23733 312


No. 23733 320–23733 327


No. 23738


No. 23738


No. 23733 303–23733 312


No. 23733 320–23733 327

Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	l1 (mm)	l2 (mm)	G	max. V (mm)	23738... Ident. No.		23733... Ident. No.	
HSK 40	3	85	9	34	48	28	M3	-	140	●	-	-
HSK 40	4	85	10	34	45	28	M3	-	141	●	-	-
HSK 40	5	85	11	34	45	28	M3	-	142	●	-	-
HSK 40	6	85	12	34	46	37	M5	-	143	●	-	-
HSK 40	8	85	14	34	46	37	M6	-	144	●	-	-
HSK 40	10	85	16	34	47	41	M5	-	145	●	-	-
HSK 40	12	85	18	34	47	46	M5	10	146	●	-	-
HSK 63	14	120	22	50	71	46	M10 x 1	10	160	●	-	-
HSK 63	16	120	24	50	71.5	49	M12 x 1	10	161	●	-	-
HSK 63	18	120	26	50	72	49	M12 x 1	10	162	●	-	-
HSK 63	20	120	28	50	72	51	M16 x 1	10	163	●	-	-
HSK 63	3	120	9	50	73	28	M3	-	-	-	303	●
HSK 63	4	120	10	50	73	28	M3	-	-	-	304	●
HSK 63	5	120	11	50	73	28	M3	-	-	-	305	●
HSK 63	6	120	12	50	73	37	M5	10	-	-	306	●
HSK 63	6	160	16	50	111	37	M5	10	-	-	320	●
HSK 63	6	200	16	50	152	37	M5	10	-	-	321	●
HSK 63	8	120	14	50	74	37	M6	10	-	-	308	●
HSK 63	8	160	18	50	111	37	M6	10	-	-	322	●
HSK 63	8	200	18	50	152	37	M6	10	-	-	323	●
HSK 63	10	120	16	50	74	41	M8 x 1	10	-	-	310	●
HSK 63	10	160	20	50	111	41	M8 x 1	10	-	-	324	●
HSK 63	10	200	20	50	152	41	M8 x 1	10	-	-	325	●
HSK 63	12	120	18	50	75	46	M10 x 1	10	-	-	312	●
HSK 63	12	160	22	50	111	46	M10 x 1	10	-	-	326	●
HSK 63	12	200	22	50	152	46	M10 x 1	10	-	-	327	●

Prod. Gr. 263
Compatible coolant transfer pipe no. 23715 050-070

ATORN® HPH hydro expansion chuck 3°, ultra-slim (DIN 69893-1)

3D-printed

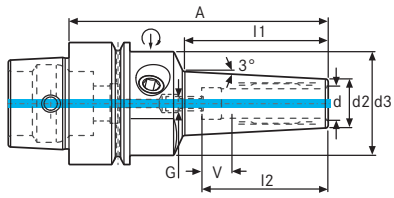
HSK 40 | HSK 50 | Form E | IK | G 2,5 25000 rpm | ↗ ≤0,003 | DIN 69893



Application:
Produced using an innovative process, the ultra-slim Hydro expansion chuck
combines the advantages of an expansion chuck and a shrink-fit chuck
in a single product.

Execution:
- Unusually high clamping forces
- Extremely high heat resistance (up to 120°C) ensures that the chuck retains its accuracy
- Slimline design for a shrink-fit chuck, therefore suitable for narrow interfering contours
- Outstanding absorption
- Standard tool changes as with expansion chucks without requiring additional devices
- Various applications when used with reducer bushings
- With Balluff chip hole

Delivery:
tool chuck with matching hexagon key



Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	l1 (mm)	l2 (mm)	G	max. V (mm)	23733... Ident. No.	
HSK 40	3	85	9	34	45	28	M3	16	330	●
HSK 40	4	85	10	34	45	28	M3	12	331	●
HSK 40	5	85	11	34	45	28	M3	8	332	●
HSK 40	6	85	12	34	46	37	M5	10	333	●
HSK 40	8	85	14	34	46	37	M6	10	334	●
HSK 40	10	85	16	34	47	41	M8 x 1	10	335	●
HSK 40	12	85	18	34	47	46	M10 x 1	10	336	●
HSK 50	3	80	9	42	37	28	M3	16	340	●
HSK 50	4	80	10	42	37	28	M3	12	341	●
HSK 50	5	80	11	42	37	28	M3	8	342	●
HSK 50	6	80	12	42	38	37	M5	10	343	●
HSK 50	8	80	14	42	38	37	M6	10	344	●
HSK 50	10	80	16	42	39	41	M8 x 1	10	345	●
HSK 50	12	80	18	42	39	46	M10 x 1	10	346	●

Prod. Gr. 263
Compatible coolant transfer pipe no. 23715 050-070

ATORN® HSK A-63 shrink-fit chuck, 4.5 degrees (DIN 69893-1)

HSK 63 | Form A | IK | G 2,5 25000 rpm | ↗ 0,003 | DIN 69893

Application:
Ident. No. 003–032: For clamping milling tools and drill bits with straight shank, tolerance h6. Suitable for shrinking on inductive contact and hot air devices.

Execution:
- **Ident. No. 003–032:**
  - Heat-resistant and high-temperature tool steel 1,600-1,800 N/mm²
  - hardness 52 + 2 HRC
  - maximum coolant pressure 80 bar
  - adjustment travel 10 mm, can be adjusted on both sides
- For shrinking and reverse shrinking of cemented carbide and HSS tools
- 4 additional drill holes for fine balancing
- hole for Balluff chip

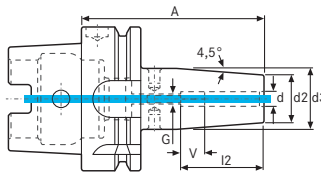
Advantage:
- **Ident. No. 003–032:**
  - High positioning and repeat accuracy
  - Ideal for high rotation speeds
  - Slim design with minimal interference contour
  - Very high torque transfer
  - Ideally suited for HSC machining



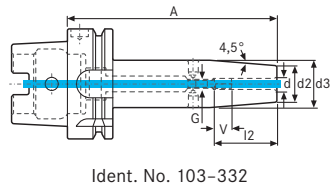
Ident. No. 003–032



Ident. No. 103–332



Ident. No. 003–032



Ident. No. 103–332

Tool holding device	d (mm)	A (mm)	d2 (mm)	d3 (mm)	l2 (mm)	G	max. V (mm)	23419... Ident. No.	
HSK 63	3	80	10	15	22	M6	10	003	●
HSK 63	3	120	10	15	22	-	-	103	●
HSK 63	3	160	10	15	-	-	0	203	●
HSK 63	3	200	10	15	-	-	10	303	○
HSK 63	4	80	15	22	26	M6	10	004	●
HSK 63	4	120	15	22	26	-	-	104	●
HSK 63	4	160	15	22	-	-	0	204	●
HSK 63	4	200	15	22	-	-	10	304	○
HSK 63	5	80	15	22	30	M6	10	005	●
HSK 63	5	120	15	22	30	-	-	105	●
HSK 63	5	160	15	22	-	-	0	205	○
HSK 63	5	200	15	22	-	-	10	305	○
HSK 63	6	80	21	27	36	M5	10	006	●
HSK 63	6	120	21	27	36	M5	10	106	●
HSK 63	6	160	21	27	36	M5	10	206	●
HSK 63	6	200	21	27	36	M5	10	306	●
HSK 63	8	80	21	27	36	M6	10	008	●
HSK 63	8	120	21	27	36	M6	10	108	●
HSK 63	8	160	21	27	36	M6	10	208	●
HSK 63	8	200	21	27	36	M6	10	308	●
HSK 63	10	85	24	32	41	M8 x 1	10	010	●
HSK 63	10	120	24	32	41	M8 x 1	10	110	●
HSK 63	10	160	24	32	41	M8 x 1	10	210	●
HSK 63	10	200	24	32	41	M8 x 1	10	310	●
HSK 63	12	90	24	32	47	M10 x 1	10	012	●
HSK 63	12	120	24	32	47	M10 x 1	10	112	●
HSK 63	12	160	24	32	47	M10 x 1	10	212	●
HSK 63	12	200	24	32	47	M10 x 1	10	312	○
HSK 63	14	90	27	34	47	M10 x 1	10	014	●
HSK 63	14	120	27	34	47	M10 x 1	10	114	●
HSK 63	14	160	27	34	47	M10 x 1	10	214	●
HSK 63	14	200	27	34	47	M10 x 1	10	314	○
HSK 63	16	95	27	34	50	M12 x 1	10	016	●
HSK 63	16	120	27	34	50	M12 x 1	10	116	●
HSK 63	16	160	27	34	50	M12 x 1	10	216	●
HSK 63	16	200	27	34	50	M12 x 1	10	316	●
HSK 63	18	95	33	42	50	M12 x 1	10	018	●
HSK 63	18	120	33	42	50	M12 x 1	10	118	●
HSK 63	18	160	33	42	50	M12 x 1	10	218	○
HSK 63	18	200	33	42	50	M12 x 1	10	318	○
HSK 63	20	100	33	42	52	M16 x 1	10	020	●
HSK 63	20	120	33	42	52	M16 x 1	10	120	●
HSK 63	20	160	33	42	52	M16 x 1	10	220	○
HSK 63	20	200	33	42	52	M16 x 1	10	320	●
HSK 63	25	115	44	53	62	M16 x 1	10	025	●
HSK 63	25	120	44	42	58	M16 x 1	10	125	○
HSK 63	25	160	44	53	62	M16 x 1	10	225	○
HSK 63	25	200	44	53	62	M16 x 1	10	325	●
HSK 63	32	120	44	53	62	M16 x 1	10	132	○
HSK 63	32	160	44	53	62	M16 x 1	10	232	○
HSK 63	32	200	44	53	62	M16 x 1	10	332	○

Prod. Gr. 287
Compatible coolant transfer pipe no. 23715 050

ATORN® Shrink-fit chuck, 4.5 degrees (with KKB) (DIN 69893-1)

With resealable coolant bores (=KKB)

HSK 63 | Form A | G 2,5 25000 rpm | ≤0,003 | DIN 69893

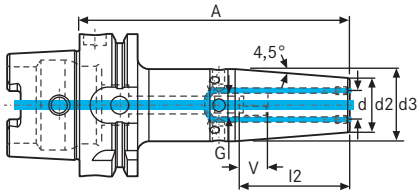
Application:
Ident. No. 503–532: For clamping milling tools and drill bits with straight shanks in h6 tolerance.
Suitable for shrinking onto inductive contact and hot air devices.

Execution:
- **Ident. No. 503–532:**
  - Guaranteed maximum concentricity 0.003 mm
  - For shrinking cemented carbide and HSS tools in and out
  - Hardness 52 + 2 HRC
  - Maximum coolant pressure 80 bar
  - Adjustment travel 10 mm, can be adjusted on both sides
  - 4 additional holes for fine balancing
  - Hole for Balluff chip
  - Resealable coolant bores
  - Geometry significantly improves shock-absorption

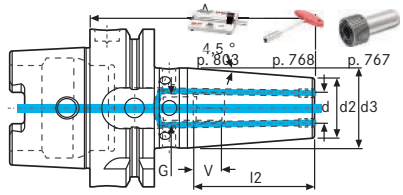
Advantage:
- **Ident. No. 503–532:**
  - High transmittable torques
  - High chip removal rate, perfect for HSC machining
  - Protects spindle and machine
  - Ideal for high rotation speeds
  - improved surface quality



Ident. No. 503–514, 518–520



Ident. No. 553–575



Ident. No. 503–532

Tool holding device	d (mm)	A (mm)	d2 (mm)	d3 (mm)	l2 (mm)	G	max. V (mm)	23419... Ident. No.	
HSK 63	3	80	10	15	28	M6	16	503	●
HSK 63	3	120	10	20	12	-	-	553	●
HSK 63	4	80	15	22	28	M6	12	504	●
HSK 63	4	120	15	22	16	-	-	554	●
HSK 63	5	80	15	22	30	M6	10	505	●
HSK 63	5	120	15	22	20	-	-	555	●
HSK 63	6	80	21	27	36	M6	10	506	●
HSK 63	6	120	21	27	36	M5	10	556	●
HSK 63	8	80	21	27	36	M6	10	508	●
HSK 63	8	120	21	27	36	M6	10	557	●
HSK 63	10	85	24	32	41	M8 x 1	10	510	●
HSK 63	10	120	24	32	41	M8 x 1	10	560	●
HSK 63	12	90	24	32	47	M10 x 1	10	512	●
HSK 63	12	120	24	32	47	M10 x 1	10	562	●
HSK 63	14	90	27	34	47	M10 x 1	10	514	●
HSK 63	14	120	27	34	47	M10 x 1	10	564	●
HSK 63	16	95	27	34	50	M12 x 1	10	516	●
HSK 63	16	120	27	34	50	M12 x 1	10	566	●
HSK 63	18	95	33	42	50	M12 x 1	10	518	●
HSK 63	18	120	33	42	50	M12 x 1	10	568	●
HSK 63	20	100	33	42	52	M16 x 1	10	520	●
HSK 63	20	120	33	42	52	M16 x 1	10	570	●
HSK 63	25	115	44	53	58	M16 x 1	10	525	○
HSK 63	25	120	44	53	58	M16 x 1	10	575	○
HSK 63	32	120	44	53	62	M16 x 1	10	532	○

Prod. Gr. 287
Compatible coolant transfer pipe no. 23715 050

ATORN® Shrink-fit chuck, slimline, 3 degrees (DIN 69893-1)

With low interference contour for mould making

HSK 63 | Form A | IK | G 2,5 25000 rpm | ↗ 0,003 | DIN 69893

Application:

Ident. No. 141–173: For clamping milling tools and drill bits with h6 shaft tolerance.

Suitable for heavy-duty cutting and all high-power applications.

Suitable for inductive, contact and hot air shrinking devices.

Execution:

- **Ident. No. 141–173:**
  - Shrink grip and shrink release of HM and HSS tools
  - hardness 52 + 2 HRC
  - maximum coolant pressure 80 bar
  - 4 additional drill holes for fine balancing
  - hole for Balluff chip
  - glass bead blasted

Advantage:

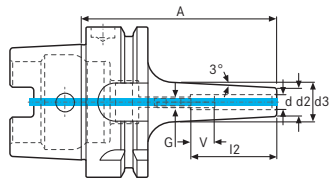
- **Ident. No. 141–173:**
  - Slimline design, extremely low interference contour
  - High transmittable torques
  - High positioning and repeat accuracy
  - Ideal for high rotation speeds



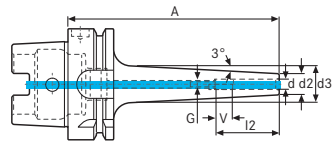
Ident. No. 103–120



Ident. No. 141–173



Ident. No. 103–120



Ident. No. 141–173

Tool holding device	d (mm)	A (mm)	d2 (mm)	d3 (mm)	l2 (mm)	G	max. V (mm)	23427... Ident. No.	
HSK 63	3	80	9	14	28	M6	16	103	●
HSK 63	3	120	9	16	-	-	-	141	●
HSK 63	3	160	9	19	-	-	-	142	●
HSK 63	3	200	9	19	-	-	-	143	●
HSK 63	4	80	10	15	28	M6	12	104	●
HSK 63	4	120	10	17	-	-	-	144	●
HSK 63	4	160	10	20	-	-	-	145	●
HSK 63	4	200	10	20	-	-	-	146	●
HSK 63	5	80	11	16	30	M6	10	105	●
HSK 63	5	120	11	18	-	-	-	147	●
HSK 63	5	160	11	21	-	-	-	148	●
HSK 63	5	200	11	21	-	-	-	149	●
HSK 63	6	80	12	17	36	M6	10	106	●
HSK 63	6	120	12	21	-	M5	10	150	●
HSK 63	6	160	12	24	-	M5	10	151	●
HSK 63	6	200	12	24	-	M5	10	152	●
HSK 63	8	80	14	19	36	M6	10	108	●
HSK 63	8	120	14	23	-	M6	10	153	●
HSK 63	8	160	14	26	-	M6	10	154	●
HSK 63	8	200	14	26	-	M6	10	155	●
HSK 63	10	85	16	21	41	M8 x 1	10	110	●
HSK 63	10	120	16	25	-	M10 x 1	10	156	●
HSK 63	10	160	16	28	-	M10 x 1	10	157	●
HSK 63	10	200	16	28	-	M10 x 1	10	158	●
HSK 63	12	90	18	24	47	M10 x 1	10	112	●
HSK 63	12	120	18	27	-	M10 x 1	10	159	●
HSK 63	12	160	18	30	-	M10 x 1	10	160	●
HSK 63	12	200	18	30	-	M10 x 1	10	161	●
HSK 63	14	90	20	26	47	M10 x 1	10	114	●
HSK 63	14	120	20	29	-	M10 x 1	10	162	●
HSK 63	14	160	20	32	-	M10 x 1	10	163	●
HSK 63	14	200	20	32	-	M10 x 1	10	164	●
HSK 63	16	95	22	28	50	M12 x 1	10	116	●
HSK 63	16	120	22	31	-	M10 x 1	10	165	●
HSK 63	16	160	22	34	-	M12 x 1	10	166	●
HSK 63	16	200	22	34	-	M12 x 1	10	167	●
HSK 63	18	95	24	30	50	M12 x 1	10	118	●
HSK 63	18	120	24	33	-	M12 x 1	10	168	●
HSK 63	18	160	24	36	-	M12 x 1	10	169	●
HSK 63	18	200	24	36	-	M12 x 1	10	170	●
HSK 63	20	100	26	33	52	M16 x 1	10	120	●
HSK 63	20	120	26	35	-	M12 x 1	10	171	●
HSK 63	20	160	26	38	-	M12 x 1	10	172	●
HSK 63	20	200	26	38	-	M12 x 1	10	173	●

Prod. Gr. 287

Compatible coolant transfer pipe no. 23715 050

ATORN® CNC precision short drill chuck (ISO 7388-1)

With spur gear mechanism

SK 40 | Form AD | Form A | IK | R/L | G 6,3 25000 rpm | ISO 7388-1

Application:
Ident. No. 540: For use on machining centres and CNC milling machines with tool change. For drilling, reaming, countersinking and also light milling and smoothing tasks.
Ident. No. 550: For use on machining centres and CNC machines with tool changer.

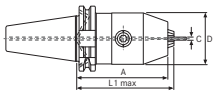
Execution:
- **Ident. No. 540:** Wear parts hardened and polished
- **Ident. No. 550:**
  - 100% concentricity check using different test pin diameters at various measuring points, based on DIN ISO 10888
  - Concentricity tolerance ≤ 0.03 mm over entire clamping range
  - With worm gear mechanism
  - Type A with steep taper, no internal coolant feed

Advantage:
- **Ident. No. 540:** Remains securely clamped even with sudden spindle stop
- **Ident. No. 550:** remains securely clamped even with sudden spindle stop

Delivery:
Ident. No. 540: with hexagon key
Ident. No. 550: With hexagon key

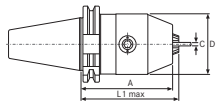
Notes:
The previous standard DIN 69871-1 was replaced by ISO 7388-1.


Ident. No. 540

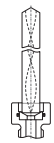


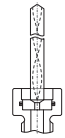
Ident. No. 540


Ident. No. 550



Ident. No. 550


Ident. No. 540
Sealing washer ATORN 16
(Ø 4.2 mm)


Ident. No. 540
Sealing washer ATORN 16
(Ø 2.05 mm)

Tool holding device	Min./max. clamping width	A (mm)	Length, open (mm)	D (mm)	Coolant supply	Concentricity tolerance (mm)	21329... Ident. No.	
SK 40	0.5-16 mm	90	103	57	Yes	0.020	540	●
SK 40	0.5-16 mm	90	103	57	No	0.020	550	●

Prod. Gr. 208
Compatible pull studs no. 23690 130-150 page 766

ATORN® Precision collet (ISO 7388-1)

SK 40 | Form AD | IK | G 2,5 25000 rpm | ↗ 0,003 | ISO 7388-1

Application:
For clamping tools with straight shanks without loss of concentricity or clamping force up to shank tolerance h10, for economic machining of individual and series parts with extremely high-precision machining results. Ideal for HPC and HSC metal cutting.

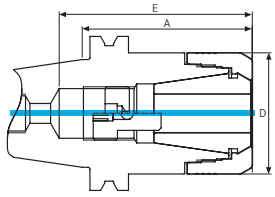
Execution:
- 30° trapezoidal thread with polished, extra-long double guide with special easy glide coating for lower friction
- Clamping forces are evenly distributed across the entire cylindrical shell surface and perfect surfaces are achieved through the optimally absorbed radial forces
- Precise centring when tightening the clamping nut

Advantage:
- Resistant to fluctuations in temperature and fully suitable for drying processes and hard milling up to 200 °C
- The strengthening of the chuck body over the diameter of the clamping nut creates enormous stability with the optimum interference contour
- Extremely low system concentricity of < 3 µm with 2 µm collets from Fahrion, HP/HPD 23323, unsealed and sealed collets up to 80 bar for IC (without sealing disc)
- Completely surrounded in the chuck cone for optimum stability and even distribution of the clamping forces
- Retention forces are doubled compared to conventional collets

Delivery:
Tool chuck including clamping nut. Please order spanner separately. A torque wrench is recommended

Notes:
The previous standard DIN 69871-1 was replaced by ISO 7388-1.







Tool holding device	Size	Collet type	Min./max. clamping range	D (mm)	A (mm)	E (mm)	Max. tightening torque (Nm)	23361... Ident. No.	
SK 40	HPE 16	ER 16 (426 E)	1-10 mm	30	70	110	55	001	●
SK 40	HPE 16	ER 16 (426 E)	1-10 mm	30	100	140	55	002	●
SK 40	HPE 16	ER 16 (426 E)	1-10 mm	30	160	200	55	003	●
SK 40	HPE 16	ER 16 (426 E)	1-10 mm	30	200	240	55	004	○
SK 40	HPE 25	ER 25 (430 E)	2-16 mm	40	70	110	85	005	●
SK 40	HPE 25	ER 25 (430 E)	2-16 mm	40	100	113	85	006	●
SK 40	HPE 25	ER 25 (430 E)	2-16 mm	40	160	165	85	007	○
SK 40	HPE 25	ER 25 (430 E)	2-16 mm	40	200	-	85	008	○
SK 40	HPE 32	ER 32 (470 E)	2-20 mm	50	70	111	140	009	●
SK 40	HPE 32	ER 32 (470 E)	2-20 mm	50	100	114	140	010	●
SK 40	HPE 32	ER 32 (470 E)	2-20 mm	50	160	135	140	011	●

Prod. Gr. 263
Compatible pull studs no. 23690 130-150 page 766
Compatible ER-type collet chucks no. 23323 501-615, no. 23323 617-658 and no. 23322 501-636

ATORN® HPH high-performance HYDRO expansion chuck (ISO 7388-1)

Short, heavy-duty design

SK 40 | SK 50 | Form AD/AF | IK | G 2,5 25000 rpm | ≤0,003 | ISO 7388-1

Application:
For high-precision and centric clamping of milling, drilling and reaming tools – particularly with milling and heavy-duty machining during rough machining.

Execution:
- axial longitudinal adjustment
- reducing sleeves for flexible applications
- Very high concentricity (< 3 µm)
- coolant pressure up to 80 bar
- heat-resistant up to 100°C

Advantage:
- Sturdy version ideal for HPC+HSC metal cutting
- Damping properties to increase duration of tools and service life of machine spindle
- Vibration-damping effect reduces micro-cracks and improves the workpiece surface
- All common shanks can be clamped (Ø tolerance h6)
- Very high torque transfer (Ø 20 = 650 Nm/Ø 32 = 890 Nm)

Delivery:
Tool holder with matching hex key

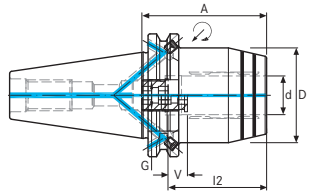
Notes:
The previous standard DIN 69871-1 was replaced by ISO 7388-1.



Ident. No. 012–021



Ident. No. 032



Tool holding device	d (mm)	A (mm)	D (mm)	l2 (mm)	max. V (mm)	G	23338... Ident. No.	
SK 40	12	50	42	46	10	M8 x 1	012	●
SK 40	20	64.5	49	51	10	M16 x 1	020	●
SK 50	20	64.5	49	51	10	M16 x 1	021	○
SK 50	32	81	72	61	10	M16 x 1	032	○

Prod. Gr. 263

ATORN® HYDRO expansion chucks (ISO 7388-1)

Ultra-short design and short heavy-duty design

SK 50 | Form AD/AF | IK | G 2,5 25000 rpm | ≤0,003 | ISO 7388-1

Application:
For high precision centric clamping of drilling, reaming and milling tools.

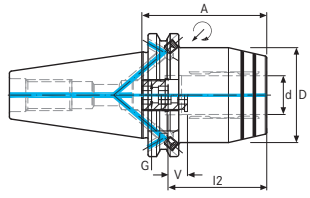
Execution:
- Concentricity tolerance < 0.003 mm
- With axial longitudinal adjustment
- Flexible thanks to use of reducing sleeves
- Coolant pressure up to 80 bar
- Heat-resistant up to 50°C

Advantage:
- Vibration-damping effect reduces micro-cracks and improves workpiece surfaces
- Damping properties to increase service life of tool and machine spindle
- High torque transfer (Ø 20 = 400 Nm/Ø 32 = 730 Nm)
- All common shanks can be clamped (Ø tolerance h6)

Delivery:
Tool holder with matching hex key

Notes:
The previous standard DIN 69871-1 was replaced by ISO 7388-1.





Tool holding device	d (mm)	A (mm)	d3 (mm)	D (mm)	l2 (mm)	max. V (mm)	G	23338... Ident. No.	
SK 50	32	81	63	72	61	10	M16 x 1	222	○

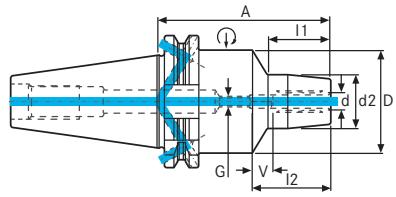
Prod. Gr. 263
Compatible pull studs no. 23690 130-150

ATORN® Hydro-expansion chuck ISO 7388-1 (ISO 7388-1)

Short slim design, type AD/AF

SK 40 | SK 50 | Form AD/AF | IK | G 2,5 25000 rpm | ⌖ ≤0,003 | ISO 7388-1





Application:
For clamping drill bits and milling tools with straight shank.

Execution:
- High clamping forces
- Axial longitudinal adjustment
- Highly precise centric clamping
- Outstanding absorption
- Standard tool changes as with expansion chucks without requiring additional devices
- Various applications when used with reducer bushings
- With Balluff chip hole
- Can be clamped with all common shank types

Advantage:
- High degree of torque transmission
- Good surface qualities
- Suitable for high rotation speeds
- Excellent vibration-absorbing properties
- Longer service life of cutting tools

Delivery:
Tool holder with matching hex key

Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	l1 (mm)	l2 (mm)	max. V (mm)	G	23333... Ident. No.	
SK 40	6	80.5	26	49.5	29.5	37	10	M5	406	○
SK 40	8	80.5	28	49.5	30	37	10	M6	408	○
SK 40	10	80.5	30	49.5	35	41	10	M8 x 1	410	○
SK 40	12	80.5	32	49.5	40	46	10	M10 x 1	412	○
SK 40	14	80.5	34	49.5	40	46	10	M10 x 1	414	○
SK 40	16	80.5	38	49.5	45	49	10	M12 x 1	416	○
SK 40	18	80.5	40	49.5	46	49	10	M12 x 1	418	○
SK 40	20	80.5	42	49.5	47	51	10	M16 x 1	420	○
SK 40	25	80.5	55	63	28	57	10	M16 x 1	425	○
SK 50	32	80.5	63	70	25.5	61	10	M16 x 1	432	○
SK 50	6	80.5	26	49.5	-	29.5	10	M5	456	○
SK 50	8	80.5	28	49.5	-	30	10	M6	458	○
SK 50	10	80.5	30	49.5	-	35	10	M8 x 1	460	○
SK 50	12	80.5	32	49.5	-	40	10	M10 x 1	462	○
SK 50	14	80.5	34	49.5	-	40	10	M10 x 1	464	○
SK 50	18	80.5	40	49.5	-	46	10	M12 x 1	466	○
SK 50	20	80.5	42	49.5	-	42	10	M16 x 1	467	○
SK 50	25	100	55	63	-	48	10	M16 x 1	468	○
SK 50	32	100	63	70	-	61	10	M16 x 1	469	○

Prod. Gr. 263

ATORN® HPH hydro expansion chuck 3°, ultra-slim (ISO 7388-1)

3D-printed

SK 30 | SK 40 | Form AD | Form AD/AF | IK | G 2,5 25000 rpm | ≤0,003 | ISO 7388-1

Application:
Produced using an innovative process, the ultra-slim Hydro expansion chuck combines the advantages of an expansion chuck and a shrink-fit chuck in a single product.

Execution:
- Extremely high heat resistance (up to 120°C) ensures that the chuck retains its accuracy
- Outstanding absorption
- Standard tool changes as with expansion chucks without requiring additional devices
- variable thanks to the use of reducer bushings
- Balance quality at G2.5/25,000 rpm
- With Balluff chip hole

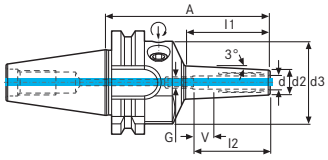
- **No. 23333 603–23333 612, 23333 630–23338 103:**
  - Unusually high gripping forces
  - Slimline design for a shrink-fit chuck, therefore suitable for narrow interfering contours
  - Max. concentricity < 0.003 mm
- **No. 23333 620–23333 627:**
  - Exceptionally high clamping forces
  - Slimline design of a shrink-fit chuck, therefore suitable for narrow interfering contours
  - max. concentricity < 0.003 mm

Delivery:
No. 23333 603–23333 612, 23333 630–23338 103: with hexagon key

Notes:
The previous standard DIN 69871-1 was replaced by ISO 7388-1.



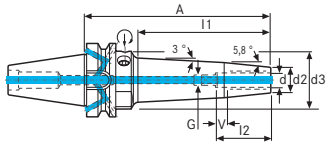
No. 23333 603–23333 612, 23333 630–23338 103



No. 23333 603–23333 612, 23333 630–23338 103



No. 23333 620–23333 627



No. 23333 620–23333 627

Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	l1 (mm)	l2 (mm)	max. V (mm)	G	23333... Ident. No.		23338... Ident. No.	
SK 30	3	85	10	40	45	28	16	M3	630	●	-	-
SK 30	4	85	12	40	45	28	12	M3	631	●	-	-
SK 30	5	85	13	40	45	28	8	M3	632	●	-	-
SK 30	6	85	14	40	46	37	10	M5	633	●	-	-
SK 30	8	85	16	40	46	37	10	M6	634	●	-	-
SK 30	10	85	18	40	47	41	10	M8 x 1	635	●	-	-
SK 30	12	85	20	40	47	46	10	M8 x 1	636	●	-	-
SK 40	3	120	9	49.5	79.5	28	-	-	603	●	-	-
SK 40	4	120	10	49.5	79.5	28	-	-	604	●	-	-
SK 40	5	120	11	49.5	80	28	-	-	605	●	-	-
SK 40	6	120	12	49.5	79.9	37	10	M5	606	●	-	-
SK 40	8	120	14	49.5	79.9	37	10	M6	608	●	-	-
SK 40	10	120	16	49.5	80.9	41	10	M8 x 1	610	●	-	-
SK 40	12	120	18	49.5	81.9	46	10	M10 x 1	612	●	-	-
SK 40	6	160	16	49.5	111	37	10	M5	620	●	-	-
SK 40	6	200	16	49.5	152	37	10	M5	621	●	-	-
SK 40	8	160	18	49.5	111	37	10	M6	622	●	-	-
SK 40	8	200	18	49.5	152	37	10	M6	623	●	-	-
SK 40	10	160	20	49.5	113	41	10	M8 x 1	624	●	-	-
SK 40	10	200	20	49.5	154	41	10	M8 x 1	625	●	-	-
SK 40	12	160	22	49.5	113	46	10	M10 x 1	626	●	-	-
SK 40	12	200	22	49.5	154	46	10	M10 x 1	627	●	-	-
SK 40	14	120	22	49.5	79	46	10	M10 x 1	-	-	100	●
SK 40	16	120	24	49.5	79	49	10	M12 x 1	-	-	101	●
SK 40	18	120	26	49.5	80	49	10	M12 x 1	-	-	102	●
SK 40	20	120	28	49.5	80	51	10	M16 x 1	-	-	103	●

Prod. Gr. 263
Compatible pull studs no. 23690 130-150

ATORN® Shrink-fit chuck, SK40, 4.5 degrees (ISO 7388-1)

DIN 69871 coolant supply AD/B

SK 40 | Form AD/AF | IK | G 2,5 25000 rpm | ≤0,003 | ISO 7388-1

Application:
Ident. No. 003–032: For clamping milling tools and drill bits with straight shank, tolerance h6. Suitable for shrinking on inductive contact and hot air devices.

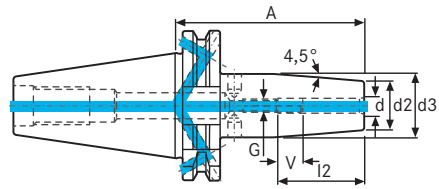
Execution:
- **Ident. No. 003–032:**
  - Guarantees maximum concentricity < 0.003 mm
  - Heat-resistant and high-temperature tool steel 1,600-1,800 N/mm
  - Hardness 52 + 2 HRC
  - Maximum coolant pressure 80 bar
  - Adjustment travel 10 mm, can be adjusted on both sides
  - For shrinking and reverse shrinking of cemented carbide and HSS tools
  - 4 additional holes for fine balancing
  - Hole for Balluff chip

Advantage:
- **Ident. No. 003–032:**
  - High positioning and repeat accuracy
  - Shrink-fit chuck ideal for high rotation speeds
  - Slim design, low interference contour
  - Very high torque transfer
  - Extremely cost-effective

Notes:
Ident. No. 003–032: The previous standard DIN 69871-1 was replaced by ISO 7388-1.



Ident. No. 003–032



Ident. No. 003–032

Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	min. L2 (mm)	G	23424... Ident. No.	
SK 40	3	80	10	17	22	M6	003	●
SK 40	4	80	15	22	26	M6	004	●
SK 40	5	80	15	22	30	M6	005	●
SK 40	6	80	21	27	36	M5	006	●
SK 40	8	80	21	27	36	M6	008	●
SK 40	10	80	24	32	41	M8 x 1	010	●
SK 40	12	80	24	32	47	M10 x 1	012	●
SK 40	14	80	27	34	47	M10 x 1	014	●
SK 40	16	80	27	34	50	M12 x 1	016	●
SK 40	18	80	33	42	50	M12 x 1	018	●
SK 40	20	80	33	42	52	M16 x 1	020	●
SK 40	25	100	44	53	58	M16 x 1	025	●
SK 40	32	100	44	53	62	M16 x 1	032	○
SK 40	3	120	10	20	-	-	103	○
SK 40	4	120	15	22	-	-	104	○
SK 40	5	120	15	22	-	-	105	○
SK 40	6	120	21	27	36	M5	106	●
SK 40	8	120	21	27	36	M6	108	●
SK 40	10	120	24	32	41	M8 x 1	110	●
SK 40	12	120	24	32	47	M10 x 1	112	●
SK 40	14	120	27	34	47	M10 x 1	114	●
SK 40	16	120	27	34	50	M12 x 1	116	●
SK 40	18	120	33	42	50	M12 x 1	118	●
SK 40	20	120	33	42	52	M16 x 1	120	●
SK 40	25	120	44	53	58	M16 x 1	125	●
SK 40	32	120	44	53	62	M16 x 1	132	○
SK 40	3	160	10	20	-	-	203	○
SK 40	4	160	15	22	-	-	204	○
SK 40	5	160	15	22	-	-	205	○
SK 40	6	160	21	27	36	M5	206	●
SK 40	8	160	21	27	36	M6	208	●
SK 40	10	160	24	32	41	M8 x 1	210	●
SK 40	12	160	24	32	47	M10 x 1	212	●
SK 40	14	160	27	34	47	M10 x 1	214	○
SK 40	16	160	27	34	50	M12 x 1	216	●
SK 40	18	160	33	42	50	M12 x 1	218	○
SK 40	20	160	33	42	52	M16 x 1	220	●
SK 40	25	160	44	53	58	M16 x 1	225	○
SK 40	32	160	44	53	62	M16 x 1	232	○
SK 40	3	200	10	20	-	-	303	○
SK 40	4	200	15	22	-	-	304	○
SK 40	5	200	15	22	-	-	305	○
SK 40	6	200	21	27	36	M5	306	●
SK 40	8	200	21	27	36	M6	308	●
SK 40	10	200	24	32	41	M8 x 1	310	●
SK 40	12	200	24	32	47	M10 x 1	312	●
SK 40	14	200	27	34	47	M10 x 1	314	○
SK 40	16	200	27	34	50	M12 x 1	316	○
SK 40	18	200	33	42	50	M12 x 1	318	○
SK 40	20	200	33	42	52	M16 x 1	320	○
SK 40	25	200	44	53	58	M16 x 1	325	○
SK 40	32	200	44	53	62	M16 x 1	332	○

Prod. Gr. 287
Compatible pull studs no. 23690 130-150

ATORN® Shrink-fit chuck, slimline, 3 degrees (ISO 7388-1)

For mould making with minimum interference contour

SK 40 | Form AD/AF | IK | G 2,5 25000 rpm | ≤0,003 | ISO 7388-1

Application:
Ident. No. 003–020: For clamping milling tools and drill bits with h6 shaft tolerance.

Suitable for inductive, contact and hot air shrinking devices.

Execution:

- **Ident. No. 003–020:**
  - Shrink grip and shrink release of HM and HSS tools
  - Hardness 52 + 2 HRC
  - maximum coolant pressure 80 bar
  - 4 additional holes for fine balancing
  - hole for Balluff chip
  - glass bead blasted

Advantage:

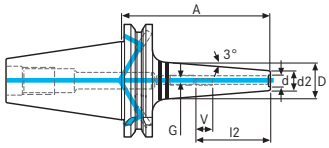
- **Ident. No. 003–020:**
  - Slimline design, extremely low interference contour
  - High transmittable torques
  - High positioning and repeat accuracy
  - Ideal for high rotation speeds



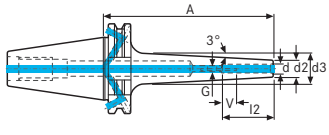
Ident. No. 003–005, 008–020



Ident. No. 041–073



Ident. No. 003–020



Ident. No. 041–073

Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	max. L2 (mm)	G	max. V (mm)	23427... Ident. No.	
SK 40	3	80	9	14	28	M6	16	003	●
SK 40	3	120	9	16	12	-	-	041	●
SK 40	3	160	9	19	12	-	-	042	●
SK 40	3	200	9	19	12	-	-	043	●
SK 40	4	80	10	15	28	M6	12	004	●
SK 40	4	120	10	17	16	-	-	044	●
SK 40	4	160	10	20	16	-	-	045	●
SK 40	4	200	10	20	16	-	-	046	●
SK 40	5	80	11	16	30	M6	10	005	●
SK 40	5	120	11	18	20	-	-	047	●
SK 40	5	160	11	21	20	-	-	048	●
SK 40	5	200	11	21	20	-	-	049	●
SK 40	6	80	12	17	36	M5	10	006	●
SK 40	6	120	12	22	36	M5	-	050	●
SK 40	6	160	12	24	36	M5	-	051	●
SK 40	6	200	12	24	36	M5	-	052	●
SK 40	8	80	14	19	36	M6	10	008	●
SK 40	8	120	14	24	36	M6	-	053	●
SK 40	8	160	14	26	36	M6	-	054	●
SK 40	8	200	14	26	36	M6	-	055	●
SK 40	10	80	16	21	41	M8 x 1	10	010	●
SK 40	10	120	16	26	41	M8 x 1	-	056	●
SK 40	10	160	16	28	41	M8 x 1	-	057	●
SK 40	10	200	16	28	41	M8 x 1	-	058	●
SK 40	12	80	18	23	47	M10 x 1	10	012	●
SK 40	12	120	18	28	47	M10 x 1	-	059	●
SK 40	12	160	18	30	47	M10 x 1	-	060	●
SK 40	12	200	18	30	47	M10 x 1	-	061	●
SK 40	14	80	20	26	47	M10 x 1	10	014	●
SK 40	14	120	20	30	47	M10 x 1	-	062	●
SK 40	14	160	20	32	47	M10 x 1	-	063	●
SK 40	14	200	20	32	47	M10 x 1	-	064	●
SK 40	16	80	22	28	50	M12 x 1	10	016	●
SK 40	16	120	22	32	50	M12 x 1	-	065	●
SK 40	16	160	22	34	50	M12 x 1	-	066	●
SK 40	16	200	22	34	50	M12 x 1	-	067	●
SK 40	18	80	24	30	50	M12 x 1	10	018	●
SK 40	18	120	24	34	50	M12 x 1	-	068	●
SK 40	18	160	24	-	50	M12 x 1	-	069	●
SK 40	18	200	24	-	50	M12 x 1	-	070	●
SK 40	20	80	26	32	52	M16 x 1	10	020	●
SK 40	20	120	26	-	52	M16 x 1	-	071	●
SK 40	20	160	26	-	52	M16 x 1	-	072	●
SK 40	20	200	26	-	52	M16 x 1	-	073	●

Prod. Gr. 287
Compatible pull studs no. 23690 130-150

ATORN® Shrink-fit chuck, 4.5 degrees (with KKB) (ISO 7388-1)

With resealable coolant bores (=KKB)

SK 40 | Form AD/AF | IK | G 2,5 25000 rpm | ≤0,003 | ISO 7388-1

Application:
Ident. No. 503–532: For clamping milling tools and drill bits with straight shanks in h6 tolerance.
Suitable for shrinking onto inductive contact and hot air devices.

Execution:
- **Ident. No. 503–532:**
  - Guaranteed maximum concentricity 0.003 mm
  - For shrinking cemented carbide and HSS tools in and out
  - Hardness 52 + 2 HRC
  - Maximum coolant pressure 80 bar
  - Adjustment travel 10 mm, can be adjusted on both sides
  - 4 additional holes for fine balancing
  - Hole for Balluff chip

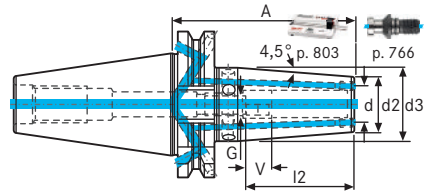
Advantage:
- **Ident. No. 503–532:**
  - High transmittable torques
  - Heat-resistant and high-temperature tool steel 1600-1800 N/mm²
  - High positioning and repeat accuracy
  - Ideal for high rotation speeds



Ident. No. 503–532



Ident. No. 553–582



Ident. No. 503–532

Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	max. L2 (mm)	G	max. V (mm)	23424... Ident. No.	
SK 40	3	80	10	17	28	M6	10	503	●
SK 40	4	80	15	22	28	M6	10	504	●
SK 40	5	80	15	22	30	M6	10	505	●
SK 40	6	80	21	27	36	M5	10	506	●
SK 40	8	80	21	27	36	M6	10	508	●
SK 40	10	80	24	32	41	M8 x 1	10	510	●
SK 40	12	80	24	32	47	M10 x 1	10	512	●
SK 40	14	80	27	34	47	M10 x 1	10	514	●
SK 40	16	80	27	34	50	M12 x 1	10	516	●
SK 40	18	80	33	42	50	M16 x 1	10	518	●
SK 40	20	80	33	42	52	M16 x 1	10	520	●
SK 40	25	100	44	53	58	M16 x 1	10	525	○
SK 40	32	100	44	53	62	M16 x 1	10	532	○
SK 40	3	120	9	16	-	-	-	553	●
SK 40	4	120	10	17	-	-	-	554	●
SK 40	5	120	11	18	-	-	-	555	●
SK 40	6	120	12	22	36	M5	10	556	●
SK 40	8	120	14	24	36	M6	10	558	●
SK 40	10	120	16	26	41	M8 x 1	10	560	●
SK 40	12	120	18	28	47	M10 x 1	10	562	●
SK 40	14	120	20	30	47	M10 x 1	10	564	●
SK 40	16	120	22	32	50	M12 x 1	10	566	●
SK 40	18	120	24	34	50	M12 x 1	10	568	●
SK 40	20	120	26	36	52	M16 x 1	10	570	●
SK 40	25	120	44	53	58	M16 x 1	10	575	○
SK 40	32	120	44	53	62	M16 x 1	10	582	○

Prod. Gr. 287
Compatible pull studs no. 23690 130-150

ATORN® shrink-fit chuck for heavy-duty machining with KKB (ISO 7388-1)

with resealable coolant bores (= KKB)

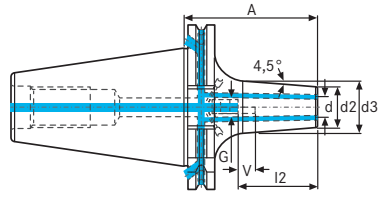
SK 50 | Form AD/AF | G 2,5 25000 rpm | ≤0,003 | ISO 7388-1

Application:
For clamping milling tools and drill bits with straight shanks in h6 tolerance.
Suitable for heavy-duty machining.

Execution:
- Guaranteed maximum concentricity 0.003 mm
- Shrink grip and shrink release of HM and HSS tools
- Hardness 52 + 2 HRC
- Maximum coolant pressure 80 bar
- Adjustment travel 10 mm, can be adjusted on both sides
- 4 additional holes for fine balancing
- Hole for Balluff chip
- Geometry significantly improves shock-absorption

Advantage:
- High transmittable torques
- High chip removal rate, perfect for HSC machining
- Protects spindle and machine
- Ideal for high rotation speeds
- Improved surface quality





Tool holding device	d (mm)	A (mm)	d2 (mm)	D (mm)	max. L2 (mm)	G	max. V (mm)	23424... Ident. No.	
SK 50	6	80	21	27.7	36	M5	10	780	●
SK 50	8	80	21	27.7	36	M6	10	781	●
SK 50	10	80	24	31	41	M8 x 1	10	782	●
SK 50	12	80	24	31	47	M10 x 1	10	783	●
SK 50	16	80	27	34.3	50	M12 x 1	10	784	●
SK 50	20	80	33	40.6	52	M16 x 1	10	785	○
SK 50	25	100	44	55.9	58	M16 x 1	10	786	○
SK 50	32	100	44	55.9	62	M16 x 1	10	787	○

Prod. Gr. 287

ATORN® CNC precision short drill chuck (ISO 7388-2)

For clockwise and anti-clockwise rotation

BT 40 | Form JD | IK | R/L | G 40 7000 rpm | ISO 7388-2

Application:
For use on machining centres and CNC milling machines with tool change. For drilling, reaming, countersinking and also light milling and smoothing tasks.

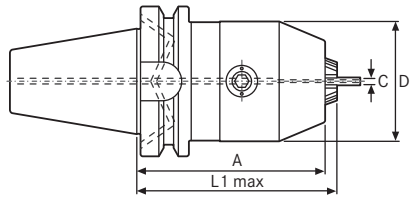
Execution:
- integrated worm gearing ensures high retaining torque
- Remains securely clamped even with sudden spindle stop
- Requisite pull studs, no. 23690

Advantage:
- Wear parts hardened and polished for long service life

Delivery:
Including hexagon key

Notes:
The previous standard JIS B 6339 MAS BT was replaced by ISO 7388-2.





Tool holding device	Min./max. clamping width	A (mm)	D (mm)	L1 max. (mm)	21329... Ident. No.	
BT 40	1-16 mm	88	50	100	110	●

Prod. Gr. 208
Compatible pull studs no. 23690 240-250

ATORN® CNC precision short drill chuck (ISO 7388-2)

With spur gear mechanism

BT 40 | Form JD | IK | R/L | G 6,3 25000 rpm | ISO 7388-2

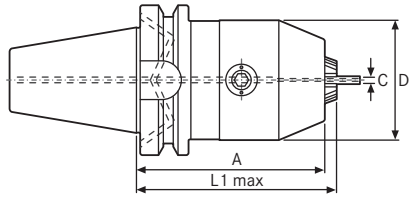
Application:
For use on machining centres and CNC machines with tool change systems. For drilling, reaming, countersinking and also light milling and finishing tasks.

Execution:
- Wear parts hardened and polished

Advantage:
- Remains securely clamped even with sudden spindle stop

Delivery:
Including hexagon key





Tool holding device	Min./max. clamping width	A (mm)	D (mm)	L1 max. (mm)	21329... Ident. No.	
BT 40	0.5-16 mm	98	57	111	551	●

Prod. Gr. 208

ATORN® HPH high-performance HYDRO expansion chuck (ISO 7388-2)

Short, heavy-duty design

BT 40 | IK | Form JD/JF | G 2,5 25000 rpm | ≤0,003 | ISO 7388-2

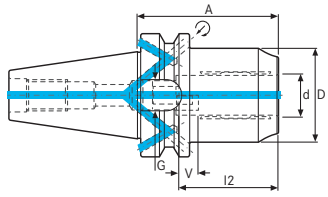
Application:
For high-precision and centric clamping of milling, drilling and reaming tools – particularly with milling and heavy-duty machining during rough machining.

Execution:
- With axial longitudinal adjustment
- Reducing sleeves for flexible applications
- Very high concentricity (< 3 µm)
- Coolant pressure up to 80 bar
- Heat-resistant up to 100°C

Advantage:
- Sturdy version ideal for HPC+HSC metal cutting
- Damping properties to increase tool duration and service life of machine spindle
- Vibration-damping effect reduces micro-cracks and improves the workpiece surface
- All common shanks can be clamped (Ø tolerance h6)
- Very high torque transfer (Ø 20 = 650 Nm)

Notes:
The previous standard DIN 69871-1 was replaced by ISO 7388-1.





Tool holding device	d (mm)	Projecting length (mm)	D (mm)	V (mm)	G	23733... Ident. No.	
BT 40	20	72.5	49	10	M16 x 1	740	●

Prod. Gr. 263

ATORN® Hydro-expansion chuck, type JD/JF (ISO 7388-2)

Short, heavy-duty design

BT 40 | BT 50 | IK | Form JD/JF | G 2,5 25000 rpm | ≤0,003 | ISO 7388-2

Application:
For high precision centric clamping of drilling, reaming and milling tools.

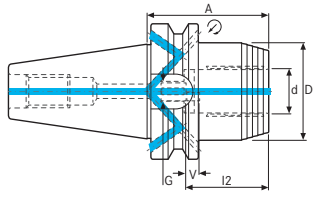
Execution:
- Concentricity tolerance < 0.003 mm
- With axial longitudinal adjustment
- Reducing sleeves for flexible applications
- Coolant pressure up to 80 bar
- Heat-resistant up to 50°C

Advantage:
- Vibration-damping effect reduces micro-cracks and improves workpiece surfaces
- Damping properties increase service life of tool and machine spindle
- High torque transfer (Ø 20 = 400 Nm/Ø 32 = 730 Nm)
- All common shanks can be clamped (Ø tolerance h6)

Delivery:
Tool holder with matching hex key

Notes:
The previous standard DIN 69871-1 was replaced by ISO 7388-1.





Tool holding device	d (mm)	Projecting length (mm)	D (mm)	V (mm)	G	23333... Ident. No.	
BT 40	20	72.5	49.5	10	M16 x 1	400	○
BT 50	32	90	72	10	M16 x 1	500	○

Prod. Gr. 263

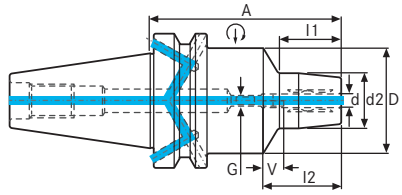
ATORN® Hydro expansion chuck (ISO 7388-2)

Short slimline design

BT 40 | BT 50 | IK | Form JD/JF | G 2,5 25000 rpm | ≤0,003 | ISO 7388-2

Execution:
- Coolant supply according to ISO 7388-2
- Type JD/JF





Tool holding device	d (mm)	Projecting length (mm)	D (mm)	L1 (mm)	l2 (mm)	V (mm)	G	23333... Ident. No.	
BT 40	6	90	49.5	29	37	10	M5	506	○
BT 40	8	90	49.5	30	37	10	M6	508	○
BT 40	10	90	49.5	35	41	10	M8 x 1	511	○
BT 40	12	90	49.5	40	46	10	M10 x 1	512	○
BT 40	14	90	49.5	40	46	10	M10 x 1	514	○
BT 40	16	90	49.5	45	49	10	M12 x 1	516	○
BT 40	18	90	49.5	46	49	10	M12 x 1	518	○
BT 40	20	90	49.5	47	51	10	M16 x 1	520	○
BT 40	25	90	52	50	57	10	M16 x 1	525	○
BT 40	32	90	62	48	61	10	M16 x 1	532	○
BT 50	6	90	49.5	29	37	10	M5	556	○
BT 50	8	90	49.5	30	37	10	M6	558	○
BT 50	10	90	49.5	34	41	10	M8 x 1	560	○
BT 50	12	90	49.5	34	46	10	M10 x 1	562	○
BT 50	14	90	49.5	34	46	10	M10 x 1	564	○
BT 50	16	90	49.5	35	49	10	M12 x 1	566	○
BT 50	18	90	49.5	35	49	10	M12 x 1	568	○
BT 50	20	90	49.5	35	51	10	M16 x 1	570	○
BT 50	25	110	63	48	57	10	M16 x 1	575	○
BT 50	32	110	70	50	61	10	M16 x 1	582	○

23333 506 = Prod. Gr. 263, 23333 508 = Prod. Gr. 263, 23333 511 = Prod. Gr. 263, 23333 512 = Prod. Gr. 263, 23333 514 = Prod. Gr. 263, 23333 516 = Prod. Gr. 263, 23333 518 = Prod. Gr. 263, 23333 520 = Prod. Gr. 263, 23333 525 = Prod. Gr. 263, 23333 532 = Prod. Gr. 263, 23333 556 = Prod. Gr. 263, 23333 558 = Prod. Gr. 263, 23333 560 = Prod. Gr. 263, 23333 562 = Prod. Gr. 263, 23333 564 = Prod. Gr. 263, 23333 566 = Prod. Gr. 263, 23333 568 = Prod. Gr. 263, 23333 575 = Prod. Gr. 263, 23333 582 = Prod. Gr. 263, 23333 570 = Prod. Gr. 287

ATORN® Hydro expansion chuck 3°, ultra-slim (ISO 7388-2)

3D-printed

BT 30 | BT 40 | IK | Form JD | Form JD/JF | G 2,5 25000 rpm | ≤0,003 | ISO 7388-2

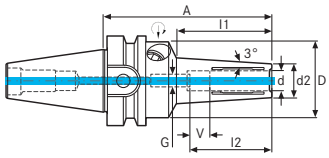
Application:
Produced using an innovative process, the ultra-slim Hydro expansion chuck combines the advantages of an expansion chuck and a shrink-fit chuck in a single product.

Execution:
- Extremely high heat resistance (up to 120°C) ensures that the chuck retains its accuracy
- Slimline design for a shrink-fit chuck, therefore suitable for narrow interfering contours
- Outstanding absorption
- Standard tool changes as with expansion chucks without requiring additional devices
- Various applications when used with reducer bushings
- Pre-balanced to G2.5/25,000 rpm
- With Balluff chip hole
- **No. 23333 703–23333 727, 23733 800–23733 803:**
  - Unusually high gripping forces
  - Max. concentricity < 0.003 mm
- **No. 23333 730–23333 734:**
  - Unusually high clamping forces
  - max. concentricity < 0.003 mm

Notes:
The previous standard JIS B 6339 MAS BT was replaced by ISO 7388-2.



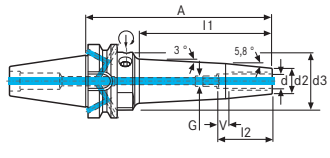
No. 23333 703–23333 712, 23333 730–23733 803



No. 23333 703–23333 712, 23333 730–23733 803



No. 23333 720–23333 727



No. 23333 720–23333 727

Tool holding device	d (mm)	Projecting length (mm)	d2 (mm)	D (mm)	l2 (mm)	l3 (mm)	V (mm)	G	23333... Ident. No.		23733... Ident. No.	
BT 30	3	85	10	-	28	45	16	M3	730	●	-	-
BT 30	4	85	12	-	28	45	12	M3	731	●	-	-
BT 30	5	85	13	-	28	45	8	M3	732	●	-	-
BT 30	6	85	14	-	37	46	10	M5	733	●	-	-
BT 30	8	85	16	-	37	46	10	M6	734	●	-	-
BT 40	3	120	9	49.5	28	70.5	16	M3	703	●	-	-
BT 40	4	120	10	49.5	28	70.5	12	M3	704	●	-	-
BT 40	5	120	11	49.5	28	71	8	M3	705	●	-	-
BT 40	6	120	12	49.5	37	71.9	10	M5	706	●	-	-
BT 40	8	120	14	49.5	37	72.4	10	M6	708	●	-	-
BT 40	10	120	16	49.5	41	72.9	10	M8 x 1	710	●	-	-
BT 40	12	120	18	49.5	46	73.4	10	M10 x 1	712	●	-	-
BT 40	6	160	-	49.5	-	-	10	M5	720	●	-	-
BT 40	6	200	-	49.5	-	-	10	M5	721	●	-	-
BT 40	8	160	-	49.5	-	-	10	M6	722	●	-	-
BT 40	8	200	-	49.5	-	-	10	M6	723	●	-	-
BT 40	10	160	-	49.5	-	-	10	M8 x 1	724	●	-	-
BT 40	10	200	-	49.5	-	-	10	M8 x 1	725	●	-	-
BT 40	12	160	-	49.5	-	-	10	M10 x 1	726	●	-	-
BT 40	12	200	-	49.5	-	-	10	M10 x 1	727	●	-	-
BT 40	14	120	22	49.5	46	71	10	M10 x 1	-	-	800	●
BT 40	16	120	24	49.5	49	71	10	M12 x 1	-	-	801	●
BT 40	18	120	26	49.5	49	72	10	M12 x 1	-	-	802	●
BT 40	20	120	28	49.5	51	72	10	M16 x 1	-	-	803	●

Prod. Gr. 263

ATORN® Shrink-fit chuck, slimline, 3 degrees (ISO 7388-2)

For mould making with minimum interference contour

BT 40 | Form JD/JF | IK | G 2,5 25000 rpm | ≤0,003 | ISO 7388-2

Application:

Ident. No. 303–320: For clamping milling tools and drill bits with straight shanks in h6 tolerance.

Suitable for heavy-duty cutting and all high-power applications.

Suitable for inductive, contact and hot air shrinking devices.

Execution:

- **Ident. No. 303–320:**
  - Guaranteed maximum concentricity 0.003 mm
  - For shrinking cemented carbide and HSS tools in and out
  - Hardness 52 + 2 HRC
  - Maximum coolant pressure 80 bar
  - Hole for Balluff chip
  - Glass bead blasted

Advantage:

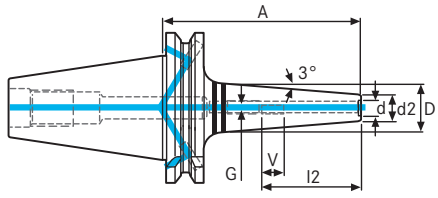
- **Ident. No. 303–320:**
  - Slimline design, extremely low interference contour
  - High transmittable torques
  - High positioning and repeat accuracy
  - Ideal for high rotation speeds

Notes:

Ident. No. 303–320: The previous standard JIS B 6339 MAS BT was replaced by ISO 7388-2.



Ident. No. 303–320



Ident. No. 303–320

Tool holding device	d (mm)	d2 (mm)	D (mm)	A (mm)	l2 (mm)	G	max. V (mm)	23427... Ident. No.	
BT 40	3	9	15	90	28	M6	16	303	●
BT 40	3	9	16	120	-	-	-	341	●
BT 40	3	9	19	160	-	-	-	342	●
BT 40	3	9	19	200	-	-	-	343	●
BT 40	4	10	16	90	28	M6	12	304	●
BT 40	4	10	17	120	-	-	-	344	●
BT 40	4	10	20	160	-	-	-	345	●
BT 40	4	10	20	200	-	-	-	346	●
BT 40	5	11	17	90	30	M6	10	305	●
BT 40	5	11	18	120	-	-	-	347	●
BT 40	5	11	21	160	-	-	-	348	●
BT 40	5	11	21	200	-	-	-	349	●
BT 40	6	12	18	90	36	M5	10	306	●
BT 40	6	12	21	120	36	M5	10	350	●
BT 40	6	12	24	160	36	M5	10	351	●
BT 40	6	12	24	200	36	M5	10	352	●
BT 40	8	14	20	90	36	M6	10	308	●
BT 40	8	14	23	120	36	M6	10	353	●
BT 40	8	14	26	160	36	M6	10	354	●
BT 40	8	14	26	200	36	M6	10	355	●
BT 40	10	16	22	90	41	M8 x 1	10	310	●
BT 40	10	16	25	120	41	M8 x 1	10	356	●
BT 40	10	16	28	160	41	M8 x 1	10	357	●
BT 40	10	16	28	200	41	M8 x 1	10	358	●
BT 40	12	18	24	90	47	M10 x 1	10	312	●
BT 40	12	18	27	120	47	M10 x 1	10	359	●
BT 40	12	18	30	160	47	M10 x 1	10	360	●

Tool holding device	d (mm)	d2 (mm)	D (mm)	A (mm)	l2 (mm)	G	max. V (mm)	23427... Ident. No.	
BT 40	12	18	30	200	47	M10 x 1	10	361	●
BT 40	14	20	26	90	47	M10 x 1	10	314	●
BT 40	14	20	29	120	47	M10 x 1	10	362	●
BT 40	14	20	32	160	47	M10 x 1	10	363	●
BT 40	14	20	32	200	47	M10 x 1	10	364	●
BT 40	16	22	28	90	50	M12 x 1	10	316	●
BT 40	16	22	31	120	50	M12 x 1	10	365	●
BT 40	16	22	34	160	50	M12 x 1	10	366	●
BT 40	16	22	34	200	50	M12 x 1	10	367	●
BT 40	18	24	30	90	50	M12 x 1	10	318	●
BT 40	18	24	33	120	50	M12 x 1	10	368	●
BT 40	18	24	36	160	50	M12 x 1	10	369	●
BT 40	18	24	36	200	50	M12 x 1	10	370	●
BT 40	20	26	32	90	52	M16 x 1	10	320	●
BT 40	20	26	35	120	52	M16 x 1	10	371	●
BT 40	20	26	38	160	52	M16 x 1	10	372	●
BT 40	20	26	38	200	52	M16 x 1	10	373	●

Prod. Gr. 287

ATORN® HYDRO expansion extension

Flexible adaption with cylindrical shaft

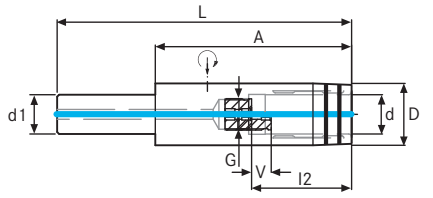
IK | G 2,5 25000 rpm | ≤0,006



Application:
Highly flexible extension for HYDRO expansion and collet. For high precision centric clamping of milling, drilling and reaming tools.

Execution:
- Fast tool change and also axial length adjustment
- Can be clamped with all standard shank diameters (h6)
- central coolant supply, ICS, up to 80 bar

Advantage:
- Outstanding damping properties
- Wide clamping range thanks to use of intermediate sleeves
- High torque transfer (Ø 12 = 80 Nm/Ø 20 = 330 Nm)
- Very good accessibility thanks to minimal interference contour
- flexible thanks to the use of intermediate bushes



d (mm)	d1 (mm)	D (mm)	L (mm)	A (mm)	l2 (mm)	max. V (mm)	23338... Ident. No.	
12	20	25	150	100	46	10	110	●
20	20	31.5	150	100	51	10	111	●
20	32	31.5	150	90	51	10	112	○
20	32	31.5	200	90	51	10	113	●

Prod. Gr. 263

ATORN® Shrink-fit extensions with internal cooling

With cylindrical shaft

IK | ≤0,003

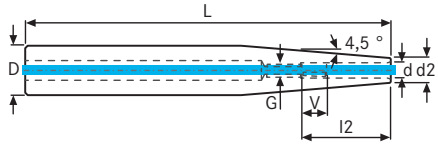


Application:
For extending and reducing to smaller diameters.

Execution:
- With 4.5 ° angle

- Clamping diameter for shaft tolerance h 6
- workpiece stop screw with 10 mm adjustment travel

Notes:
Other lengths upon request.



d (mm)	D (mm)	d2 (mm)	L (mm)	max. l2 (mm)	min. l2 (mm)	g	23431... Ident. No.	
3	12	8	150	-	-	-	603	○
3	16	10	150	-	-	-	607	○
3	20	10	150	-	-	-	612	○
3	25	-	150	-	-	-	633	○
4	12	8	150	-	-	-	604	○
4	16	10	150	-	-	-	608	○
4	20	10	150	-	-	-	613	○
4	25	-	150	-	-	-	634	○
5	12	10	150	-	-	-	605	○
5	16	10	150	-	-	-	609	○
5	20	10	150	-	-	-	614	○
5	25	-	150	-	-	-	635	○

d (mm)	D (mm)	d2 (mm)	L (mm)	max. l2 (mm)	min. l2 (mm)	g	23431... Ident. No.	
6	12	10	150	36	26	M5	606	○
6	16	10	150	36	26	M5	610	○
6	20	10	150	36	26	M5	615	○
6	25	-	150	36	26	M5	636	○
6	32	20	150	36	26	M5	642	○
8	16	12	150	36	26	M6	611	○
8	20	12	150	36	26	M6	616	○
8	25	-	150	36	26	M6	637	○
8	32	20	150	36	26	M6	643	○
10	20	14	150	42	32	M8 x 1 mm	617	○
10	25	-	150	42	32	M8 x 1 mm	638	○
10	32	22	150	42	32	M8 x 1 mm	644	○
12	20	16	150	47	37	M10 x 1 mm	618	○
12	25	-	150	47	37	M10 x 1 mm	639	○
12	32	20	150	47	37	M10 x 1 mm	645	○
14	25	20	150	47	37	M10 x 1 mm	640	○
14	32	20	150	47	37	M10 x 1 mm	646	○
16	32	20	150	50	37	M10 x 1 mm	641	○
16	32	27	150	47	37	M10 x 1 mm	647	○
18	32	27	150	50	40	M10 x 1 mm	648	○
20	32	27	150	52	42	M10 x 1 mm	649	○

Prod. Gr. 287

ATORN® pull stud for steep taper DIN 69872 shape A (DIN 69872)

steep taper to DIN 69871 with bore for IK

IK

Application:
for tools with steep taper in accordance with ISO 7388-1 (old standard was DIN 69871) and ISO 7388-2 (old standard was JIS B 6339 MAS-BT)

Execution:
- All pull studs made from material 16Mn Cr5

- Case-hardened HRC 58 ± 2
- Soft, bronzed and ground thread and bore hole
- Pull studs with o-ring = sealed

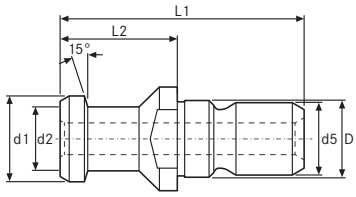
Notes:
Further versions available on request (specification of machine types required)



No. 23690



No. 23692
DIN 69872
23690130 and 23962130 without o-ring, other items with o-ring



Suitable for tool holding device	Form	d1 (mm)	d2 (mm)	D (mm)	d5	L1 (mm)	Coolant supply	Angle (Degree)	L2 (mm)	DIN 69872 23690... Ident. No.		DIN 69872 23692... Ident. No.	
SK 30	A	13	9	13	M12	44	Yes	15	24	130	●	-	-
SK 40	A	19	14	17	M16	54	Yes	15	26	140	●	-	-
SK 50	A	28	21	25	M24	74	Yes	15	34	150	●	-	-
SK 30	B	13	9	13	M12	44	No	15	24	-	-	130	●
SK 40	B	19	14	17	M16	54	No	15	26	-	-	140	●
SK 50	B	28	21	25	M24	74	No	15	34	-	-	150	●

Prod. Gr. 263

ATORN® pull stud for steep taper ISO 7388-2 B (ISO 7388-2 B)

for steep taper to DIN 69871

IK

Application:
for tools with steep taper in accordance with ISO 7388-1 (old standard was DIN 69871) and ISO 7388-2 (old standard was JIS B 6339 MAS-BT)

Execution:
- all pull studs made from material 16Mn Cr5
- Case-hardened HRC 58 ± 2
- Soft, bronzed and ground thread and bore hole
- Pull studs with o-ring = sealed

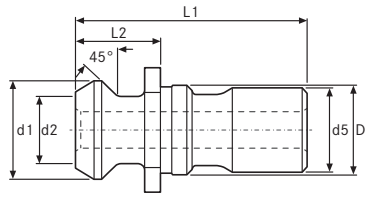
Notes:
Further versions available on request (specification of machine types required)



No. 23690



No. 23692



Suitable for tool holding device			SK 40	SK 50	SK 40	SK 50
Form			B	B	B	B
d1 (mm)			18.95	29.1	18.95	29.1
d2 (mm)			12.95	19.6	12.95	19.6
D (mm)			17	25	17	25
d5			M16	M24	M16	M24
L1 (mm)			44.5	65.5	44.5	65.5
Coolant supply			Yes	Yes	No	No
L2 (mm)			16.25	25.55	16.25	25.55
	ISO					
23690...	7388-2 B	Ident. No.	**240** ●	**250** ●	-	-
23692...	7388-2 B	Ident. No.	-	-	**240** ●	**250** ●

Prod. Gr. 263

ATORN® pull stud for steep taper ISO 7388-2 B/MAS BT JIS B 6339, 45° (ISO 7388-2 B)

for steep taper to JIS B 6339 MAS BT

IK

Application:
for tools with steep taper in accordance with ISO 7388-2 (old standard was JIS B 6339 MAS-BT)

Execution:
- Material 16MnCr5
- Case-hardened HRC 58 ± 2
- **No. 23690:** Pull studs without O-ring are SK 30
- **No. 23692:**
  - pull stud without O-ring are SK 30
  - Without hole

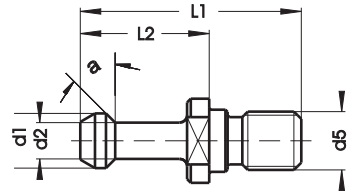
Notes:
No. 23690: The previous standard JIS B 6339 MAS BT was replaced by ISO 7388-2.
No. 23692: The previous standard 69871-1 was replaced by ISO 7388-1. The previous standard JIS B 6339 MAS BT was replaced by ISO 7388-2.



No. 23690



No. 23692
MAS BT 45° JIS 6339



Suitable for tool holding device	d1 (mm)	d2 (mm)	d5	L1 (mm)	Coolant supply	Angle (Degree)	L2 (mm)	ISO 7388-2 B **23690...** Ident. No.		7388-2 B **23692...** Ident. No.	
SK 30	11	7	M12	43	Yes	45	23	**435**	●	-	-
SK 40	15	10	M16	60	Yes	45	35	**445**	●	-	-
SK 50	23	17	M24	85	Yes	45	45	**455**	●	-	-
SK 30	11	7	M12	43	No	45	23	-	-	**435**	●
SK 40	15	10	M16	60	No	45	35	-	-	**445**	●
SK 50	23	17	M24	85	No	45	45	-	-	**455**	●

Prod. Gr. 263

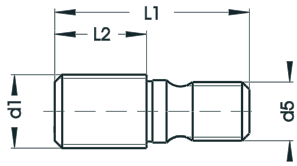
ATORN® saw threaded bolt SK40 S20x2 for cover

Application:
For attaching collets

Execution:
- Case-hardened



Buttress thread



Suitable for tool holding device	d5	d1	L1 (mm)	Coolant supply	L2 (mm)	23690... Ident. No.	
SK 40	M16	S20 x 2	53	No	25	011	●

Prod. Gr. 263

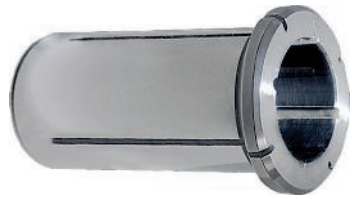


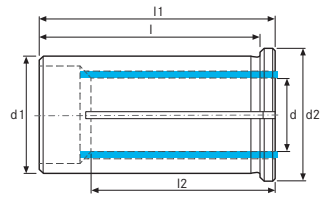
ATORN® Reducing sleeve with KKB

With cooling canal along the location hole

Application:
For reducing the clamping diameter. For drilling, reaming, milling and tool sharpening.

Execution:
- Slotted and polished
- Concentricity tolerance ≤ 3µm
- Concentricity tolerance ≤ 3µm





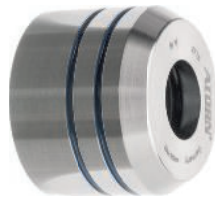
		Collar Ø d2 (mm)	16		25		36	
		Insert depth l (mm)	40		50		60	
		Length L1 (mm)	44		54		64	
		Coolant supply	KKB		KKB		KKB	
Clamping Ø d (mm)	Chuck clamping Ø d1 (mm)	Insertion depth l2 (mm)	23336... Ident. No.		23336... Ident. No.		23336... Ident. No.	
3	12	29	601	●	-	-	-	-
4	12	29	602	●	-	-	-	-
5	12	29	603	●	-	-	-	-
6	12	36	604	●	-	-	-	-
8	12	37	605	●	-	-	-	-
3	20	28	-	-	611	●	-	-
4	20	28	-	-	612	●	-	-
5	20	28	-	-	613	●	-	-
6	20	36	-	-	614	●	-	-
8	20	37	-	-	615	●	-	-
10	20	40	-	-	616	●	-	-
12	20	45	-	-	617	●	-	-
14	20	45	-	-	618	●	-	-
16	20	48	-	-	619	●	-	-
6	32	36	-	-	-	-	620	●
8	32	36	-	-	-	-	621	●
10	32	40	-	-	-	-	622	●
12	32	45	-	-	-	-	623	●
14	32	46	-	-	-	-	624	●
16	32	48	-	-	-	-	625	●
18	32	49	-	-	-	-	626	●
20	32	50	-	-	-	-	627	●
25	32	56	-	-	-	-	628	●

Prod. Gr. 263

ATORN® Standard precision clamping nut

Application:
For clamping the Atorn precision chuck.

Execution:
- Spare parts for the ATORN precision collet no. 23361 001-011 and 23761 001-011





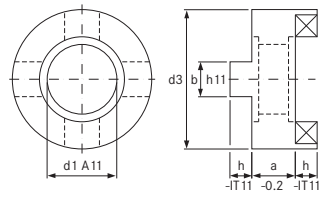
Suitable for clamping nut type		HPE 16	HPE 25	HPE 32
Suitable for collet type		ER 16/426E	ER 25/430E	ER 32/470E
D (mm)		30	40	50
23361...	Ident. No.	**101**	**102**	**103**
		●	○	●

Prod. Gr. 263

ATORN® Standard driving rings (DIN 6366)
For combined shell end mill arbours

Execution:
- Hardened, at least 56 HRC
- Parallelism of surfaces a = 0.004 mm, polished
- Case-hardening steel with tensile strength at core of at least 800 N/mm after case hardening





d1 (mm)	d3 (mm)	a (mm)	h (mm)	b (mm)	**23200...** Ident. No.	
16	32	10	5	8	**020**	●
22	40	12	5.6	10	**030**	●
27	48	12	6.3	12	**040**	●
32	58	14	7	14	**050**	●
40	70	14	8	16	**060**	●

Prod. Gr. 206

ATORN® Synchronous tapping chucks

For machine tools with synchronous control

SK 40 | SK 50 | HSK 63 | Form AD | Form A | IK

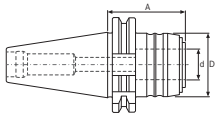
Application:
For thread cutting on machine tools with synchronous spindles. With rigidly clamped screw taps, pitch errors cause high axial forces that can be compensated for by synchronous tapping chucks through minimal length compensation under pressure and tension.

Execution:
- Clamping screws to secure against rotation of the clamped screw tap
- thread-cutting quick-change chuck for synchronous spindles
- **Ident. No. 341–352:** pitch errors are compensated for with minimal length compensation of 1.0 mm under tension and 0.2 mm under pressure
- **Ident. No. 361–372:** Pitch errors are compensated for with minimal length compensation of 1.0 mm under tension and 0.2 mm under pressure
- **Ident. No. 371–372:** straight shank similar to DIN 1835 B+E

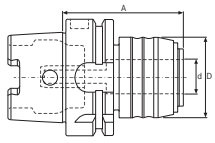
Advantage:
- Secure clamping in quick-change inserts for ER collet chucks
- **Ident. No. 341–362:** Increased tool service life
- **Ident. No. 371–372:** increased tool service life

Notes:
accessories required:
quick-change insert, 1- and 2-part, no. 21556316-525
ER-type collet chuck for thread cutting, no. 23320600-691

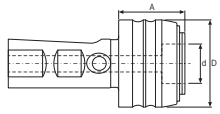

Ident. No. 341–352


Ident. No. 341–352


Ident. No. 361–362


Ident. No. 361–362


Ident. No. 371–372


Ident. No. 371–372

Tool holding device	SK 40	SK 40	SK 50	SK 50	HSK 63	HSK 63	Cylinder shank	Cylinder shank
ISO	7388-1	7388-1	7388-1	7388-1	-	-	-	-
DIN	-	-	-	-	69893-1	69893-1	-	-
Used sizes	1	2	1	2	1	2	1	2
Collet type	ER 16	ER 25	ER 16	ER 25	ER 16	ER 25	ER 16	ER 25
Suitable for thread	M3-M12	M6-M20	M3-M12	M6-M20	M3-M12	M6-M20	M3-M12	M6-M20
A (mm)	53	90	53	74	64	97	34	56
D (mm)	43	60	43	60	43	60	43	60
Adapter Ø (mm)	-	-	-	-	-	-	25	25
d (mm)	20	32	20	32	20	32	20	32
Form	AD	AD	AD	AD	A	A	-	-
Pressure length compensation (mm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Tension length compensation (mm)	1	1	1	1	1	1	1	1
Coolant supply	Internal axial	Internal axial	Internal axial	Internal axial	Internal axial	Internal axial	Internal axial	Internal axial
21555... Ident. No.	341	342	351	352	361	362	371	372
	●	●	●	○	●	●	●	●

Prod. Gr. 225

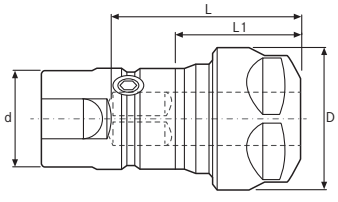
ATORN® 1-part quick-change insert

Accessories for synchronous tapping chuck no. 21555

Application:
for accommodating screw taps, see screw tap collet chucks, ER type, no. 23320600-691

Notes:
Ref. no. 316, 516 with hexagon nut. Compatible collet chucks type ER for thread cutting, no. 21575





Used sizes	1	2
Collet type	ER 16	ER 25
Min./max. clamping range	2-10 mm	2-16 mm
Suitable for thread	M3-M12	M6-M20
L1 (mm)	37	52
L (mm)	24	28
D (mm)	28	42
d (mm)	20	32
21556... Ident. No.	316	325
	●	●

Prod. Gr. 225

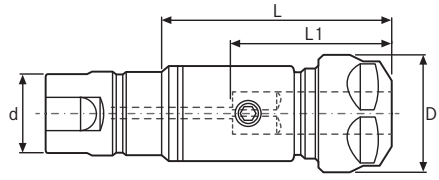
ATORN® 2-part quick-change insert

Accessories for synchronous tapping chuck no. 21555

Application:
for accommodating screw taps, see screw tap collet chucks, ER type, no. 23320600-691

Notes:
Ref. no. 516, 525 with hexagon nut. Compatible collet chucks type ER for thread cutting, no. 21575





Used sizes	Collet type	Min./max. clamping range	Suitable for thread	L1 (mm)	L (mm)	D (mm)	d (mm)	21556... Ident. No.	
1	ER 16	2-10 mm	M3-M12	38	55	28	20	516	●
2	ER 25	2-16 mm	M6-M20	63	84	42	32	525	○

Prod. Gr. 225

ATORN® Extensions for 2-part synchronous quick-change chuck.

Accessories for 21556516-525

Application:
Extensions for 2-part synchronous quick-change chuck.

Notes:
the appropriate two-part quick-change insert 21556516 or 21556525 will be required to use extensions 21566616-725.



Extension



Example application

Used sizes			1	1	2	2
Collet type			ER 16	ER 16	ER 25	ER 25
Min. clamping range (mm)			2	2	2	2
Max. clamping range (mm)			10	10	16	16
D (mm)			23	23	35	35
L (mm)			25	50	50	100
ATORN	21556...	Ident. No.	616	625	716	725
			○	●	○	○

Prod. Gr. 225

ATORN® Thread cutting machine

Vertical and horizontal thread cutting

Application:
For the creation of threads and for other mechanical operations.
Easy to use with a variety of possible adjustments

Execution:
- electrically driven motor, 220V
- for vertical and horizontal thread cutting
- manual speed control by means of a potentiometer
- operation with standard quick-change inserts
- thread cutting performance: steel M2 - M14
- thread cutting performance: aluminium M2 - M16
- automatic tool lubrication and pneumatic version available on request
- supplied with basic tool adapter, articulated arm for vertical thread cutting, swivel adapter for horizontal thread cutting. (please order quick-change inserts separately)
- workspace height 565mm
- workspace radius 75mm to 885mm

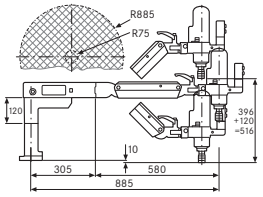
Advantage:
- price/performance ratio

Delivery:
With basic tool holder. Articulated arm and swivel adapter for vertical and horizontal thread cutting.
Please order quick-change inserts separately

Notes:
recommended accessory ref. no. 21616002, fastening clip for fixing the table.
quick change inserts, size 1/D=Ø19 mm, ref. no. 21566130 21566160 with safety coupling



Ident. No. 001





Ident. No. 002

Min./max. rotation speed		300-600 U/ min(rpm)	-
Max. torque (Nm)		34	-
Nominal voltage		220	-
Type		-	Fastening clip for table fixing
Min./max. rotation speed		300-600 U/ min(rpm)	-
Max. torque (Nm)		34	-
Nominal voltage		220	-
Type		-	Fastening clip for table fixing
21616...	Ident. No.	**001**	**002**
		○	●

ATORN® CNC precision chuck, DIN 228-B

With internal cooling, side coolant connection

IK R/L

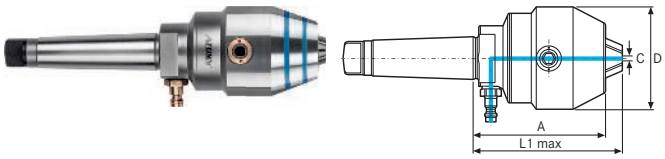
Application:
For use on conventional lathes and CNC machines for drilling, reaming, countersinking.

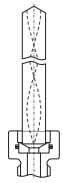
Execution:
- Morse taper in accordance with DIN 228-B
- Integrated spur gear ensures high retaining torque
- glass bead blasted

Advantage:
- Wear parts hardened and polished for long service life
- Remains securely clamped even with sudden spindle stop

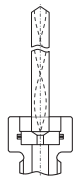
Delivery:
Drill chuck with sealing washer (Ø 5 mm) incorporated in the drill chuck head, for coolant drill Ø 8-16 mm with smooth shaft in accordance with DIN 6535, sealing washer type (Ø 2 mm) included in the scope of delivery, for coolant drill Ø 2.5-8 mm with smooth shaft in accordance with DIN 6535, type HA.

Notes:
this precision drill chuck is designed for use on lathes in fixed tailstocks (drill chuck does not rotate)





Sealing washer ATORN 16 (Ø 4.2 mm)



Sealing washer ATORN 16 (Ø 2.05 mm)

MK	d1	D (mm)	A (mm)	L1 max. (mm)	21329... Ident. No.	
MK 3	0.5-16 mm	57	104	110	500	●
MK 4	0.5-16 mm	57	109	115	501	●
MK 5	0.5-16 mm	57	111	117	502	●

Prod. Gr. 208



ATORN® Tool mounting device

1 system for all options

Application:
For mounting and removing tools of all kinds and in up to eight different positions.

Execution:
- Quick-change assembly system for all assembly systems without additional tools
- Effortless and tool-safe assembly of tools
- Can be swivelled and indexed to allow the optimal working position to be reached
- Exchangeable brass inserts to prevent wear on tool shanks

Advantage:
- Accident-proof and convenient
- Minimal space usage
- Shortens tooling time

Notes:
Tool chucks for tool mounting device ref. no. 23912130-550







Swivelling		4 x 90°	8 x 45°
23912...	Ident. No.	**010**	**020**
		●	●

Prod. Gr. 280

ATORN® Tool chuck holder for tool mounting device no. 23910 010-020

1 system for all options

Application:
For holding tool mounting device no. 23910 010-020.

Notes:
The previous standard JIS B 6339 MAS BT was replaced by ISO 7388-2.


Ident. No. 130–150


Ident. No. 240–300, 463


Ident. No. 304–308


Ident. No. 530–550

ISO		7388-2	7388-2	7388-2	-	-	-	26623-1	26623-1
Standard shank design		MAN 69871-1 | JIS B 6339 MAS BT	MAN 69871-1 | JIS B 6339 MAS BT	MAN 69871-1 | JIS B 6339 MAS BT	MAN 69880-1	MAN 69880-1	MAN 69880-1	-	-
Suitable for tool holding device		SK 40	SK 50	SK 30	VDI 50	VDI 40	VDI 30	Capto C4	Capto C5
23912...	Ident. No.	**140**	**150**	**130**	**550**	**540**	**530**	**304**	**305**
		●	●	●	○	●	●	○	○
ISO		26623-1	26623-1	-	-	-	-	-	-
Standard shank design		-	-	MAN 69893-1	MAN 69893-1	MAN 69893-1	MAN 69893-1	MAN 69893-1	-
Suitable for tool holding device		Capto C6	Capto C8	HSK A40	HSK A50	HSK A63	HSK A80	HSK A100	KM 63
23912...	Ident. No.	**306**	**308**	**240**	**250**	**263**	**280**	**300**	**463**
		●	●	●	●	●	●	●	○

Prod. Gr. 280

ATORN® 3D edge finder

With dial gauge

SK 40

Application:
Suitable for defining and setting workpiece reference points in all 3 axes (X, Y and Z) on all milling machines and machining centres. The workpiece is measured in any direction with the measuring probe until both indicators are at '0'.

Execution:
- Direct path measurement along Z axis, can be used vertically and horizontally, concentricity can be readjusted via 4 screws
- Nominal breaking point on the measuring probe prevents damage to the workpiece or dial gauge
- IP 67 degree of protection: temporary immersion in water possible and dust-proof according to DIN EN 60529

Advantage:
- Metallic housing with very good visibility of readings
- Can be used with all tool and eroding machines
- Easy reading off of actual value

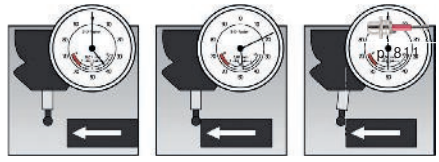
Delivery:
Including short finder insert ref. no. 23924004



Ident. No. 010



Ident. No. 020



Tool holding device	Clamping shank Ø (mm)	Probe head Ø (mm)	Housing width (mm)	Meter Ø (mm)	Scale value (mm)	Sensor insert length (mm)	Repeat accuracy (+/-) (mm)	IP protection class	23924... Ident. No.		23924... Ident. No.	
-	20	4	65	57	0.01	33	0.01	IP 67	010	●	-	-
SK 40	-	4	65	57	0.01	33	0.01	IP 67	-	-	020	●

Prod. Gr. 234

ATORN® Probe insert

Replacement parts for 3D edge finder, ref. no. 23924 010-020

Execution:
- Nominal breaking point on measuring probe prevents damage to 3D edge finder
- Short version ref. no. 23924004
- Long version ref. no. 23924008



Ident. No. 004



Ident. No. 008

Probe head Ø (mm)		4	8
Sensor insert length (mm)		33	75
Repeat accuracy (+/-) (mm)		0.01	0.01
23924...	Ident. No.	004	008
		●	●

Prod. Gr. 234

technical introduction – tool presetters
success is a matter of adjustment – increase productivity with the right settings






ATORN tool presetters save time and money, putting you an extra step ahead of the competition. your tools are set and measured while your machine is producing metal chips — so there's no downtime.

the right tool is what counts
precisely measured tools, optimised machine operating times and a longer service life for tools increase the output of your production facility by at least 15 per cent. ATORN tool presetters pay for themselves quickly, easy to operate, gentle on your budget and big on performance.

simple!
- the ATORN concept: the user is the most important thing when it comes to working efficiently day in, day out
- state-of-the-art image processing makes tool presetting easy
- fast training thanks to an intuitive ATORN operating concept

exactly!
- image processing system with dynamic crosshair for contact-free and accurate tool measurement, regardless of the operator
- brand quality such as Bosch pneumatics, THK guides, Heidenhain glass scales provide accuracy and a long, maintenance-free service life
- tool chuck spindle SK 50 with high levels of repeatability and integrated calibration edges

economical!
- three-in-one: measure, adjust and check tools
- supplied as a complete package with support table, adapters and utensil storage, label printers
- "Made in Germany" quality at an unbeatable price/performance ratio
- worldwide service

	scratching	scriber	laser	projector	ATORN
investment	✔	✔	–	■	✔
machine operating time	–	✔	–	✔	✔
repeatability	–	–	✔	■	✔
measurable parameters	–	–	■	–	✔
process reliability	–	–	✔	■	✔
cost of measurements	–	–	✔	■	✔
written measurement report	–	–	–	■	✔
tool inspection	–	–	–	–	✔
conclusion	uneconomical, high risk of tool damage	low purchasing cost, but unsuitable for measuring and setting tools	high purchasing costs as each machine requires a separate laser	outdated technology, a setting device with image processing is required for new purchases	higher profitability thanks to reliable manufacturing quality, longer machine operating times, optimised service life and less waste

✔ standard ■ optional – not available

what are the benefits of setting tools correctly with ATORN presetters?
- increase your production quality
- optimised machine running time
- efficient processes around the tool
- no waste
- increased tool life
- can be used directly in production



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN tool presetters in detail

simple and fast:
time-consuming fine tuning is a thing of the past. the dynamic crosshair moves to the tool cutting edge and measures automatically in the entire camera image.

reliably accurate results:
with projector technology, the measurement results are dependent on the operator. different from EZset! the results are accurate, reproducible and reliable, regardless of the user.

effective and economical:
three-in-one! rapid tool measurement, setting and testing – right next to your CNC machines.



① device tower with 3 guides in 3 variants
② one-handed operating handle
③ centre-turning measuring device (option)
④ membrane keyboard (360° brake, 4 x 90° indexing, vacuum (option))
⑤ under-table
⑥ image processing with CCD camera and integrated incident light power LEDs
⑦ tool chuck spindle SK 50
⑧ ImageController image processing in 4 variants
⑨ label printer
⑩ utensil storage
⑪ basic body with 2 guides in 3 variants

EZclick: ImageControllerbasic

operate the ICbasic image processor using the EZclick rotary/push button. use EZclick to activate the menus on the 7" monitor and select and confirm functions at the touch of a button. graphic symbols help you when using the tool presetter.



EZpush: ImageController1

the IC1 image processor is easy to operate using the EZpush 13.3" touchscreen monitor. you can quickly and conveniently select and confirm all the functions of the tool presetter via a graphic menu.



EZtouch: ImageController2

the IC2 image processor features an EZtouch 13.3" or 24" touchscreen monitor for convenient and intuitive operation. clear graphics on the function buttons enable standard measuring processes to be performed quickly and easily.



EZslide: ImageController3

modern, user-friendly and individually configurable IC3 image processor with EZslide 17" touchscreen operation: the innovative user interface can be adapted to the specific user
using the touch and slide function.



overview: tool presetters

Function	Description	ICbasic	IC1	IC2	IC3
operation/features					
EZclick	Menu operation via a rotary/push button	✔	–	–	–
EZtouch	Menu operation via touchscreen	–	✔	✔	✔
EZslide	Window areas moved via touchscreen	–	–	–	✔
Monitor	TFT colour monitor	7.0 inch	13.3 inch	13.3 inch or 24 inch	17.0 inch
Operating system	Operating system of the measuring device control system	Linux	Windows 10	Windows 10	Windows 10
Device design					
Spindle	SK 50 tool holding spindle	✔	✔	✔	✔
Pneum. spindle functions	4 x 90° indexing, 360° spindle brake	■	✔	✔	✔
Under-table	Under-table in sturdy industrial design	■	✔	✔	✔
Label printer	Thermal label printer	■	✔	✔	✔
Adapter shelf	For storing adapters	■	✔	✔	✔
Options					
Vacuum spindle	Tool holding spindle, SK 50 vacuum	■	■	■	■
universal spindle for power-operated tool clamping	Power-operated universal tool holding spindle	–	■	■	■
Adapters	Standard selection, other adapters on request	■	■	■	■
Adapter shelf	Additional adapter shelves as required	■	■	■	■
EZprotection/ EZspindle-protection	Cover hoods for protecting against dust and dirt	■	■	■	■
EZmaintain	Conditioning unit for preparing compressed air for the device	■	■	■	■
EZturn	Rotation centre measurement with monochrome camera	–	–	■	■
Autofocus	Automatic focus of the tool cutting edge	–	■	■	■
Software functions					
Dynamic crosshair	Dynamic crosshair for automatic measurement	✔	✔	✔	✔
Cutting edge shape detection	Automatic cutting edge shape detection	✔	✔	✔	✔
Cutting edge inspection	Magnification of the cutting edge in incident light for quality control	■ 12x	✔ 20x	✔ 20x 13.3 inch / 38x 24 inch	✔ 28x
Multi-cutter	Software function for concentricity and axial runout for multi-cutting edge tools	✔	✔	✔	✔
EZmax	Software function for determining and measuring the tool contour	✔	✔	✔	✔
Zero point monitoring	safety prompt for adapter zero points for preventing a machine crash	✔	✔	✔	✔
EZstart	Software function for quickly measuring standard tools	–	✔	✔	✔
Adapter management	Saving and managing adapter zero points	✔ 99	✔ 99	✔ 99	✔ 999
Tool management	Saving tool data	■	✔	✔	✔ 15000
Online help	Integrated help texts	✔	✔	✔	✔
EZnavigator	compass needle – simple camera positioning for measuring set values on the tool	■	✔	✔	✔
Graphics library	Graphic display of the tools	–	–	■	✔
Tooling sheets	Create and save tool lists	–	–	■	■
Projector function	Conversion to projector function with crosshair	■	✔ Positionable	✔ Positionable	✔ Positionable
Data output					
Label printing	Output of thermal labels	■	✔	✔	✔
List print	Output of e.g. A4 reports	–	✔	✔	✔
USB	USB-2.0 interfaces, data output via USB	✔ 1 piece	✔ 4 pieces	✔ 4 pieces	✔ 4 pieces
LAN/network	Data output via network connection	–	–	■	■
COM/serial	data output via RS232 interface	✔	✔	✔	✔
control-specific to the CNC machine	output of measurement values and tool data suitable for machines from the IC2/IC3 tool management on the CNC machine	–	–	■	■
control-specific into the network	software for tool management and for transmitting measured values to the network via separate, customer PC	■	■	■	■

✔ standard ■ optional – not available

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® ImageController Basic tool presetter

Application:
The ATORN ImageController Basic presetter with great features for excellent value for money. Adjust your tools quickly, easily and to the nearest µm. Presetters are able to withstand the rigours of workshop use and can be set up directly next to CNC machines in machining and testing centres or in measurement rooms. All important basic functions for measuring your tools, such as length, diameter, flatness and concentricity come as standard. A dynamic crosshair pointer detects and measures tool cutters automatically within the entire camera image.

Execution:
- high-precision spindle, SK 50
- 7 inch screen
- memory for 99 adapter tools
- automatic zero point monitoring
- automatic cutting edge shape detection
- quick menu operation via a rotary/push button
- compass needle – simple camera positioning for measuring set values on the tool
- dynamic crosshair for automatic measurement
- USB 2.0 interface, data output via USB

Advantage:
- simple operation and fast familiarisation with minimum training
- Fast measurement, setting and testing of tools (length and diameter)
- fast and convenient printing of measurement results
- EZmax software function for easy creation of tool contour
- Various measurement programs are available, such as concentricity check on the tool shank, projector mode, etc.

Notes:
price: plus shipping and packaging
suitable cabinet workbench for ATORN basic presetter, ref. no. 50199251 light grey unit 7035, multiplex beech worktop length 1500 mm, worktop depth 750 mm, working height 840 mm with 5 drawers and partial extension, anthracite grey front 7016





Type	Measuring range of Z axis (mm)	Measuring range of X axis (mm)	Repeat accuracy (+/-) (mm)	Concentricity tolerance (mm)	Compressed air supply (bar)	Max. screen slant (in)	23961... Ident. No.	
ATORN 350 with ICbasic	350	320	0.002	0.002	6	7	211	(○)+
ATORN 420 with ICbasic	420	420	0.002	0.002	6	7	212	(○)+
ATORN 600 with ICbasic	600	420	0.002	0.002	6	7	213	(○)+

Prod. Gr. 2AD

ATORN® ATORN ImageController1 tool presetter

Application:
The ATORN ImageController1 presetter with great features for excellent value for money. Adjust your tools quickly, easily and to the nearest µm. Presetters are able to withstand the rigours of workshop use and can be set up directly next to CNC machines in machining and testing centres or in measurement rooms. All important basic functions for measuring your tools, such as length, diameter, angle, radius, concentricity and axial runout come as standard. A dynamic crosshair pointer detects and measures tool cutters automatically within the entire camera image.

Execution:
- high-precision spindle, SK 50
- under-table in sturdy industrial design
- 4 x 90° indexing, 360° spindle brake
- memory for 99 adapter tools and 3000 tools
- Simple operation using 13.3-inch vertical touchscreen monitor
- automatic cutting edge detection and zero point monitoring
- USB 2.0 interface, data output via USB. output of thermal labels
- compass needle – simple camera positioning for measuring set values on the tool
- dynamic crosshair for automatic measurement
- power-operated tool clamp (optional)

Advantage:
- Fast measuring and adjusting of tools via EZstart (picture book)
- 20x magnification of the cutting edge in incident light for quality control
- EZnavigator compass needle – simple camera positioning for measuring set values on the tool
- magnification of the cutting edge in incident light for quality control, 12x
- USB 2.0 interface, data output via USB

Notes:
price: plus shipping and packaging





Type	Measuring range of Z axis (mm)	Measuring range of X axis (mm)	Repeat accuracy (+/-) (mm)	Concentricity tolerance (mm)	Compressed air supply (bar)	Max. screen slant (in)	23961... Ident. No.	
ATORN 350 with IC1	350	320	0.002	0.002	6	13.3	214	(○)+
ATORN 420 with IC1	420	420	0.002	0.002	6	13.3	215	(○)+
ATORN 600 with IC1	600	420	0.002	0.002	6	13.3	216	(○)+
ATORN 600/570 with IC1	600	570	0.002	0.002	6	13.3	217	(○)+

Prod. Gr. 2AD

ATORN® ATORN ImageController2 tool presetter

Application:
ATORN ImageController2 presetter, professional entry-level model providing high quality equipment and unbeatable value for money. Adjust your tools very quickly, easily and with µm-accuracy. The sturdy presetter is able to withstand the rigours of workshop use and can be set up directly next to CNC machines in machining and testing centres or in measurement rooms. The ATORN Image-Controller2 provides the main functions for your application scenarios, such as measuring the length, diameter, radius, angle, contours, concentricity and axial runout of your standard tools. A dynamic crosshair pointer detects and measures tool cutters automatically within the entire camera image. The user is notified if the preset tolerance is exceeded and the current zero point is indicated before every measuring operation to avoid machine crashes, tool breakages and part rejects. The results are accurate, reproducible and reliable. In addition to the measurement functions, it facilitates management of complete tools and tooling sheets and machine-compatible transmission of this data.

Execution:
- high-precision SK 50 spindle with integrated calibration edge and spindle indexing
- under-table in sturdy industrial design
- 4 x 90° indexing, 360° spindle brake
- memory for 99 adapter tools and 3000 tools
- Convenient and intuitive operation using horizontal touchscreen monitor
- automatic cutting edge detection and zero point monitoring
- Operation menus via touch screen, compass needle - easy positioning of the camera for measuring setpoints on the tool
- Ref. no. 23961218-221 with 13.3-inch and ref. no. 232961240-243 with 24-inch
- dynamic crosshair for automatic measurement
- 4 pc. USB 2.0 interface, data output via USB. measurement results can be transmitted to labels, lists or
- to the CNC machine itself
- rotation centre measurement with monochrome camera (optional)

Advantage:
- Fast µm-accurate measuring and setting of tools with EZstart (picture book)
- 20x cutting inspection magnification with a 13.3 in/38 x 24 in touch screen monitor
- Conversion to projector function with crosshair, positionable.
- integrated tool management system for storing e.g. set values and tolerances
- and creating tooling sheets for workpiece production
- >zidcode<, no network connection required for tool identification and data transmission thanks to simple transmission of data for complete tools using QR code.

Delivery:
Fast measuring and adjusting of tools via EZstart (picture book)

Notes:
price: plus shipping and packaging



Ident. No. 218–221



Ident. No. 240–243



Type	Measuring range of Z axis (mm)	Measuring range of X axis (mm)	Repeat accuracy (+/-) (mm)	Concentricity tolerance (mm)	Compressed air supply (bar)	Max. screen slant (in)	23961... Ident. No.	
ATORN 350 with IC2	350	320	0.002	0.002	6	13.3	218	(○)+
ATORN 420 with IC2	420	420	0.002	0.002	6	13.3	219	(○)+
ATORN 600 with IC2	600	420	0.002	0.002	6	13.3	220	(○)+
ATORN 600/570 with IC2	600	570	0.002	0.002	6	13.3	221	(○)+
ATORN 350 with IC2 24”	350	320	0.002	0.002	6	24	240	○
ATORN 420 with IC2 24”	420	420	0.002	0.002	6	24	241	○
ATORN 600 with IC2 24”	600	420	0.002	0.002	6	24	242	○
ATORN 600/570 with IC2 24”	600	570	0.002	0.002	6	24	243	○

Prod. Gr. 2AD

ATORN® ATORN ImageController3 tool presetter

Application:
The ATORN ImageController3 presetter for professional use with intuitive image processing technology. (Similar to using a smartphone). The clear structure of the sub-menus allows simple and customised use of the measuring device control system – simply swipe and select. The familiar technology is self-explanatory and therefore easy to learn. This saves time on training and also makes work more fun. The user interface is adapted to the respective user and makes it possible to define priorities for the respective user. The option to connect to the shared database enables central data to be accessed for effective tool management.

Execution:
- high-precision SK 50 spindle with integrated calibration edge, 4 x 90° indexing and 360° spindle brake
- under-table in sturdy industrial design
- memory for 999 adapter tools and 15000 tools
- automatic zero point monitoring
- (Optional) autofocus: automatic focus of the tool cutting edge and cutting edge shape detection of the tool
- 17 inch touchscreen operation: (similar to using a smartphone), compass needle – simple camera positioning for measuring set values on the tool
- window area moved via touchscreen
- Fast and incredibly simple operation with user-specific display.
- dynamic crosshair for automatic measurement
- 4 pc. USB 2.0 interface, data output via USB. Measurement results can be transmitted to labels, lists or
- to the CNC machine itself (optional)

Advantage:
- Simple and µm-accurate measurement and saving of multi-stage tools
- 28x magnification of the cutting edge in incident light for quality control
- rotation centre measurement with monochrome camera (optional)
- Conversion to projector function with crosshair, positionable.
- integrated tool management system for storing e.g. set values and tolerances
- and creating tooling sheets for workpiece production

Notes:
price: plus shipping, packaging, training and commissioning.
Optional: " >zidcode<, no network connection required for tool identification and data transmission thanks to simple transmission of data for complete tools using QR code."





Type	Measuring range of Z axis (mm)	Measuring range of X axis (mm)	Repeat accuracy (+/-) (mm)	Concentricity tolerance (mm)	Compressed air supply (bar)	Max. screen slant (in)	23961... Ident. No.	
ATORN 350 with IC3	350	320	0.002	0.002	6	17	222	(○)+
ATORN 420 with IC3	420	420	0.002	0.002	6	17	223	(○)+
ATORN 600 with IC3	600	420	0.002	0.002	6	17	224	(○)+
ATORN 600/570 with IC3	600	570	0.002	0.002	6	17	225	(○)+

Prod. Gr. 2AD

ATORN® tool chuck adapter

suitable for all ATORN ImageController Basic presetters up to IC3

Execution:
- ref. no. 23961090-23961096 HSK with eccentric clamp
- ref. no. 23961100-23961105 HSK without tool clamp



Ident. No. 080–085, 120–124
ISO 7388-1 SK



Ident. No. 090–105
DIN 69893 HSK



Ident. No. 113–116
DIN 69880 VDI

ISO	DIN	Suitable for tool holding device	23961... Ident. No.	
7388-1	-	SK 15	080	○
7388-1	-	SK 20	081	○
7388-1	-	SK 25	082	○
7388-1	-	SK 30	083	○
7388-1	-	SK 40	084	○
7388-1	-	SK45	085	○
-	69893-1	HSK25 A/C/E/T-HSK32 B/D/F excenter clamping	090	○
-	69893-1	HSK32 A/C/E/T-HSK40 B/D/F excenter clamping	091	○
-	69893-1	HSK40 A/C/E/T-HSK50 B/D/F excenter clamping	092	○
-	69893-1	HSK50 A/C/E/T-HSK63 B/D/F excenter clamping	093	○
-	69893-1	HSK63 A/C/E/T-HSK80 B/D/F excenter clamping	094	○
-	69893-1	HSK80 A/C/E/T-HSK100 B/D/F excenter clamping	095	○
-	69893-1	HSK100 A/C/E/T-HSK125 B/D/F excenter clamping	096	○
-	69893-1	HSK32 A/C/E/T-HSK40 B/D/F without tool clamping	100	○
-	69893-1	HSK40 A/C/E/T-HSK50 B/D/F without tool clamping	101	○

ISO	DIN	Suitable for tool holding device	23961... Ident. No.	
-	69893-1	HSK50 A/C/E/T-HSK63 B/D/F without tool clamping	102	○
-	69893-1	HSK63 A/C/E/T-HSK80 B/D/F without tool clamping	103	○
-	69893-1	HSK80 A/C/E/T-HSK100 B/D/F without tool clamping	104	○
-	69893-1	HSK100 A/C/E/T-HSK125 B/D/F without tool clamping	105	○
-	69880-1	VDI 30	113	○
-	69880-1	VDI 40	114	○
-	69880-1	VDI 50	115	○
-	69880-1	VDI 60	116	○
26623-1	-	C3	120	○
26623-1	-	C4	121	○
26623-1	-	C5	122	○
26623-1	-	C6	123	○
26623-1	-	C8	124	○

Prod. Gr. 2AD

ATORN® thermal label printer

Accessories for ATORN tool presetter

Application:
For printing measurement results or dot matrix codes on adhesive paper or thermal labels.



23961...	Ident. No.	228 (○)*

Prod. Gr. 2AD

ATORN® rotation centre measuring device for ImageController 1 + 2 + 3

accessories for ref. no. 23961212 – 23961243



23961...	Ident. No.	150 ○

Prod. Gr. 2AD

ATORN® Data output package for ImageController 2 + 3

23961...	Ident. No.	151 ○

Prod. Gr. 2AD

ATORN® Post processor for ImageController 2 + 3

23961...	Ident. No.	152 ○

Prod. Gr. 2AD

ATORN® Colour printer for lists and graphics for ImageController 2 + 3



23961... Ident. No.	
153	○

Prod. Gr. 2AD

ATORN® "BLUE-TACK" cleaning agent

23961... | Ident. No. 161

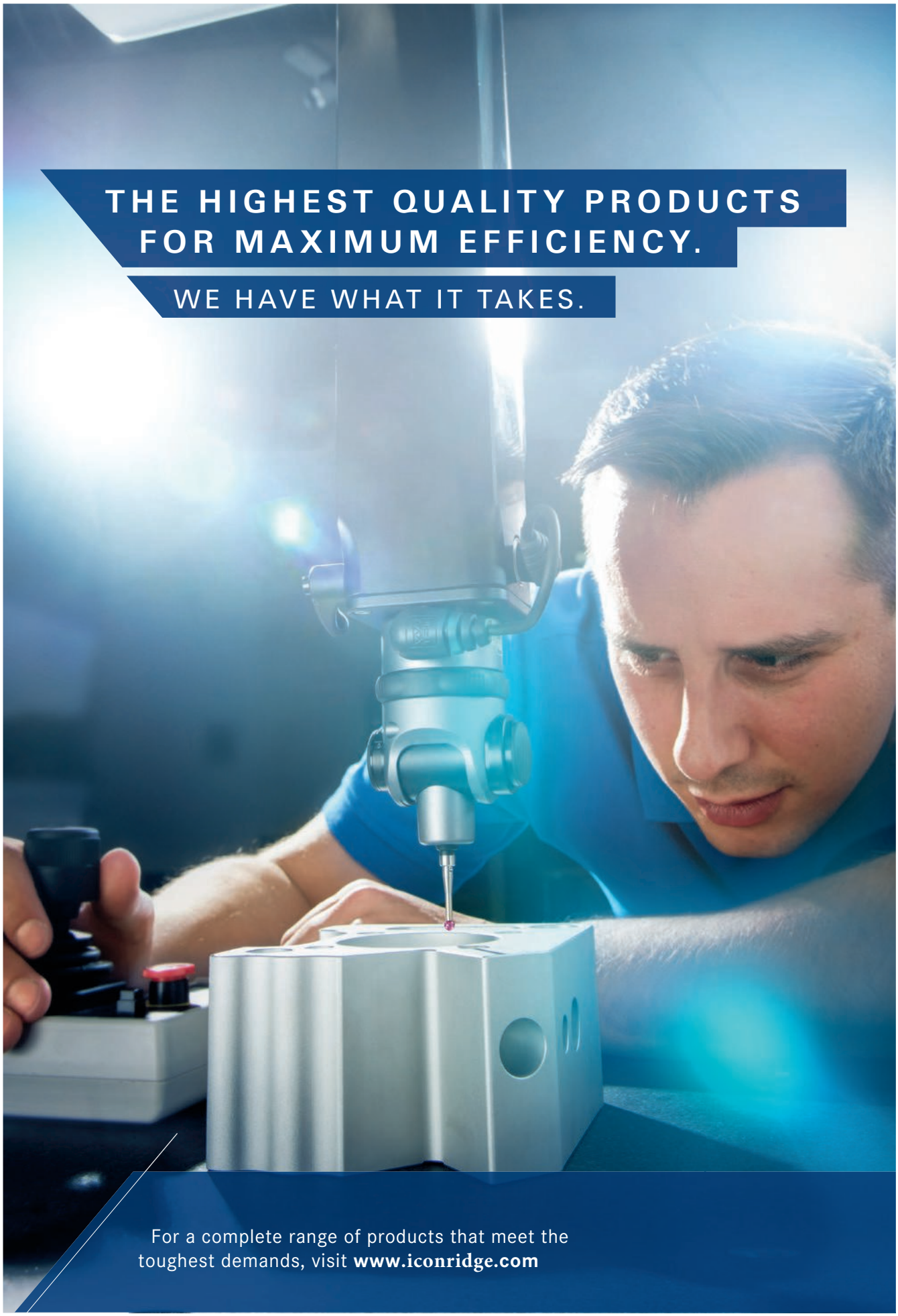
Prod. Gr. 2AD

ATORN® Autofocus for ImageController 3

23961... | Ident. No. 162

Prod. Gr. 2AD





Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Workpiece clamping


Tool holder VDI DIN 69880-1 for NC lathes

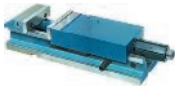
Technical introduction – magnetic clamping technology


Magnetic clamping technology

Technical introduction – vacuum clamping technology


Vacuum clamping technology


Precision vices


Machine vices

Workpiece clamping


High-pressure machine vices


3-axis and 5-axis machine vices

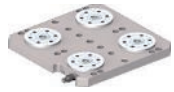

Centre clamping device


ATORN quick-jaw-change system


Multiple clamping vices


ATORN clamping jaw with positioning pins


Workpiece stops, T-groove covers


Zero point clamping system


Hydraulic lifters

ATORN® Precision short drill chuck with worm gear mechanism (DIN 69880-1)

For NC lathes

IK



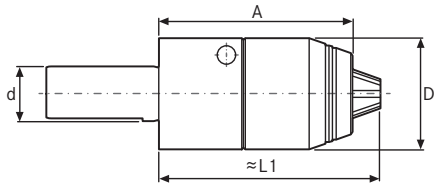
Application:
For clamping tools with straight shank.

Execution:
- For NC lathes
- The tool is clamped using a hexagon key
- Hexagon T-handle wrench operation
- With worm gear

Advantage:
- High concentricity
- Operates without play and with vibration damping
- It is possible to change the tool directly in the machine

VDI adapter Ø d	Min./max. clamping width	D (mm)	geöffnet L1 max (mm)	A (mm)	Coolant supply	21329... Ident. No.	
30	1-16 mm	50	99	87	Internal axial	150	●
40	1-16 mm	50	99	87	Internal axial	151	●

Prod. Gr. 208



Magnetic clamping plates and accessories

The magnetic clamping range includes permanent-magnetic, electro-permanent magnetic and electro-magnetic systems, exclusively for clamping ferromagnetic materials.

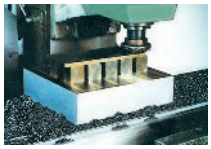
Advantages of the magnetic clamping technology over other clamping techniques:

- **Shorter setup and clamping times:**
  - Workpieces can be easily and accurately aligned
  - Clamping plates can be switched on/off quickly and easily, as can the round chuck
  - Simultaneously clamp and machine several workpieces
  - Workpieces are accessible from different sides with a single clamping operation
- **Increase in accuracy and surface quality:**
  - The workpiece is supported across the full contact surface
  - Distortion-free clamping
  - Workpieces become plane and parallel
  - No vibration during machining
- **Longer tool service life,** as no vibration produced





Permanent magnet clamping plate on a grinding machine



-

Magnetic clamp types:
To satisfy different requirements, clamping plates with different magnetic systems are available:

- **Permanent magnetic clamping plates**
  - Generation of magnetic force via permanent magnets
  - "Low magnetic field; regulation of holding force possible"
  - Mechanical, manual on/off switching
- **Electro-permanent magnetic clamping plates**
  - Generation of magnetic force via permanent magnets with excitation winding
  - Electric on/off switching with current pulse. Control unit is required.
  - Regulation of holding force, de-magnetisation and machine release
  - Maximum precision as no mechanical movement or heat development
- **Electromagnetic clamping plates**
  - "Generation of magnetic clamping force via excitation windings; high magnetic field"
  - Electric on/off switching with current supply Control unit is required
  - Regulation of holding force, de-magnetisation and machine release



Sine bar used on a grinding machine



Permanent magnetic round chuck for use on lathes

ATORN® Permanent magnetic clamping plates

Particularly narrow transverse pole pitch

Application:
For high-precision grinding and eroding work.

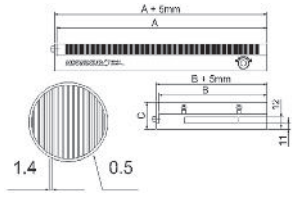
Execution:

- double neodymium magnetic system generates an adhesive force of up to 100 N/cm²
- Universal clamping of extremely small, thin and large workpieces
- Very sturdy structure with solid basic body and solid pole plate
- No deformation during switching operation due to special switch method
- Sealed against coolant and dielectric
- Easy switching using hexagon key

Delivery:
2 limit stop strips, 2 adjustable clamps and hexagon key, operating instructions.

Notes:
Other sizes available on request.





Clamping surface length A (mm)		150	175	200	250	350	400
Magnet width B (mm)		150	100	100	150	150	200
Magnetic field height (mm)		6	6	6	6	6	6
Height (mm)		51	49	49	51	51	51
Pole pitch ST/NE		1.4/0.5 mm	1.4/0.5 mm	1.4/0.5 mm	1.4/0.5 mm	1.4/0.5 mm	1.4/0.5 mm
Pole plate thickness (mm)		20	20	20	20	20	20
Wear of pole surface (mm)		8	8	8	8	8	8
Weight (kg)		9	7	8	15	22	35
24314...	Ident. No.	**150**	**175**	**200**	**250**	**350**	**400**
		●	●	●	●	●	●¹

Prod. Gr. 280

ATORN® Sine table with permanent magnetic clamping plate

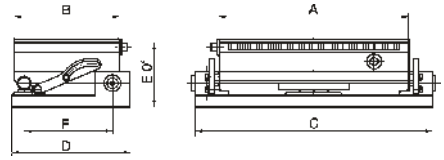
Application:
For highly precise angle grinding, eroding work and measurements.

Execution:
- For very small to large workpieces
- Precision-ground steel base plate, 60 HRC hardened
- Angle setting with gauge blocks
- Repeatability 10”
- Clamping through retaining shears and upper guide shells
- Parallelism tolerance 0.010/100 mm
- Sealed against dirt and coolant
- slewing range: 0° up to 45°

Delivery:
With 2 limit stop strips, spanner, operating instructions.

Notes:
Delivered ex-works, postage and packaging excluded.

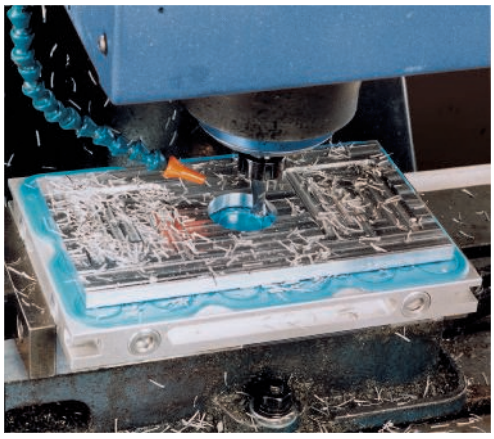




Support plate length A (mm)		140	175	250	350	450
Support plate width B (mm)		70	100	150	150	150
Base length C (mm)		170	215	290	390	490
Base width D (mm)		100	115	165	165	165
Height E (mm)		68	77	79	87	87
Pole pitch ST/NE		1.4/0.5 mm	1.4/0.5 mm	1.4/0.5 mm	1.4/0.5 mm	1.4/0.5 mm
Magnetic field height (mm)		6	6	6	6	6
Nominal adhesive strength (N/cm²)		100	100	100	100	100
Roll distance (mm)		55	85	135	135	135
24351...	Ident. No.	**210**	**215**	**235**	**245**	**250**
		●	●	●	●+	(○)+

Prod. Gr. 280

Component-free clamping
Innovative ATORN vacuum clamping technology



where setup time and dependability are key considerations

the vacuum clamping system is particularly suitable for reliably clamping flat, level-bottomed workpieces to be gently clamped and machined with minimised setup times.

we offer innovative and sophisticated solutions in this regard with plenty of accessories - for optimal and individual clamping.

when it comes to precision and the need to machine workpieces made of aluminium, non-ferrous metals, graphite, plastic, glass, wood, ceramics, titanium and steel, ATORN clamping plate sets provide an excellent working basis. these allow you to clamp your workpieces precisely and firmly, facilitating excellent working results in milling or drilling applications.

vacuum systems grip the workpiece by suction and provide an excellent hold. application of a Venturi nozzle or vacuum pump is tried and tested.

why you can achieve more with ATORN vacuum clamping technology

one set, two possibilities. this is what distinguishes the new ATORN vacuum clamping system.

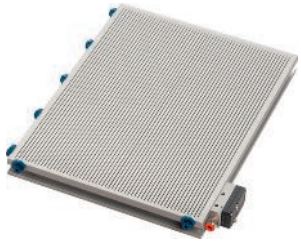
the Venturi principle provides an economical option for getting started with vacuum clamping technology for short-term use. the vacuum is created through direct connection to the compressed air supply without vacuum unit. for energy-saving continuous use in series production, a vacuum unit is recommended.

clamping can be achieved indirectly by means of sandwich adapter mats or directly on a grid plate. the use of adapter mats offers **two major advantages**:

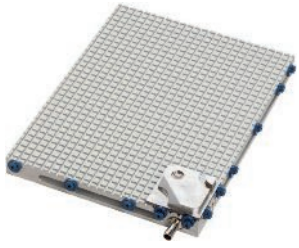
- production of openings when machining workpieces
- significant reduction of re-clamping times as no sealing cords are required compared to direct grid plate support

application:

holds workpieces during milling, turning, grinding, polishing, drilling, reaming, countersinking, engraving, eroding, testing, measuring and coating.



ATORN slot plates for clamping small components and workpieces with a variety of contours



ATORN grid plates for clamping simple workpieces for heavy machining



ATORN adapter mats for workpieces with and without openings

ATORN® Vacuum clamping system and adapter mat set
For dry and wet processing

Application:

For clamping workpieces by means of vacuum.

Execution:

- One system with two possibilities, Fig. 1 + 2
- Fig. 1 with adapter mats, quick clamping without a device for workpieces with and without breakouts.
- Fig. 1 + 2 for use with vacuum pumps only (sets without Venturi nozzle).
- Fig. 2, good sealing, also suitable for rough (e.g. sawn) surfaces; particularly well suited for heavy-duty machining.
- Unevenness on the workpiece clamping surface is sealed by means of the elastic sealing cords. Up to 0.5 mm of unevenness or curvature can be compensated for with the sealing cord.
- The modular structure makes it possible to connect several vacuum plates across all patterns. Here, the operating vacuum of the individual plates comes from the connection elements.

Advantage:

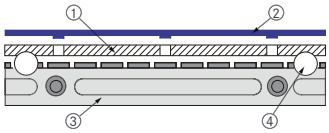
- Reduces clamping times
- For fast clamping without equipment
- For clamping non-magnetic workpieces
- Only one clamping cycle for five-sided machining
- Universal clamping system for a wide range of different workpieces

Delivery:

1 each of compatible modular, grid and vacuum clamping plate, 1 compatible adapter plate for the Vac-Mat system, 10 x blue adapter mats, 4 adjustable clamps for modular plates, slot width = 14 mm, 1 assembly tool for replacing blanking plugs, 1 3-m vacuum suction connection, 10-m black vacuum sealing cord, 4 mm diameter

Technical data:

- Adapter plate height H: 32.5 mm
- Grid dimension: 12.5 mm
- Vacuum panels, can be linked: Yes



① Grid vacuum clamping plate







Set contents

Model		VM 1	VM 2	VM 3
Adapter plate length L (mm)		300	400	600
Adapter plate width B (mm)		200	300	400
For number of adapter mats (PCS)		1	2	4
24500...	Ident. No.	010	015	020
		○	○	○

Prod. Gr. 234

ATORN® Adapter mats

Accessories for vacuum clamping system with adapter mats

Application:
Ident. No. 025–050: For milling breakouts.
Ident. No. 060: Black adapter mat for leakage-free covering of vacant clamping surfaces on aluminium adapter plates.

Execution:
- **Ident. No. 025–050:** With the adapter mats it is possible to machine workpieces on 5 sides in one chucking and create break-outs in internal and external contours.

Notes:
accessories for ref. no. 24500010-020



Ident. No. 025
For workpieces with soft, rough surfaces (blue), tolerance ±0.04 mm



Ident. No. 050
For workpieces with hard, smooth surfaces (green), tolerance ±0.04 mm



Ident. No. 060
Black adapter mats for leakage-free covering of vacant clamping surfaces

Length (mm)		300	300	300
Width (mm)		200	200	200
Thickness (mm)		2.5	2.5	2.5
Colour		Blue	Green	Black
24502...	Ident. No.	025	050	060
		●	●	●

Prod. Gr. 234

ATORN® Grid vacuum chuck sets

With venturi nozzle for dry processing

Application:
For simple geometric workpieces with rough shapes without breakouts or large breakouts that can be sealed with sealing cords (size must be a multiple of the grid).

Execution:
- With Venturi nozzle
- All grid vacuum plates can also be connected to conventional vacuum pump no. 24501 110 or no. 24501 120.
- Operating pressure approx. 6 bar
- Depending on conditions of use, end vacuum up to 92%, air consumption approx. 95 l/min.

Advantage:
- Minor unevenness and curvatures are sealed and compensated for with the elastic sealing cords.
- Good sealing, also suitable for rough (e.g. sawn) surfaces
- High retention forces, especially suitable for heavy machining such as milling and grinding

Delivery:
1 matching vacuum grid plate with a grid pattern of 12.5 mm, including built-in compressed air vacuum ejector. Mounting grooves and height-adjustable stop discs, 4 x adjustable clamp with a groove width of 14 mm, 1 plastic hose connection for 3 m quick-release coupling, black vacuum sealing cord with 4 mm diameter, 10 m, 1 vacuum generator including silencer and shut-off valve, 1 connection for conventional vacuum pump.

Notes:
Conversion set for wet machining included in scope of delivery. A vacuum pump is also needed for wet machining.

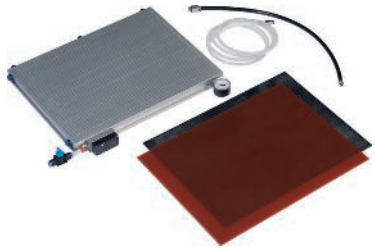


Model		RV 1	RV 2	RV 3
Vacuum plate length L (mm)		300	400	600
Vacuum plate height H (mm)		32.5	32.5	32.5
Vacuum plate width B (mm)		200	300	400
Grid dimension (mm)		12.5	12.5	12.5
Vacuum panels, can be linked		No	No	No
24504...	Ident. No.	010	020	030
		○	○	○

Prod. Gr. 234

ATORN® Slotted vacuum chuck sets

With venturi nozzle for dry processing



Application:
Ideal for light machining tasks such as milling or drilling - e.g. printed circuit boards or electronic components - or also engraving. It is thus also possible to securely clamp workpieces that are much smaller than the clamping surface of the vacuum plate. Workpieces no larger than a postage stamp can be cut out of larger material sections using milling techniques. Individual adaptation to part geometry ensures reliable clamping of almost all conceivable workpiece geometries.

Execution:
- The narrowing of the cross section within the Venturi pipe causes a vacuum here, which draws the air in.
- Distance between slots 5 mm
- All slotted vacuum plates can also be connected also to conventional vacuum pump no. 24501 110 or no. 24501 120.
- The noise level is just 57 db (A).
- Vacuum generation through compressed air vacuum ejector: max. vacuum approx. 5-6 bar. End vacuum of up to 87% depending on conditions of use. Air consumption approx. 90 l/min.

Advantage:
- High process reliability
- Can be adapted individually to the geometry of the part
- Low-cost entry-level set
- High max. vacuum at approx. 5-6 bar
- Venturi technology requiring little maintenance

Delivery:
1 matching vacuum grid plate with a width of 1 mm, distance between centres 5 mm, including compressed air vacuum ejector. Mounting grooves and height-adjustable stop plates. 4 adjustable clamps per slot width = 14 mm, 1 hose connection for quick-release coupling and 3 m plastic hose, 1 suitable brown rubber adapter mat, 1 black rubber adapter mat, including silencer and shut-off valve, 1 connection for conventional vacuum pump

Notes:
Conversion set for wet machining included in scope of delivery. A vacuum pump is also needed for wet machining.

Model		SV 1	SV 2	SV 3
Vacuum plate length L (mm)		300	400	600
Vacuum plate width B (mm)		200	300	400
Vacuum plate height H (mm)		32.5	32.5	32.5
Average slot spacing (mm)		5	5	5
Vacuum panels, can be linked		No	No	No
24503...	Ident. No.	**010**	**020**	**030**
		○	○	○

Prod. Gr. 234

ATORN® Rubber adapter mats

Accessories for slotted vacuum plates



No. 24502
With its high friction coefficient, the blue adhesive rubber mat provides added strength to prevent the workpiece from slipping during machining (height tolerance ± 0.02 mm).



No. 24505 010, 24505 030, 24505 050
Outstanding coefficient of friction offers particularly good resistance to shifting forces encountered during machining. The height tolerance of the rubber adapter mat is ± 0.1 mm.



No. 24505 020, 24505 040, 24505 060
Made from synthetic elastomer. These mats can be face-milled, thereby allowing significantly greater plane-parallelism. The rubber adapter mat can be milled up to a depth of 1.5 mm without vacuum loss. Height tolerance ± 0.02 mm

Colour		Blue	Brown	Brown	Brown	Black	Black	Black
Length (mm)		2000	300	400	600	300	400	600
Width (mm)		400	200	300	400	200	300	400
Thickness (mm)		1	3	3	3	3	3	3
Thickness tolerance of adapter mat (+/-) (mm)		0.02	0.1	0.1	0.1	0.02	0.02	0.02
24502...	Ident. No.	**070**	-	-	-	-	-	-
		●						
24505...	Ident. No.	-	**010**	**030**	**050**	**020**	**040**	**060**
			●	○	●	●	●	●

Prod. Gr. 234

ATORN® Sealing cord

Application:
For sealing grid vacuum plates.

Length (m)		50
Outer Ø (mm)		4
Colour		Black
24502...	Ident. No.	010
		●

Prod. Gr. 234

Execution:
- Sealing cord 4 mm in diameter and 50 m long



Sealing strip

ATORN® Vacuum hose
With wire spiral, 10 m

Application:
Connecting hose for vacuum pumps and vacuum plates.

Length (m)		10
Outer Ø (mm)		18
Internal Ø (mm)		12
Colour of vacuum suction hose		Transparent
24502...	Ident. No.	020
		●

Prod. Gr. 234

Execution:
- Transparent
- With wire spiral, 10 m long



Vacuum hose with wire spiral

ATORN® Quick-action clamping drill vices

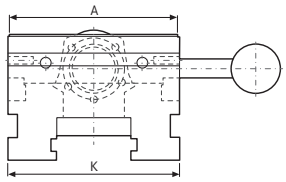
Application:
For quick and safe clamping, in particular for workpiece series machining; can be used with guide rails; clamping on base and side; also suited for light milling tasks.

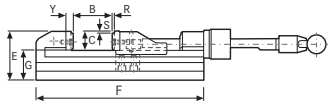
Execution:
- One-handed operation
- Special cast iron body
- Flat and sturdy design
- Max. clamping force 10 kN
- Positive locking engagement
- Large clamping range

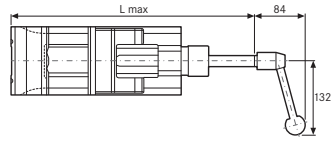
Advantage:
- Quick jaw adjustment and clamping with just one lever

Delivery:
Vice incl. guide rails and fastening material.











Clamping with guide rail



Clamping with clamping brackets



Clamping with clamping brackets, laterally

A (mm)	B (mm)	C (mm)	Y (mm)	F (mm)	Max. length (mm)	K (mm)	G (mm)	E (mm)	Weight (kg)	28671... Ident. No.	
110	130	32	12	280	465	112	50	82	12.5	110	●
135	160	40	16	328	545	137	50	90	19	135	●

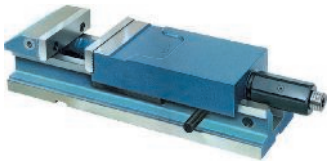
Prod. Gr. 280

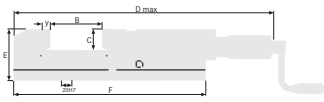
ATORN® High-pressure machine vices
mechanical/hydraulic

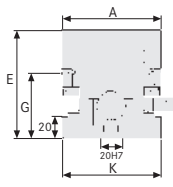
Application:
For individual and series production on drilling and milling machines.

Execution:
- Mechanical-hydraulic clamping system with mechanical pretensioning via hand crank
- Body die-forged from steel
- Aligned on the machine table via grooves and sliding blocks, no. 26196
- Rough adjustment of clamping range using rigging pins
- Pretensioning facility for elastic parts (stacked mounting)
- Guideways hardened and polished

Delivery:
With 1 set of standard jaws (1 side smooth, 1 side grooved) and hand crank.







A (mm)		90	125
Min./max. clamping width		0-150 mm	0-220 mm
C (mm)		39.6	39.6
Y (mm)		15.6	15.6
G (mm)		59	70
E (mm)		99	112
F (mm)		370	460
Tension force (kN)		25	40
28832...	Ident. No.	092	127
		●	●

Prod. Gr. 281

ATORN® High-pressure machine vices

Mechanical clamping system, mechanical with power transmission

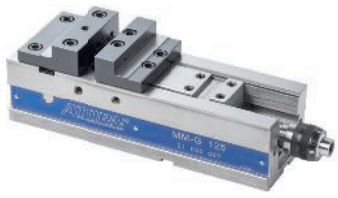
Application:
For NC machines, machining centres in tool manufacture, mould making jog manufacturing and serial production.

Execution:
- With stepped jaws, reversible
- Mechanical-mechanical clamping system with power transmission via elbow joint with hand crank
- Clamping force can be pre-set via limit stop
- Body made of GGG cast iron
- Rough adjustment of clamping range by offsetting the jaws on the clamping slide
- Clamping repeatability of 0.01 mm with constant clamping force
- Guideways hardened and polished
- incl. clamping nipple bore (pitch 200mm) for
- ATORN zero point clamping system

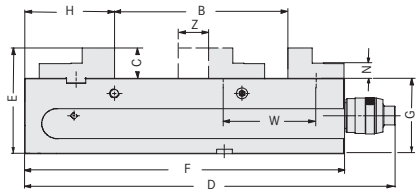
Advantage:
- Chip guard prevents chips penetrating inside the body
- Largely maintenance-free

Delivery:
With stepped jaws and regulator

Notes:
Angled gear on request. Delivered ex-works, postage and packaging excluded.







A (mm)		125	160
Min./max. clamping width		0-216 mm	0-320 mm
Min./max. clamping width for reversible step jaws		97-312 mm	131-451 mm
C (mm)		40	50
F (mm)		400	530
G (mm)		100	115
Max. length (mm)		463	618
E (mm)		140	165
Travel stroke of gate valve (mm)		109	117
Offset range 2		1 x 108 mm	2 x 102.5 mm
Tension force (kN)		40	60
28874...	Ident. No.	**125**	**160**
		●+	●+

Prod. Gr. 280

ATORN® Carrier jaws with pendulum jaw

Application:
For flexible clamping of unmachined part.

Execution:
- Suitable for high pressure vices no. 28878 and 28874
- The stepped jaws are exchanged for the support jaws



Jaws width (mm)		125
28874...	Ident. No.	228
		●

Prod. Gr. 280

ATORN® Claw insert

Application:
For flexible clamping of unmachined part.

Execution:
- Suitable for high pressure vices no. 28878 and 28874
- The stepped jaws are exchanged for these supporting jaws
- Swivel claw inserts



28874...	Ident. No.	230
		●

Prod. Gr. 280

ATORN® Stepped jaws, raised

Application:
For flexible clamping of unmachined part.

Execution:
- Suitable for high pressure vices no. 28878 and 28874



Jaws width (mm)		125
28874...	Ident. No.	250
		○

Prod. Gr. 280

ATORN® 5-axis compact machine vice

Mechanical/mechanical clamping system

Application:
For machining unmachined parts and/or the sixth side for 3-5 axis machining centres.

Execution:
- Compact design, optimum accessibility for 5-sided machining
- Sturdy basic body made of GJS-600 spheroidal graphite iron
- Patented quick adjustment of the clamping width
- Re-clamping spring washer package
- Stepped jaws with snap-in device for snap-in bars
- on request (larger clamping width)

Advantage:
- Very low clamping force loss when clamping close to edges
- Dirt-resistant thanks to encapsulated spindle
- Secure retention forces

Delivery:
Without jaws, including 4 adjustable clamps

Notes:
torque wrench required (½ inch square drive



A (mm)		125
Min./max. clamping width		0-90 mm
Min./max. clamping width for reversible step jaws		0-178 mm
Min./max. clamping width with gripping/swing jaw		10-202 mm
G (mm)		175
E (mm)		100
F (mm)		250
L1 (mm)		273
Clamp in depth (mm)		8
Tightening torque (Nm)		105
Tension force (kN)		40
Travel stroke of gate valve (mm)		18
28741...	Ident. No.	**125**
		●

Prod. Gr. 280

ATORN® Stepped jaws

Camping jaws/accessories for 28741125 and 28730 125 and 225

Application:
For clamping parallel workpieces.

Execution:
- For 5-axis compact machine vices no. 28741 125 and no. 28730 125 and 225
- Hardened and polished
- With clip-in device



A (mm)		125
Y (mm)		78/78
C (mm)		39.5
Min. clamping width for reversible step jaws (mm)		0
Max. clamping width for reversible step jaws (mm)		178
28741...	Ident. No.	**215**
		●

Prod. Gr. 280

ATORN® Grip jaws

Camping jaws/accessories for 28741125 and 28730 125 and 225

Application:
For flexible workpiece clamping, for a wide range of machining processes.

Execution:
- For 5-axis compact machine vices no. 28741 125 and no. 28730 125 and 225
- Hardened and polished
- With 4 grip inserts and 4 contact sleeves

Delivery:
Supplied with 2x grip inserts and 2x contact elements



A (mm)		160
Y (mm)		78/105
C (mm)		25
Min. clamping width with gripping jaws (mm)		10
Max. clamping width with gripping jaws (mm)		202
28741...	Ident. No.	**235**
		○

Prod. Gr. 280

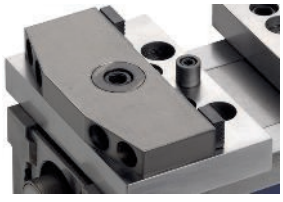
ATORN® Grip jaws, pendulum jaws

Camping jaws/accessories for 28741125 and 28730 125 and 225

Application:
For clamping non-parallel workpieces, cast parts and moulded workpieces.

Execution:
- Movable jaw
- Hardened and polished
- Cemented carbide grip insert
- With 2 grip inserts

Delivery:
Supplied with 2 x cemented carbide grip inserts



A (mm)		156
Y (mm)		62
C (mm)		20
Min. clamping width for reversible step jaws (mm)		6
Max. clamping width for reversible step jaws (mm)		168
28741...	Ident. No.	**245**
		○

Prod. Gr. 280

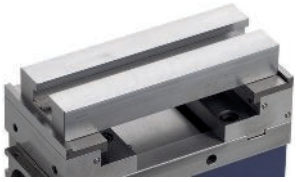
ATORN® Clamping jaws/accessories

clamping jaws/accessories for 28741125 and 28730 125 and 225

Application:
Ident. No. 250: For expanding the clamping width to max. 240 mm.
Ident. No. 251: For expanding the clamping width.
Ident. No. 252–253: For firmer hold of workpieces on the step (4.5 mm deep, 2.5 mm wide).
Ident. No. 254–255: Secure and sturdy hold even where compressed air is used.

Execution:
- For screwing onto stepped jaws
- **Ident. No. 250–253:** For 5-axis machine compact vice no. 28741 125
- **Ident. No. 251:** For narrow components
- **Ident. No. 252–253:** Stepped jaws
- **Ident. No. 254–255:** Stepped bars are clicked in by hand without tools

Advantage:
- **Ident. No. 254–255:** Prevents chips from entering underneath the stepped bar



Ident. No. 250



Ident. No. 251



Ident. No. 252–253



Ident. No. 254–255

Type description		Screw-on jaws, large clamping width	Screw-on jaws for narrow workpieces	Screw-on grip jaws	Screw-on grip jaws	Stepped bars for clipping on	Stepped bars for clipping on
A (mm)		125	60	125	125	125	125
Y (mm)		45	45	6.4	5	-	-
C (mm)		15	15	39.5	19.5	35	15
Min. clamping width (mm)		75	7	5	39	10	10
Max. clamping width (mm)		240	156	70	160	166	166
28741...	Ident. No.	**250**	**251**	**252**	**253**	**254**	**255**
		○	○	●	○	○	○

Prod. Gr. 280

ATORN® TCA 5-axis centre clamping devices K and M

Application:
Ideal for use on 5-axis machining centres, conventional clamping and grip clamping possible.

Execution:
- Central, simple programming without zero offset
- Workpiece bearing surface height 192 mm
- Quick-change jaw system, tool-free jaw change with
- quick-release within 10 seconds per pair
- Reversible jaws: for min. / max. clamping widths with one pair of jaws
- Constant clamping force by means of low-maintenance telescopic spindle
- Fitted as standard with location holes for zero point clamping system gauge 200
- Can also be mounted on machine table with through bolts / shoulder screws
- in 50/63-mm grid or adjustable clamps
- Integrated scale ring for fine adjustment of centre position
- Operation with torque wrench

Advantage:
- Telescopic spindle, interference contour remains unchanged
- Central, simple programming without zero offset
- Material dimensions are symmetrically distributed
- Workpiece accessibility does not depend on clamping width
- Symmetrical design = workpiece remains centred and parallel.
- Linear clamping force of 30 kN at 45 Nm.

Delivery:
Ref. no. 28761001: 1 TeleCentric 70 K without jaws, 1 support plate for transport, 1 T-handle wrench
1 hand crank for pre-setting (please order clamping jaws separately)
ref. no. 28761002: 1 TeleCentric 70 K without jaws, 1 support plate for transport, 1 T-handle wrench
1 hand crank for pre-setting (please order clamping jaws separately)

Notes:
Torque wrench 20-120 Nm ref. no. 55240120
Screwdriver insert hex. 1/2" ref. no. 58682140



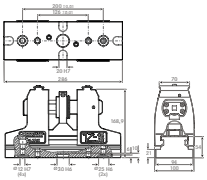
Ident. No. 001



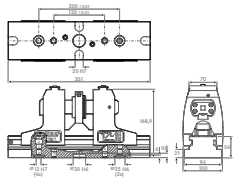


Ident. No. 002





Ident. No. 001



Ident. No. 002



p. 950



p. 950



p. 950



p. 951



p. 949



p. 949

Model	A (mm)	b70	Min./max. clamping width 2	Clamping height (mm)	Tightening torque (Nm)	Tension force (kN)	Weight (kg)	28761... Ident. No.	
BS 18 LTX Impuls	70	9-135 mm	9-134 mm	192	45	30	17.5	001	●
GPA 18 LTX	70	42-200 mm	49-139 mm	192	45	30	19.5	002	●

Prod. Gr. 280

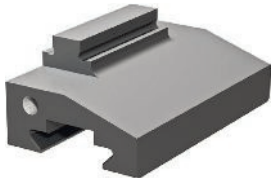
ATORN® carbide-coated stepped jaws, mobile

Accessories for ref. no. 28761001-002

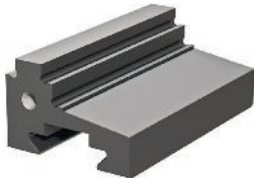
Application:
for clamping parallel pre-processed workpieces

Execution:
- material: hardened steel
- jaw quick-change system, no longer features screws
- jaws can be clamped in two positions

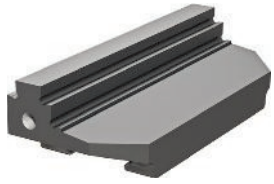
Advantage:
- clamping surfaces (stepped) with additional carbide coating to ensure secure clamping
- – increased retention force by min. factor of 2 compared to smooth clamping surfaces



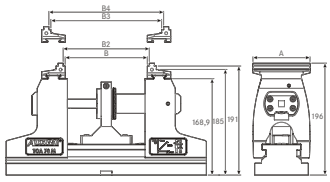
Ident. No. 010



Ident. No. 011



Ident. No. 012



A (mm)	B/B2	B3/B4	B/B2	B3/B4	28761... Ident. No.	
38	9-85 mm	59-135 mm	42-150 mm	92-200 mm	010	●
70	9-85 mm	59-135 mm	42-150 mm	92-200 mm	011	●
100	9-85 mm	59-135 mm	42-150 mm	92-200 mm	012	●

Prod. Gr. 280

ATORN® carbide-coated grip jaw, mobile

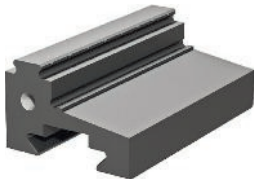
Accessories for ref. no. 28761001-002

Application:
for 5-sided machining, ensuring excellent accessibility to the workpiece

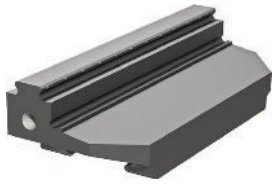
Execution:
- for rectangular workpieces (saw cut) //≤ 0.5 mm
- minimum lost clamping edge of 3 mm
- positive locking thanks to tips that penetrate the material without the need for preliminary shaping
- integrated gripper row ensures a rigid design that protects against vibrations, especially in parts clamped vertically
- additional clamping surfaces, polished on two sides
- suitable for a material strength of up to 1000 N/mm2



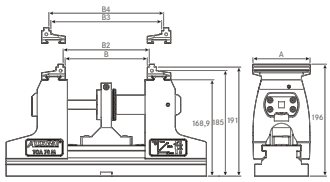
Ident. No. 020



Ident. No. 021



Ident. No. 022



A (mm)	B/B2	B3/B4	B/B2	B3/B4	28761... Ident. No.	
38	9-84 mm	59-134 mm	42-149 mm	92-199 mm	020	●
70	9-84 mm	59-134 mm	42-149 mm	92-199 mm	021	●
100	9-84 mm	59-134 mm	42-149 mm	92-199 mm	022	●

Prod. Gr. 280

ATORN® 70-mm prism jaw, mobile

Accessories for ref. no. 28761001-002

Application:
for horizontal and vertical clamping of round and flat workpieces

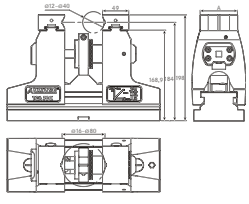
Execution:
- clamping width B2 70 K: horizontal Ø10–Ø40 mm
- clamping width B2 70 K: vertical Ø16–Ø80 mm
- clamping width B 70 M: horizontal Ø10–Ø40 mm
- clamping width B 70 M: vertical Ø47–Ø110 mm

Technical data:
- A: 70 mm

28761...	Ident. No.	025
		●

Prod. Gr. 280





ATORN® Soft jaw 120, mobile

Accessories for ref. no. 28761001-002

Application:
For self-production of special jaws

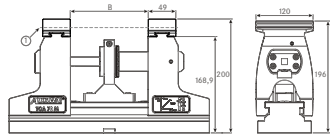
Execution:
- Ref. no. 28761030, material: Aluminium, AlZn5.5MgCu
- Ref. no. 28761031, material: Case-hardening steel, 21MnCr5G, workpiece no.: 1.2162 (jaws can be hardened during use)
- Maximum machining depth 15 mm
- clamping width B 70K: 0-70 mm
- clamping width B 70M: 34-135 mm



Ident. No. 030



Ident. No. 031



Material	A (mm)	28761... Ident. No.	
Steel	120	030	●
Aluminium / aluminium	120	031	●

Prod. Gr. 280

ATORN® complete workpiece stop

Accessories for ref. no. 28761001-002

Execution:
- ref. no. 28761040 workpiece stop, mechanical, complete
- ref. no. 28761042 workpiece stop, magnetic, complete

Type		mechanical	magnetic
28761...	Ident. No.	040	042
		●	●

Prod. Gr. 280



Ident. No. 040



Ident. No. 042

ATORN® adjustable clamps (pair)

Accessories for ref. no. 28761001-002

Application:
for mounting the clamp on the machine table

Delivery:
scope of delivery includes 2 pieces

28761...	Ident. No.	045
		●

Prod. Gr. 280



ATORN® alignment and fixing kit for T-groove and mounting base

Accessories for ref. no. 28761001-002

Application:
for aligning (positioning) and mounting the clamp on pallets and machine tables

Execution:
- size according to T-groove or thread in machine table

Thread dimension	Suitable for groove width (mm)	28761... Ident. No.	
M12	14	053	●
M12	16	054	●
M12	18	055	●

Prod. Gr. 280



ATORN® alignment and fixing T-groove kit

Accessories for ref. no. 28761001-002

Application:
for aligning (positioning) and mounting the clamp on pallets and machine tables

Execution:
- size according to T-groove or thread in machine table



Thread dimension		M10	M12	M14	M16	M16
Suitable for groove width		12	14	16	18	22
28761...	Ident. No.	060	061	062	063	064
		●	●	●	●	●

Prod. Gr. 280

ATORN® D12/M12 shoulder screw

Accessories for ref. no. 28761001-002



Thread dimension	Ø (mm)	28761... Ident. No.	
M12	12	065	●

Prod. Gr. 280

ATORN® 5-axis machines centre clamping devices

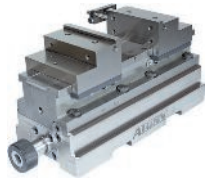
Application:
For secure and vibration-free clamping at very high cutting and feed forces on medium-sized 5-axis machines.

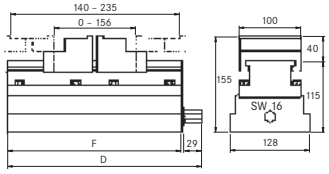
Execution:
- Centring fixture with fine adjustment at the table centre for the extremely high precision on the workpiece
- All function faces hardened and precision-ground
- Very large clamping range (0-235 mm) for a short design length
- With flushing technology to clean the spindle chamber
- Clamping repeatability < 0.003 mm

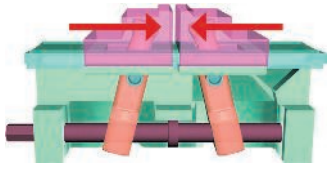
Advantage:
- Optimum transmission of force in the clamping jaws via toggle system
- Each workpiece can be firmly clamped across the whole clamping length with precise apportioning of force
- Easy replacement of jaws
- For universal use

Delivery:
Centre clamping device without jaws, including 3/8 inch socket wrench insert and knurled wheel

Notes:
Recommended torque screwdriver no. 52244 110, see .







A (mm)	Min./max. clamping width	F (mm)	H (mm)	D (mm)	Tightening torque (Nm)	Tension force (kN)	Repeat accuracy (mm)	28790... Ident. No.	
100	0-235 mm	280	155	312	110	56	0.003	100	○

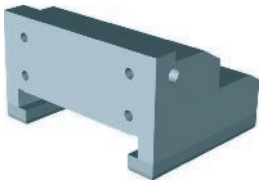
Prod. Gr. 280

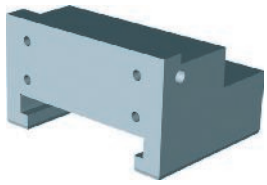
ATORN® Clamping jaws

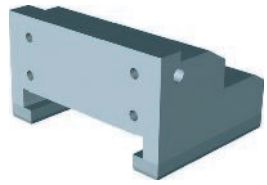
Accessories for ref. no. 28790 100

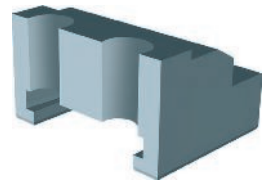
Application:
Ident. No. 301–302: For clamping workpieces.
Ident. No. 303: For clamping non-parallel workpieces, cast parts and moulded workpieces.
Ident. No. 304: For clamping non-parallel workpieces, cast parts and moulded workpieces, does not include thrust pads
Ident. No. 310: For parallel clamping of workpieces made of steel and cast iron.
Ident. No. 311: for parallel clamping of workpieces made of plastic.
Ident. No. 312: For adapting the clamping jaws to the workpiece contour.
Ident. No. 313: For clamping round workpieces.
Ident. No. 314: For better adhesion to workpiece.

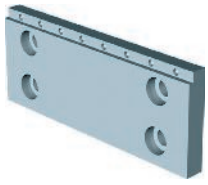
Execution:
- Accessories for ref. no. 28790
- **Ident. No. 301:** For clamping width 0 - 156 mm
- **Ident. No. 301, 310:** Hardened and polished
- **Ident. No. 301–302:** Precision-ground
- **Ident. No. 302:**
  - Side stop
  - For clamping width 0-235 mm, can be used on both sides
- **Ident. No. 303–304:** Adjustment angle ±2°
- **Ident. No. 304:**
  - including replaceable pressure pieces of your choice (ref. no. 305-307)
  - and 1 piece grooved jaw ref. no. 314
- **Ident. No. 310–311:** Clamping depth 4 mm
- **Ident. No. 311–312:** For screwing on
- **Ident. No. 312:**
  - Can be hardened
  - For making shaped jaws
- **Ident. No. 313:**
  - Clamping range diameter 10-30 mm
  - 1 vee block horizontal and 2 vertical
- **Ident. No. 314:** Flat ground rear side, can be used on both sides

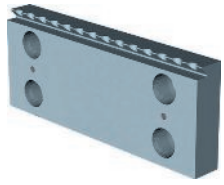

Ident. No. 301

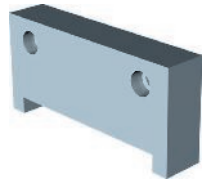

Ident. No. 302

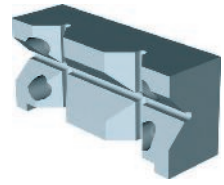

Ident. No. 303

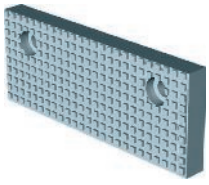

Ident. No. 304


Ident. No. 310


Ident. No. 311


Ident. No. 312


Ident. No. 313


Ident. No. 314

Type	Standard clamping jaw	Clamping jaw with step, polished	Pendulum jaw	Double pendulum jaw	grip jaw with 4 mm level	grip jaw with 4 mm level	Soft steel jaw	Prism jaw
Min./max. clamping range Ø	-	-	-	-	-	-	-	10-30 mm
Min./max. clamping width	0-156 mm	0-235 mm	-	-	-	-	-	-
Length (mm)	100	100	100	100	100	100	100	100
Jaws thickness (mm)	80	80	80	80	10	10	20	30
Height (mm)	50	50	50	50	40	40	48	40
28790... Ident. No.	**301**	**302**	**303**	**304**	**310**	**311**	**312**	**313**
	○	○	○	○	○	○	○	○

Type	Grooved jaw
Min./max. clamping range Ø	-
Min./max. clamping width	-
Length (mm)	100
Jaws thickness (mm)	10
Height (mm)	50
28790... Ident. No.	**314**
	○

Prod. Gr. 280

ATORN® Thrust pads

Accessories for ref. no. 28790 304

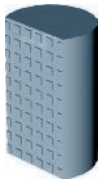
Application:
For use in pairs in double pendulum jaw ref. no. 28790304

Execution:
- Hardened and polished
- Accessories for ref. no. 28790

Notes:
price refers to price per piece and not price for a pair.



Ident. No. 305



Ident. No. 306



Ident. No. 307

Jaw design		Grooved tip	Flat grooves	Smooth
28790...	Ident. No.	305	306	307
		○	○	○

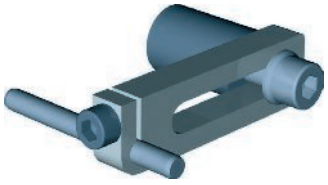
Prod. Gr. 280

ATORN® Workpiece stop

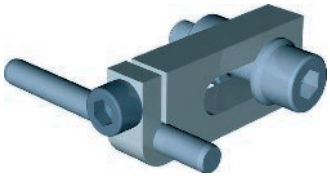
Accessories for ref. no. 28790 100

Execution:
- **Ident. No. 308:** Attached to clamp on side by magnetic means
- **Ident. No. 309:** Screwed to side of clamp
- **Ident. No. 315:** Unhardened
- **Ident. No. 316:** Hardened

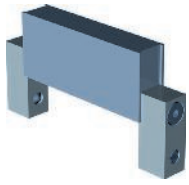
Notes:
Ident. No. 315–316: Please indicate height when ordering. Standard heights 19.8, 24.8, 29.8, 34.8 mm. Heights of 9.8-40 mm available on request.



Ident. No. 308



Ident. No. 309



Ident. No. 315–316

Length (mm)			-	100
28790...	Workpiece stop, magnetic	Ident. No.	308 ○	-
28790...	Workpiece stop, screwed	Ident. No.	309 ○	-
28790...	Workpiece support, unhardened	Ident. No.	-	315 ○
28790...	Workpiece support, hardened	Ident. No.	-	316 ○

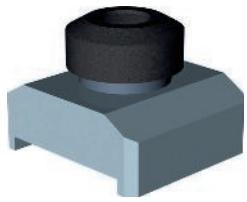
Prod. Gr. 280

ATORN® Clamping jaw chuck with base plate

Accessories for ref. no. 28790 100

Application:
For clamping round components on the centre clamping device.

Execution:
- For collets type ER 40
- Accessories for ref. no. 28790



Collet type		ER 40
Min. clamping range (mm)		3
Max. clamping range (mm)		26
28790...	Ident. No.	317 ○

Prod. Gr. 280

ATORN® Mechanical centre clamping device

For ATORN quick-jaw-change system (click system)

Application:
Ideal for 5-sided machining or as an economical solution in conjunction with palletising and automation systems.

Execution:
- Sturdy steel version
- Centring and repeat accuracy ±0.025 mm
- Basic body hardened and polished
- Wear-resistant and nitrided spindle
- For tightening centre clamping devices from left and right

Advantage:
- The clamp can also be set-up linearly thanks to the precise grinding height
- Matching jaw quick-change system ref. no. 28892 offers a wide range of jaw widths and means of clamping
- Spindle and spindle nut protected against dirt and damage by sturdy chip guard and scraper
- Compact design for high clamping force

Delivery:
Basic body with plain jaw set for ATORN click system, without interchangeable jaw grips or ejector.

Notes:
suitable ATORN interchangeable jaw grips for jaw quick-change system art. no. 28892 in aluminium or steel. for corresponding tightening torque: torque wrench 1/2 inch 10-100 Nm, order no. 52240120, hexagon socket wrench insert 1/2 inch, WAF 15, order no. 58590150. ratchet combination spanner ref. no. 52044215. matching adjustable clamp ref. no. 28791 130





Size	A (mm)	Min./ max. clamping width	D (mm)	E (mm)	Tightening torque (Nm)	Tension force (kN)	Repeat accuracy (mm)	28791... Ident. No.	
2	90	0-96 mm	180	45	80	30	0.02	090	○
3	125	0-152 mm	250	66	100	40	0.02	125	●

Prod. Gr. 281

ATORN® Plain jaws for jaw quick-change system

Plain jaws suitable for many vices

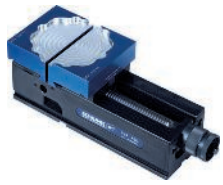
Application:
Plain jaws for holding interchangeable jaw grips made of high-strength aluminium and stainless steel.

Execution:
- For the ATORN click system
- The concept of holding, guiding and locking offers the highest level of production safety
- Interchangeable jaw grips are available in many widths

Advantage:
- Considerably shorter set-up times thanks to quick change of the interchangeable jaw grips (less than 30 seconds)
- Large range and a large number of combination options facilitate almost any clamping task
- Very flexible as the system can be adapted to all common vices



Basic set of jaws





For vice type	Size	Jaws width (mm)	Plain jaw pair 28892... Ident. No.	
Atorn MM-G 125	3	125	018	●
Allmatic Centro Grip	3	125	001	○
Allmatic Duo Plus mech. all models	3	125	003	○
Allmatic LC/TC up to April 98	3	125	006	○
Allmatic LC/TC from May 98 1	3	125	007	●
Allmatic T-Rex (14 mm slot)	3	125	013	○
Allmatic T-Rex (XL)	3	125	014	○
Allmatic Titan	3	125	015	○
Arnold Arno NC Twin	3	125	017	○
Fresmak Arnold MB2	3	125	019	○
Fresmak Arnold Twin	2	90	021	○
Fresmak Arnold Twin	3	125	022	○
Garant NC-LC	3	125	023	○
Garant NC-TC	3	125	024	○
Gressel Centrinos	2	65	027	○
Gressel Centrinos	2	100	028	○
Gressel Duogrip all types	3	100	029	○
Gressel Duogrip all types	3	125	030	○
Gressel Grepos 5X	3	125	031	○
Gripos all types	3	100	032	○
Gripos all types	3	125	033	○
Hilma CS	2	80	040	○
Hilma DCS	2	80	041	○
Hilma DS/TS	2	100	042	○
Hilma DS/TS	3	125	043	○
Hilma KNC	3	125	046	○
Hilma KNC	4	160	047	○
Hilma SCS	2	80	048	○
Hilma SCS	3	120	049	○
Röhm KZS all types	2	80	052	○
Röhm KZS all types	3	125	053	○
Röhm RKD all types	3	125	057	○
Röhm RKE/RKG all types	3	125	058	○
Röhm RKE 160	4	160	059	○
Röhm RKZ all types	3	125	061	○
Schunk KSP-250, KSH-250 all types	3	125	076	○

Prod. Gr. 281

ATORN® Interchangeable jaw grips in aluminium and steel

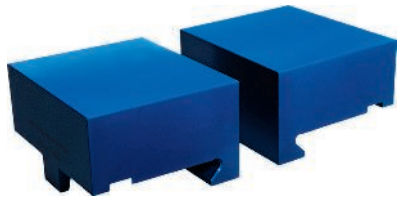
Suitable for ATORN quick-jaw-change system

Application:
For optimum adaptation of workpiece contour and clamping surface

Execution:
- Soft, machinable interchangeable jaw grips
- For the ATORN click system
- **Ident. No. 242–267:** Interchangeable jaw grips made of high-strength aluminium
- **Ident. No. 271–296:** Interchangeable jaw grips made of case-hardening steel

Advantage:
- Interchangeable jaw grips are available in many widths
- By milling down the old clamping contours, the interchangeable jaw grips can be used over and again

Notes:
System size of plain jaw and interchangeable jaw grips must be the same





					Aluminium interchangeable jaw grip		Steel inter-changeable jaw grip	
Material	Size	Jaws width (mm)	L1 (mm)	L2 (mm)	28892... Ident. No.		28892... Ident. No.	
Aluminium	2	65	36	49	242	○	-	-
Aluminium	2	70	36	49	243	○	-	-
Aluminium	2	80	36	49	244	○	-	-
Aluminium	2	90	36	49	245	○	-	-
Aluminium	2	100	36	49	246	○	-	-
Aluminium	3	125	36	49	247	○	-	-
Aluminium	2	160	36	49	248	○	-	-
Aluminium	2	180	36	49	249	○	-	-
Aluminium	3	80	45	59	250	○	-	-
Aluminium	3	90	45	59	251	○	-	-
Aluminium	3	100	45	59	252	○	-	-
Aluminium	3	125	45	59	253	●	-	-
Aluminium	3	140	45	59	254	○	-	-
Aluminium	3	160	45	59	255	○	-	-
Aluminium	3	180	45	59	256	○	-	-
Aluminium	3	200	45	59	257	○	-	-
Aluminium	3	225	45	59	258	○	-	-
Aluminium	3	250	45	59	259	○	-	-
Aluminium	4	80	52	69	260	○	-	-
Aluminium	4	100	52	69	261	○	-	-
Aluminium	4	125	52	69	262	○	-	-
Aluminium	4	160	52	69	263	○	-	-
Aluminium	4	200	52	69	264	○	-	-
Aluminium	4	250	52	69	265	○	-	-
Aluminium	4	300	52	69	266	○	-	-
Aluminium	4	400	52	69	267	○	-	-
Steel	2	65	36	49	-	-	271	○
Steel	2	70	36	49	-	-	272	○
Steel	2	80	36	49	-	-	273	○
Steel	2	90	36	49	-	-	274	○
Steel	2	100	36	49	-	-	275	○
Steel	2	125	36	49	-	-	276	○
Steel	2	160	36	49	-	-	277	○
Steel	2	180	36	49	-	-	278	○
Steel	3	80	45	59	-	-	279	○
Steel	3	90	45	59	-	-	280	○
Steel	3	100	45	59	-	-	281	○
Steel	3	125	45	59	-	-	282	●
Steel	3	140	45	59	-	-	283	○
Steel	3	160	45	59	-	-	284	○
Steel	3	180	45	59	-	-	285	○
Steel	3	200	45	59	-	-	286	○
Steel	3	225	45	59	-	-	287	○
Steel	3	250	45	59	-	-	288	○
Steel	4	80	52	69	-	-	289	○
Steel	4	100	52	69	-	-	290	○
Steel	4	125	52	69	-	-	291	○
Steel	4	160	52	69	-	-	292	○
Steel	4	200	52	69	-	-	293	○
Steel	4	250	52	69	-	-	294	○
Steel	4	300	52	69	-	-	295	○
Steel	4	400	52	69	-	-	296	○

Prod. Gr. 281

ATORN® Ejector for quick-jaw-change system

Application:
For lifting out interchangeable jaw grips from plain jaws.

28892...	Jaw quick-change system	Ident. No.	000
			●

Prod. Gr. 281

Advantage:
- Ejector suitable for all systems



Quick-change system for jaws (click system)

ATORN® adapter plate for pendulum jaw system 3 can be attached to the ATORN jaw quick-change system (click system)

for many vices

Application:
There are suitable plain jaws for many vices for mounting the adapter plate, see page 977 of H+K catalogue 2016/17, ref. no.
28892...

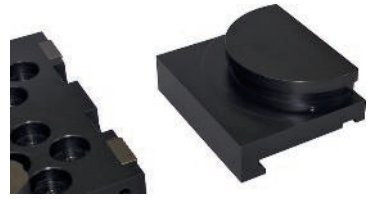
Execution:
- easy set-up of adapter plate by clicking into the interface
- Patented quick-change system 3, allows the adapter plate to be set up on the vice or double pendulum jaw in seconds.
- 2 quick-change systems in one without tools

Advantage:
- AVAILABLE FOR many VICES. ATORN, RÖHM, SCHUNK, ALLMATIC, HILMA, WNT ETC.

Delivery:
1 piece adapter plate, suitable for ref. no. 28791125 quick-change jaws size 3

Size	28792... Ident. No.	
3	030	●

Prod. Gr. 280



Adapter plate with quick-change interface. Alternatively, on request:
Suitable to directly adapt the vice interface.

ATORN® Pendulum plate system 3

Movable pendulum jaw, 4.5 degrees

Application:
the flexible double pendulum jaws with the 4.5° rotatable pressure pieces adjust to any unevenness and transmit the force optimally into the workpiece.
all materials such as e.g. steel, plastic, cast iron, non-ferrous metals
- clamping on scale layers, flame cuts, saw cuts, milled or ground surfaces
- plates, round and rectangular materials

Execution:
- clamping of raw parts
- first and second clamping (ATORN system with quick-change function.
- multi grip and pressure pieces (order separately)
- rigid construction of system to prevent any vibrations
- extension of the jaw width from 140 to 180 mm

Advantage:
- available for many vices
- no more preliminary shaping
- extremely fast retooling
- quick-change system can be used with various replaceable vices.
- reduced material procurement costs, as ideal for clamping raw parts

Delivery:
ref. no. 28792031 1 piece pendulum plate jaw width 140mm excl. pressure pieces, suitable for ref. no. 28792030
ref. no. 28792032 1 piece pendulum plate jaw width 180mm excl. pressure pieces, suitable for ref. no. 28792030

Size	Width of clamping jaw (mm)	28792... Ident. No.	
3	140	031	●
3	180	032	●

Prod. Gr. 280



Ident. No. 031
Pressure piece and universal pressure piece shown in the picture are not included in the scope of delivery.
Please order separately, ref. no. 28792001-004



ATORN® Fixed jaw system 3

accessories and counterpart for the ATORN pendulum plate

Application:
4 different pressure pieces on the fixed jaws with:
pointed grooves and steel, smooth and flat-grooved grip, replaceable.

Execution:
- with quick-change interface upon request (alternatively, suitable, for direct adaptation to interface of the vice used)

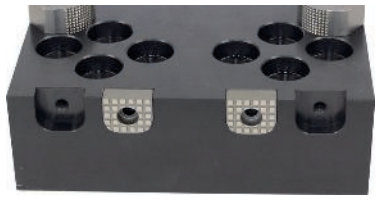
Delivery:
ref. no. 28792033 1 piece fixed jaw, jaw width 140mm excl. pressure pieces, suitable for ref. no. 28791125 quick-change jaws size 3
ref. no. 28792034 1 piece fixed jaw, jaw width 180mm excl. pressure pieces, suitable for ref. no. 28791125 quick-change jaws size 3

Size	Width of clamping jaw (mm)	28792... Ident. No.	
3	140	033	●
3	180	034	●

Prod. Gr. 280



Ident. No. 033
Insert as shown in the picture (flat-grooved) not included in the scope of delivery.
Please order flat-grooved, pointed-grooved, flat and grip inserts separately, ref. no. 28792005-009



Ident. No. 034
Insert as shown in the picture (flat-grooved) not included in the scope of delivery.
Please order flat-grooved, pointed-grooved, flat and grip inserts separately, ref. no. 28792005-009

ATORN® Pressure piece

accessories for pendulum jaws and fixed jaws

Application:
replaceable pressure pieces for pendulum jaws and fixed jaws.

Delivery:
ref. no. 28792001 delivery: 1 piece pressure piece, flat grooves, suitable for ref. no. 28792 031 and 032
ref. no. 28792002 delivery: 1 piece pressure piece, pointed grooves, suitable for ref. no. 28792 031 and 032
ref. no. 28792003, delivery: 1 piece flat pressure piece, suitable for ref. no. 28792 031 and 032
"Ref. no. 28792004 universal pressure piece, swivelling, with 4 different clamping side, flat, flat grooves, pointed grooves and grip.
delivery: 1 piece universal pressure piece, incl. screw, suitable for ref. no. 28792 031, 032, 033 and 034
ref. no. 28792009, delivery: 1 piece grip pressure piece, suitable for ref. no. 28792 031 and 032



Ident. No. 004
Ref. no. 28792004 universal pressure piece, Design can be rotated on flat, flat grooves, pointed grooves and grip.

Size	Jaw design	28792... Ident. No.	
3	Flat grooves	001	●
3	Grooved tip	002	●
3	Flat	003	●
3	Flat | Flat grooves | Grooved tip | Gripp	004	●
3	Gripp	009	●

Prod. Gr. 280

ATORN® Insert

Accessories for fixed jaw (pendulum jaw)

Application:
Replaceable inserts for fixed jaws.

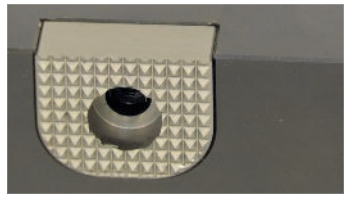
Delivery:
ref. no. 28792005 delivery: 1 piece insert, with flat grooves, incl. screw, suitable for ref. no. 28792 033 and 034
ref. no. 28792006, delivery: 1 piece insert, with pointed grooves, incl. screw, suitable for ref. no. 28792 033 and 034
ref. no. 28792007, delivery: 1 piece insert, flat, incl. screw, suitable for ref. no. 28792 033 and 034
ref. no. 28792008, delivery: 1 piece grip insert, incl. screw, suitable for ref. no. 28792 033 and 034

Jaw design	28792... Ident. No.	
Flat grooves	005	●
Grooved tip	006	●
Flat	007	●
Gripp	008	●

Prod. Gr. 280



Ident. No. 005



Ident. No. 006

ATORN® Pendulum jaw set, full equipment
in case

Application:
The flexible double pendulum jaws with the rotatable pressure pieces adjust to any unevenness and transmit the force optimally into the workpiece.

Delivery:
ref. no. 28792044:
ref. no. 28792014: 1 piece each 28792049, 28792033, 28792030, 28792031, 2 pieces each 28792001, 28792002, 28792003, 28792005,
28792006, 28792007, 28792008, 28792009, 4 pieces each of 28792004
ref. no. 28792048:
ref. no. 28792018: 1 piece each 28792049, 28792034, 28792030, 28792032, 2 pieces each 28792001, 28792002, 28792003, 28792005,
28792006, 28792007, 28792008, 28792009, 4 pieces each of 28792004





Size	Width of clamping jaw (mm)	28792... Ident. No.	
3	140	044	○
3	180	048	○

Prod. Gr. 280

ATORN® Pendulum jaw set in case
with flat grooves and universal

Application:
the flexible double pendulum jaws with the rotatable pressure pieces adjust to any unevenness and transmit the clamping force optimally into the workpiece.

Delivery:
ref. no. 28792014, contents of delivery for ref. no. 1 piece 28792 030, 031, 033, 4 pieces 28792004, 2 pieces 28792005, 2 pieces 28792001.
ref. no. 28792018, contents of delivery for ref. no. 1 piece 28792 030, 032, 034, 4 pieces 28792004, 2 pieces 28792005, 2 pieces 28792002




Size	Width of clamping jaw (mm)	Jaw design	28792... Ident. No.	
3	140	Flat grooves	014	○
3	180	Flat grooves	018	○

Prod. Gr. 280

ATORN® Multiple clamping rail sets

Application:
For quick and precise clamping of workpieces on vertical and horizontal machining centres, milling and grinding machines.

Execution:
- Clamping rail made of 21MnCr5 and plasma-nitrided, 58 HRC
- Scaling on clamping rail
- Wedge clamping device in various sizes can be used

Advantage:
- For clamping various workpieces in the tightest spaces
- Solve a number of clamping tasks with one clamping system
- All components of the system are compatible
- Easy-to-assemble limit stop system
- Low-cost clamping system

Delivery:
With 1 clamping rail with fixed smooth jaws and smooth wedge clamp. For number of pieces, see table.

Notes:
Other combinations on request. Clamping towers, base and head plates and more information on request.



Clamping rail length x clamping rail width x clamping rail height	Number of clamping rails (PCS)	Taper clamp length x taper clamp width x taper clamp height	Number of taper clamps (PCS)	Jaw length x jaw width x jaw height	Number of jaws (PCS)	28890... Ident. No.	
200 x 50 x 80 mm	1	60 x 39 x 22 mm	1	50 x 42 x 22 mm	2	250	○
200 x 80 x 80 mm	1	84 x 58 x 29 mm	1	72 x 42 x 29 mm	2	350	○
300 x 50 x 80 mm	1	60 x 39 x 22 mm	2	50 x 42 x 22 mm	3	450	○
300 x 80 x 80 mm	1	84 x 58 x 29 mm	2	72 x 42 x 29 mm	3	550	○
400 x 50 x 80 mm	1	60 x 39 x 22 mm	2	50 x 42 x 22 mm	3	650	○
400 x 80 x 80 mm	1	84 x 58 x 29 mm	2	72 x 42 x 29 mm	3	750	○
500 x 50 x 80 mm	1	60 x 39 x 22 mm	2	50 x 42 x 22 mm	3	850	○
500 x 80 x 80 mm	1	84 x 58 x 29 mm	2	72 x 42 x 29 mm	3	950	○

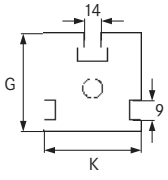
Prod. Gr. 280

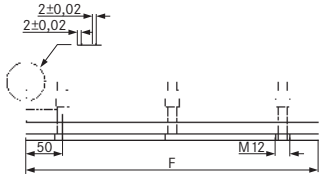
ATORN® Multiple clamping rails, individual

Application:
For quick and precise clamping of workpieces on vertical and horizontal machining centres.

Execution:
- Clamping rail made of 21MnCr5 and plasma-nitrided, 58 HRC
- 60° teeth
- Scaling on clamping rail
- All components are compatible
- Clamping repeatability of 0.01 mm with constant clamping force







Body length F (mm)		200	200	300	300	400	400	500	500
Body width K (mm)		50	80	50	80	50	80	50	80
Body height G (mm)		80	80	80	80	80	80	80	80
Number of through-holes (PCS)		2	2	3	3	3	3	3	3
28890...	Ident. No.	020	021	030	031	040	041	050	060
		○	○	○	○	○	○	○	○

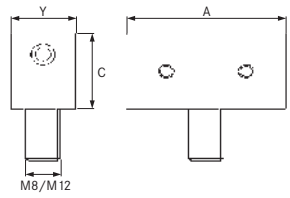
Prod. Gr. 280

ATORN® Fixed jaws incl. sliding block and screw

Accessories for multiple clamping vice

Execution:
- **Ident. No. 061–069:** Grooved





Taper clamp design	Jaw width A (mm)	Jaw thickness Y (mm)	Jaw height C (mm)	Fastening thread	28890... Ident. No.	
Smooth	22	22	15	M8	051	○
Smooth	32	22	15	M8	052	○
Smooth	42	22	15	M8	053	○
Smooth	30	42	22	M12	054	○
Smooth	40	42	22	M12	055	○
Smooth	50	42	22	M12	056	○
Smooth	42	42	29	M16	057	○
Smooth	72	42	29	M16	059	○
Smooth	57	42	29	M16	058	○
Serrated	22	22	15	M8	061	○
Serrated	32	22	15	M8	062	○
Serrated	42	22	15	M8	063	○
Serrated	30	42	22	M12	064	○
Serrated	40	42	22	M12	065	○
Serrated	50	42	22	M12	066	○
Serrated	42	42	29	M16	067	○
Serrated	57	42	29	M16	068	○
Serrated	73	42	29	M16	069	○
With claw fasteners	22	22	15	M8	071	○
With claw fasteners	32	22	15	M8	072	○
With claw fasteners	42	22	15	M8	073	○
With claw fasteners	30	42	22	M12	074	○
With claw fasteners	40	42	22	M12	075	○
With claw fasteners	50	42	22	M12	076	○
With claw fasteners	42	42	29	M16	077	○
With claw fasteners	57	42	29	M16	078	○
With claw fasteners	72	42	29	M16	079	○

Prod. Gr. 280

ATORN® Wedge clamping device incl. sliding block and screw

Accessories for 2889020-060 and 28892250-950

Execution:
- **Ident. No. 101–109:** Grooved
- **Ident. No. 111–119:**
  - Soft machinable
  - With 4 mm allowance on each side



Ident. No. 091–099



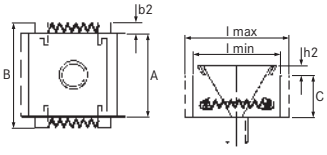
Ident. No. 101–109



Ident. No. 111–119



Ident. No. 121–129



Taper clamp design	Smooth	Smooth	Smooth	Smooth	Smooth	Smooth	Smooth	Smooth
Wedge clamping device width B (mm)	30	40	50	40	50	60	54	69
Jaw width A (mm)	22	32	42	30	40	50	42	57
Wedge clamping device height C (mm)	15	15	15	22	22	22	29	29
Max. length (mm)	31	31	31	45	45	45	58	58
Min. length (mm)	27	27	27	39	39	39	48	48
Height h2 (mm)	4	4	4	7	7	7	11	11
Tension force (kN)	1500	1500	1500	3000	3000	3000	3000	3000
Fastening thread	M8	M8	M8	M12	M12	M12	M16	M16
28890... Ident. No.	091	092	093	094	095	096	097	098
	○	○	○	○	○	○	○	○

Taper clamp design	Smooth	Serrated	Serrated	Serrated	Serrated	Serrated	Serrated	Serrated
Wedge clamping device width B (mm)	84	30	40	50	40	50	60	54
Jaw width A (mm)	72	22	32	42	30	40	50	42
Wedge clamping device height C (mm)	29	15	15	15	22	22	22	29
Max. length (mm)	58	31	31	31	45	45	45	58
Min. length (mm)	48	27	27	27	39	39	39	48
Height h2 (mm)	11	4	4	4	7	7	7	11
Tension force (kN)	3000	1500	1500	1500	3000	3000	3000	3000
Fastening thread	M16	M8	M8	M8	M12	M12	M12	M16
28890... Ident. No.	**099**	**101**	**102**	**103**	**104**	**105**	**106**	**107**
	○	○	○	○	○	○	○	○

Taper clamp design	Serrated	Serrated	With allowance	With allowance	With allowance	With allowance	With allowance	With allowance
Wedge clamping device width B (mm)	69	84	30	40	50	40	50	60
Jaw width A (mm)	57	72	22	32	42	30	40	50
Wedge clamping device height C (mm)	29	29	15	15	15	22	22	22
Max. length (mm)	58	58	31	31	31	45	45	45
Min. length (mm)	48	48	27	27	27	39	39	39
Height h2 (mm)	11	11	4	4	4	7	7	7
Tension force (kN)	3000	3000	1500	1500	1500	3000	3000	3000
Fastening thread	M16	M16	M8	M8	M8	M12	M12	M12
28890... Ident. No.	**108**	**109**	**111**	**112**	**113**	**114**	**115**	**116**
	○	○	○	○	○	○	○	○

Taper clamp design	With allowance	With allowance	With allowance	With claw fasteners	With claw fasteners	With claw fasteners	With claw fasteners	With claw fasteners
Wedge clamping device width B (mm)	54	69	84	30	40	50	40	50
Jaw width A (mm)	42	57	72	22	32	42	30	40
Wedge clamping device height C (mm)	29	29	29	15	15	15	22	22
Max. length (mm)	58	58	58	31	31	31	45	45
Min. length (mm)	48	48	48	27	27	27	39	39
Height h2 (mm)	11	11	11	4	4	4	7	7
Tension force (kN)	3000	3000	3000	1500	1500	1500	3000	3000
Fastening thread	M16	M16	M16	M8	M8	M8	M12	M12
28890... Ident. No.	**117**	**118**	**119**	**121**	**122**	**123**	**124**	**125**
	○	○	○	○	○	○	○	○

Taper clamp design	With claw fasteners	With claw fasteners	With claw fasteners	With claw fasteners
Wedge clamping device width B (mm)	60	54	69	84
Jaw width A (mm)	50	42	57	72
Wedge clamping device height C (mm)	22	29	29	29
Max. length (mm)	45	58	58	58
Min. length (mm)	39	48	48	48
Height h2 (mm)	7	11	11	11
Tension force (kN)	3000	3000	3000	3000
Fastening thread	M12	M16	M16	M16
28890... Ident. No.	**126**	**127**	**128**	**129**
	○	○	○	○

Prod. Gr. 280

ATORN® Adjustable clamps, 4-part

Accessories for 28890

Application:
For fastening the clamping rails on the machine table.



Number of pieces in assortment/set (PCS)			4
28890...	Adjustable clamps	Ident. No.	170 ○

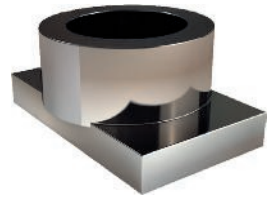
Prod. Gr. 280

ATORN® Positioning sleeve for multiple clamping vices

Accessories for 28890

Application:
For quick alignment on the T-groove machine table.

Execution:
- 20 H7 fit



Ident. No. 180

28890...	positioning sleeve Ø20H7 X T-slot width 14 mm	Ident. No.	180 ○
28890...	positioning sleeve Ø20H7 X T-slot width 18 mm	Ident. No.	190 ○

Prod. Gr. 280



Ident. No. 190

ATORN® Clamping jaw with positioning pins

Application:
The ATORN clamping jaw system with positioning pins eliminates the need for laborious and time-consuming adjustments using clamping fixtures.
Practical, rapid and simple position fixing of workpieces in a matter of seconds.

Execution:
- Positioning pins are retracted and ejected mechanically
- High-quality tool steel, gas-nitrided (hardened)
- Repeat accuracy ± 0.01mm

Advantage:
- Patented mechanical system that moves all pins into position at the press of the thumb (Fig. 1+2)
- By pushing away the pins that are not needed (Fig. 3), almost all contact and clamping positions can be achieved



III.1



III. 2



III. 3



Jaw type			Solid	Movable	Solid	Movable
Jaws width (mm)			125	125	160	160
26111...	Suitable jaws for: Allmatic 3020/125Basic, 1020/125 HD125 1001/125 HD125 swivel plate, 2013/125 LC mech.	Ident. No.	301 ●	302 ●	-	-
26111...	Suitable jaws for: Allmatic 3020/160Basic, 1020/160 HD160 10 2013/160 LC mech.	Ident. No.	-	-	303 ○	304 ○
26111...	Suitable jaws for: Hilma NC 125 ref. no. 28848 126 NC 125H, EL 125 ref. no. 28862 126 KNC 125	Ident. No.	305 ●	306 ●	-	-
26111...	Suitable jaws for: Hilma NC 160 ref. no. 28848 161 NC 160H, EL 160 ref. no. 28862 161 KNC 160	Ident. No.	-	-	307 ●	308 ●
26111...	suitable jaws for: ATORN ref. no.28874125 ATORN ref. no. 28741 125 Kesel CNC 125 ref. no. 28812 125 Bull pneumatic 125 ref. no. 28730 225 Bull 125 mechanical ref. no. 28730 125 ARNO 125 Roehm: RKE 125 28878 125 RKE-U125 RKE-UL125 RKG-L125 RKE-LV125	Ident. No.	309 ●	310 ●	-	-
26111...	suitable jaws for: ATORN ref. no. 28874160 ATORN ref. no. 28874 160 Kesel CNC 160 ref. no. 28812 160 Bull pneumatic 160 ARNO 160 Bull 160 mechanical, Roehm: RKE ref. no.160 28878 160 RKE-U160 RKE-UL160 RKG-L160 RKE-LV 160	Ident. No.	-	-	311 ●	312 ●

Prod. Gr. 281

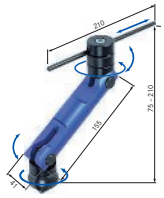
ATORN® Workpiece stop

Adjustable in five axes

Application:
For use on drilling and milling machines.

Execution:
- Flexible and sturdy and quick to adjust
- For T-shaped sliding blocks with M8 thread

Delivery:
With T-shaped sliding blocks, 12 and 14 mm



26111...	Ident. No.	020
		●

Prod. Gr. 281

ATORN® Magnetic parallel rest sets

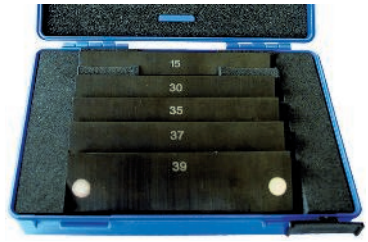
Application:
For packing underneath workpieces.

Execution:
- Height tolerance ± 0.01
- Rest pairs made of hardened tool steel with approx. 62 HRC
- Surfaces burnished
- Width 2.5 mm, which makes drilling close to the vice jaws possible

Advantage:
- Magnetic parallel rests for fast set-up time

Delivery:
In plastic case, 5 rest pairs each

Notes:
Individual parallel rests are also available upon request.

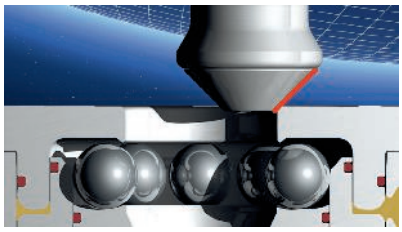


Parallel rest length (mm)		100	125	160
Parallel rest height		20 mm | 27 mm | 29 mm | 31 mm | 32 mm	15 mm | 30 mm | 35 mm | 37 mm | 39 mm	22 mm | 30 mm | 37 mm | 42 mm | 47 mm
Parallel rest width (mm)		2.5	2.5	2.5
26255...	Ident. No.	100	125	160
		●	●	●

Prod. Gr. 281

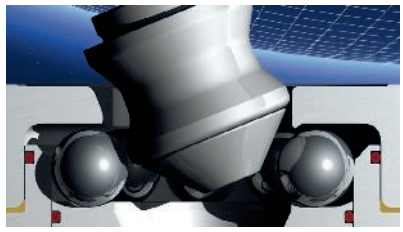
ATORN zero point clamping system
Convincing advantages in application, technology and maintenance

Large clutch movement



For feeding a pallet into the clamping module, a pre-positioning of 6.5 mm is sufficient.

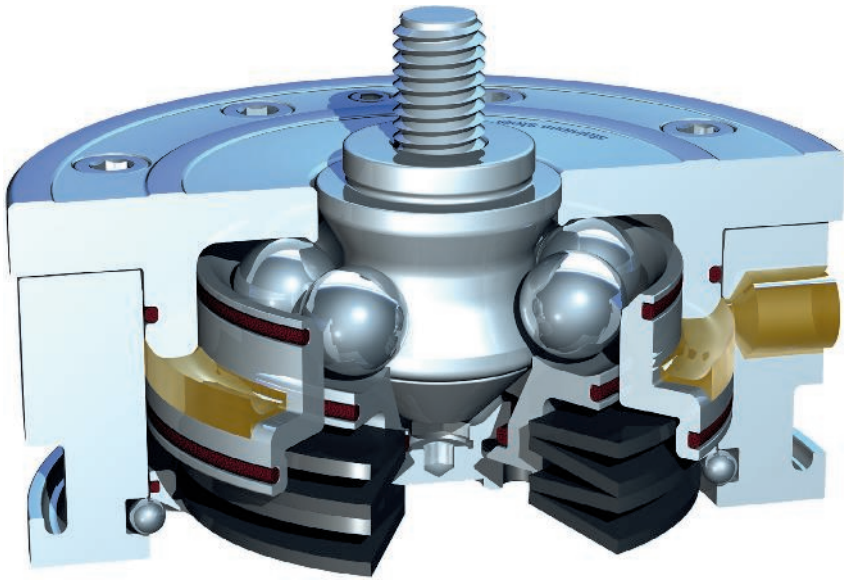
No canting



Cant-free retracting and extending through the optimal contour of the clamping nipple

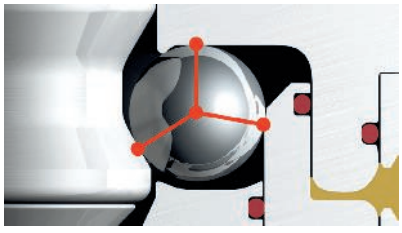
Large hold, feed and locking forces





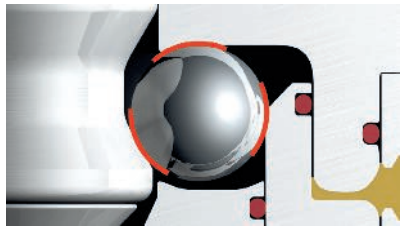
For detailed information on the PDF download, use your mobile phone to scan the QR code.

Three-stroke principle



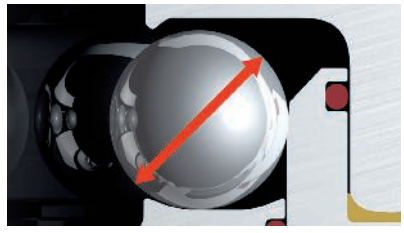
The force is distributed via a three-stroke principle. As a result, there are no shear loads of the balls.

Positive locking



The balls are positively enclosed on 3 sides. The forces evenly impact the balls and are optimally distributed.

Large ball diameter



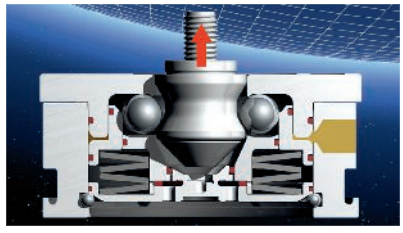
Better force distribution due to larger ball diameters.

No ball cage



The balls are exposed in the ball channel and always reposition themselves. Since the balls do not lie in a cage, dirt can easily be blown out with air.

Safety system

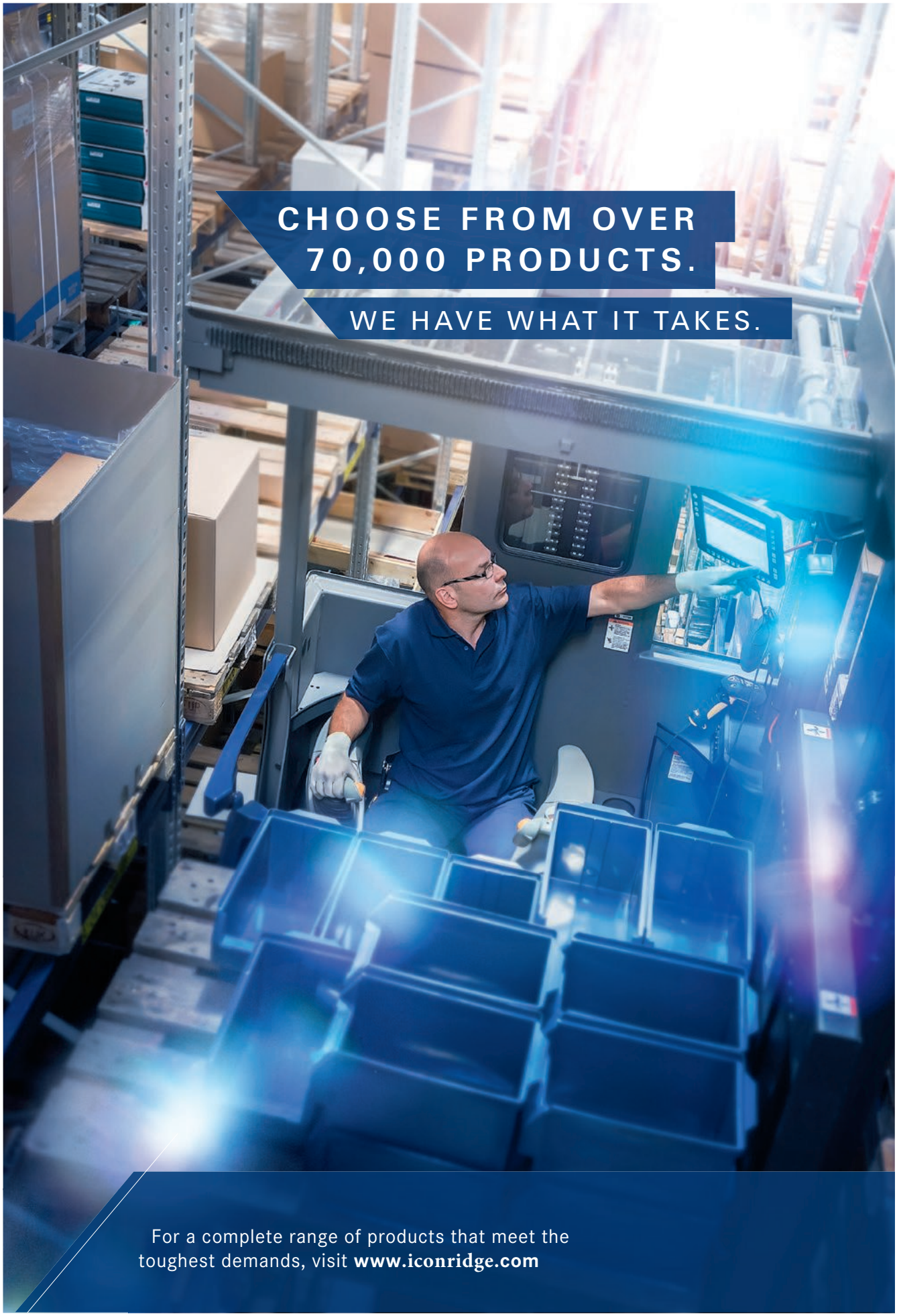


The system is absolutely process-safe. The clamping module can always be opened.

Stainless – stable – practicable



High-alloy, hardened tool steel – therefore no corrosion. Sturdy, suitable for industrial use and durable.



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

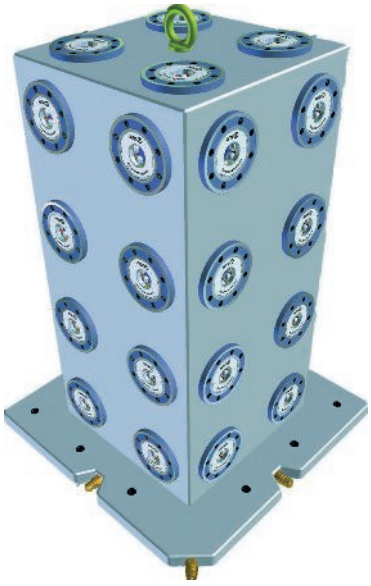
ATORN zero point clamping system
Technology that inspires

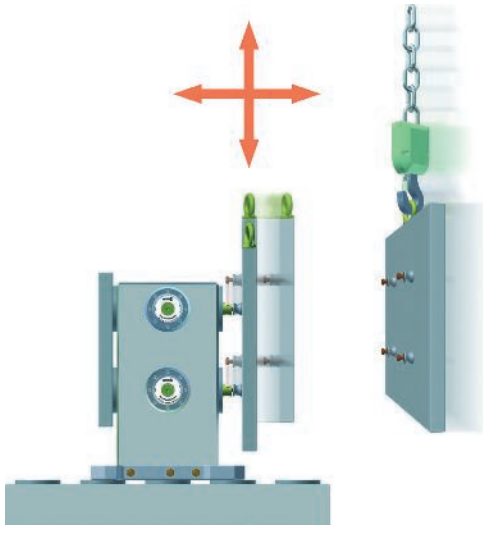


The ATORN® zero point clamping system does not shy away from comparison.
Experience the ATORN® zero point clamping system, which presents its strengths through innovative and trendsetting features in a progressive manner.

Benefits making the ATORN® zero-point clamping system unrivalled:

- **Use of different clamping nipples for highest positioning accuracy:**
  - Zero point nipple: positioned to absolute zero reference point
  - Sword nipple: fixates the free axis
  - Undersize nipple: only for clamping and holding function
- **Two options of different zero point definitions**
  - Classic: the zero point is defined by the zero point nipple in combination with the sword nipple
  - With temperature influence: the zero point is defined by the central axis through the exclusive use of sword nipples
- **Maintenance-free system**
  - Completely sealed system made from hardened stainless steel for maintenance-free working
- **Benefits in the application**
  - Easy to use due to the big catch feeder and the possibility of resistance-free import and export
- **Process safety through technical advantage**
  - Process reliability supported through the characteristics “three-stroke principle, form-fit and large sphere diameter”. Due to these characteristics, the force is optimally distributed and does not lose any effect







Process	Without zero point clamping system	With ATORN® zero point clamping system
Machine costs	EUR 80/h	EUR 80/h
Number of set-up processes per day	3x	3x
Set-up time per process	60 min.	1.5 min.
Set-up time per day	180 min. (3 hrs)	4.5 min. (0.075 hrs)
Set-up costs per day	EUR 240	EUR 6
Annual set-up costs on the basis of 240 working days	EUR 57,600	EUR 1,440
Annual savings		EUR 56,160

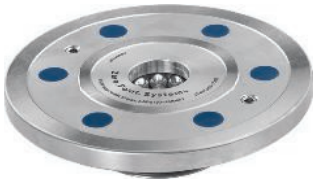
Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® mounting clamping module K10.2 and K20

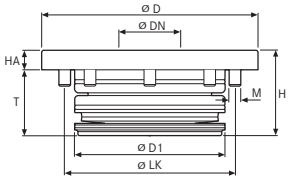
Application:
zero-point clamping system for clamping with optimised setup time for chip and chipless
processing in all areas, such as in the foods, pharmaceutical and chemical industries.

Execution:
- unlocks hydraulically
- lid and piston hardened
- repeat accuracy < 0.005 mm

Notes:
the built-in clamping modules have high hold, feed and locking forces at very small
installation dimensions. hydraulic pressure is only required for loosening (min. 50 bar/max. 60 bar). the modules
are mechanically locked in clamped condition. the advantage here is that there are no disturbing lines and no leakage risk.
deliverable on request:
- mounting sketches
- automation solutions
- also deliverable as individual flange version



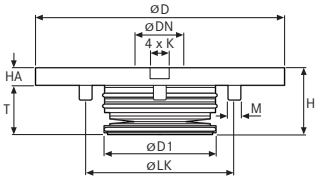
Ident. No. 500



Ident. No. 500



Ident. No. 107, 501



Ident. No. 107, 501

Model		without indexing	with indexing	with indexing
Type		K10.2	K10.2	K20
Retraction force/closing force		10 kN	10 kN	20 kN
Retaining force		25	25	55
D (mm)		112	112	112
DN (mm)		22	22	32
D1 (mm)		50	50	78
H (mm)		30	30	44
HA (mm)		22	22	34
M		M6	M6	M6
K (mm)		-	8	8
T (mm)		22	22	34
Weight (kg)		0.6	0.6	1.4
28981...	Ident. No.	500	501	107
		○	○	○

Prod. Gr. 280

ATORN® Multiple clamping stations K10.2

Execution:
- unlocks hydraulically
- repeat accuracy < 0.005 mm
- unhardened steel
- the clamping systems are already equipped with mounting holes (for the most common table grooves sizes 63, 100 and 125 mm) and positioning aids. the clamping stations are ready for immediate commissioning. connections are already bolted.
- the clamping station with purge has 2 connections: 1 x open hydraulically, 1 x pneum. purge
- the clamping station is suitable for table groove sizes 63, 100 and 125 mm

Advantage:
- low overall height of only 36 mm

Notes:
mounting sketches, other sizes as well as clamping stations especially tailored to your machine deliverable on request.



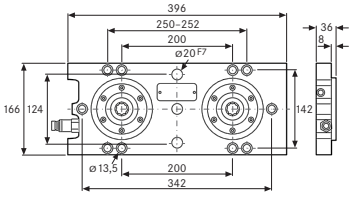
Ident. No. 502



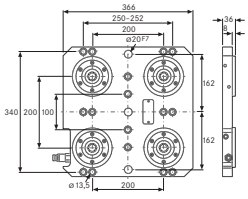
Ident. No. 504



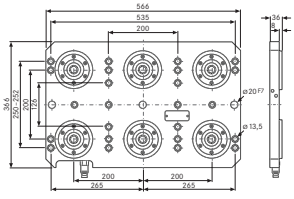
Ident. No. 506



Ident. No. 502



Ident. No. 504



Ident. No. 506

Type		2x clamping station	4x clamping station	6x clamping station
Retraction force/closing force		2 x 10 kN	4 x 10 kN	6 x 10 kN
Retaining force (kN)		25	25	25
Weight (kg)		14	30	46
28981...	Ident. No.	502	504	506
		○	○	(○)+

Prod. Gr. 280

ATORN® Multiple clamping stations K20

Execution:
- unlocks hydraulically
- repeat accuracy < 0.005 mm
- unhardened steel
- on request, mounting holes can be created in the base plate according to your specifications.
- the clamping station is equipped with 1 connection: 1 x hydraulic opening.
- mounting sketches, other sizes as well as clamping stations especially tailored to your machine deliverable on request.

Advantage:
- low overall height of only 46 mm



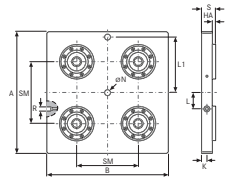
Ident. No. 069



Ident. No. 073



Ident. No. 174



Type		2x clamping station	4x clamping station	6x clamping station
Retraction force/closing force		2 x 20 kN	4 x 20 kN	6 x 20 kN
Retaining force (kN)		55	55	55
A (mm)		196	396	396
B (mm)		396	396	596
HA (mm)		10	10	10
K (mm)		19	19	20
L (mm)		45	53	50
L1 (mm)		180	180	180
N (mm)		20	20	20
R		G 1/4 inch	G 1/4 inch	G 1/4 inch
S (mm)		46	46	46
SM (mm)		200	200	200
Weight (kg)		21.9	44	75
28981...	Ident. No.	**069**	**073**	**174**
		○	(○)+	(○)+

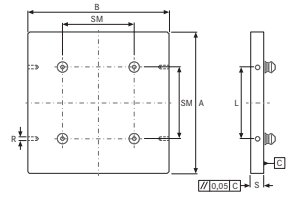
Prod. Gr. 280

ATORN® replacement pallets for K10.2 and K20

Execution:
- high-strength aluminium

Notes:
on request, mounting holes can be included in the replacement pallet according to your specifications.
other dimensions, bore gauges as well as the number of clamping nipple equipment deliverable on request





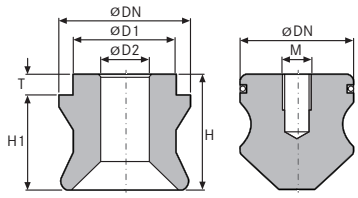
For tensioning station		K10.2 / 4-fold	K10.2 / 6-fold	K10.2 / 6-fold	K20 / 2-fold	K20 / 4-fold	K20 / 6-fold
A (mm)		366	366	-	196	396	396
B (mm)		366	566	-	396	396	596
L (mm)		200	200	200	120	200	200
R		M12	M12	M12	M12	M12	M12
S (mm)		30	30	-	40	40	40
SM (mm)		200	200	200	200	200	200
Weight (kg)		10	16	-	6	16	25
28981...	Ident. No.	**601**	**602**	**603**	**200**	**201**	**202**
		○	○	○	○	○	○

Prod. Gr. 280

ATORN® Clamping nipple

hardened, for hydraulic clamping modules





Type	DN (mm)	D1 (mm)	D2 (mm)	H (mm)	H1 (mm)	M	T (mm)	28981... Ident. No.	
zero-point nipple K10.2	22	15	8	19	16	-	3	079	○
strut nipple K10.2	22	15	8	19	16	-	3	080	○
undersize nipple K10.2	21.8	15	8	19	16	-	3	081	○
protection nipple K10.2	21.8	-	-	-	-	M8	-	082	○
zero-point nipple K20	32	-	12	28	23	-	5	083	○
strut nipple K20	32	-	12	28	23	-	5	084	○
undersize nipple K20	31.8	-	12	28	23	-	5	085	○
protection nipple K20	31.8	-	-	-	-	M8	-	086	○

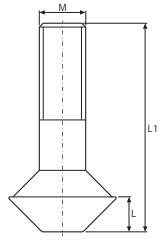
Prod. Gr. 280

ATORN® Nipple catchment screws

Execution:

- strength class 12.9
- versions in other lengths and materials (such as stainless steel) deliverable on request





Type		K10.2	K20
M		M8	M12
L (mm)		6	9
L1 (mm)		37	54
28981...	Ident. No.	092	093
		○	○

Prod. Gr. 280



ATORN® Air hydraulic pump

Application:
to open hydraulic clamping modules or clamping stations.

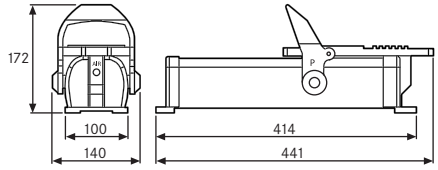
Execution:
- compact, compressed air operated hydraulic pump for single-acting circuits. the pump is equipped with a
- built-in safety valve which controls the hydraulic output pressure.
- the factory default setting of the safety valve is max. operating pressure of 60 bar.
- through the expansion body in the oil tank, the pump can be used horizontally and vertically.
- connecting thread air: G1/4
- connecting thread oil: G1/4

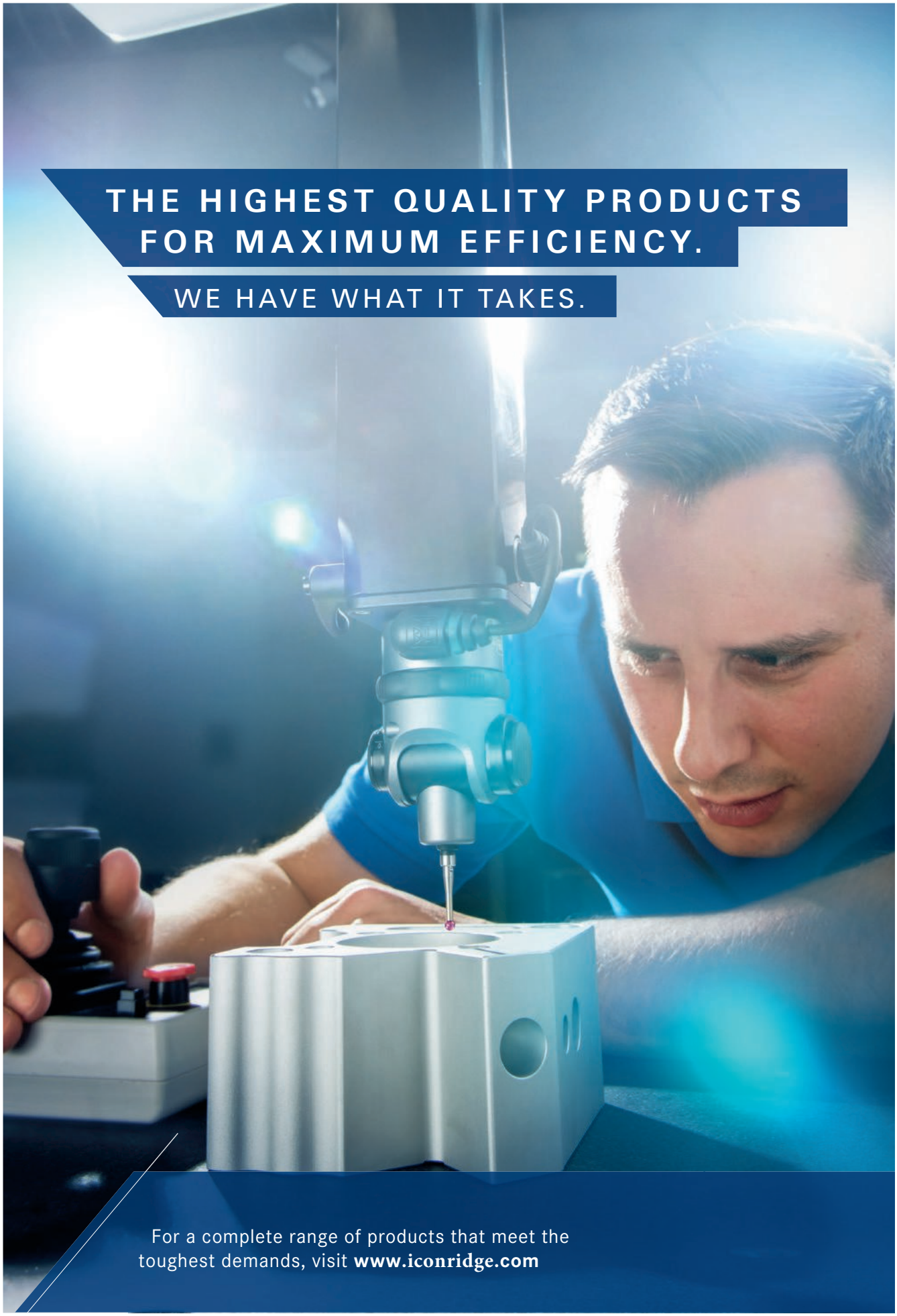
Notes:
the pump is filled with a commercially available hydraulic oil (HLP32) for operation



Min./max. air pressure	Effective oil volume (cm^3)	Max. feed quantity (l/min)	Weight (kg)	28981... Ident. No.	
4-6 bar	1000	0.75	5.9	535	○

Prod. Gr. 280





Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

Calibration



Calibration of measuring and test equipment

Hand-held devices



Vernier callipers



Depth callipers



Measuring tool sets



Micrometers



Internal micrometers

Gauges and dimensional standards



Gauge blocks



Test pins 1043



Thread gauges 1050

Dial gauges



Mechanical dial gauges



Electronic dial gauges



Precision pointers



Lever gauge probes

Manual measuring devices with dial indicator



Bore and comparative measuring instruments 1074

Auxiliary aids for dial gauges



Measuring stands



Measuring tables

Marking-off and height measuring instruments



Marking-off devices

Measuring aids



Prisms



Tape rules

Scales and rules



Angle measuring and setting devices

Spirit levels and levelling devices

Measurement data transmission and processing



Measuring modules



Connection cable for measuring instruments

Magnifying lenses and technical endoscopy



Magnifying glasses 1138

Hardness testing



Mobile hardness testing devices



Shore hardness testing devices

Force measurement and weighing technology



Spring balances



Tensile and compressive force measuring instruments



Force measuring cells

Temperature and ambient conditions monitoring



Infrared temperature-measuring instruments

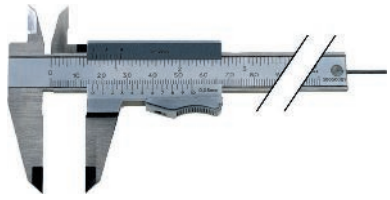
ATORN® Pocket vernier callipers (DIN 862)

A

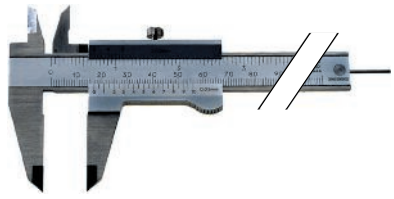
Application:
For measuring external, internal, step and depth dimensions.

Execution:
- Scale and vernier scale with anti-glare, brushed chromium-plated finish
- Measuring and guiding surfaces hardened

Delivery:
In a case



No. 31002



No. 31003 010

Min./max. length measuring range					0-100 mm		0-150 mm		0-150 mm	
				Type of locating	With locking screw		With torque clamping		With locking screw	
Length of jaw (mm)	Vernier scale	Vernier scale (imperial)	Depth gauge rod	Depth gauge rod thickness (mm)	31003... Ident. No.		31002... Ident. No.		31003... Ident. No.	
30	0.05 mm	-	Flat	-	005	●	-	-	-	-
40	0.05 mm	1/128 inch	Round	1.5	-	-	010	●	010	●
					Price/unit, €					

Prod. Gr. 3AC

ATORN® Pocket vernier calipers with flat depth gauge (DIN 862)
with high-quality finish

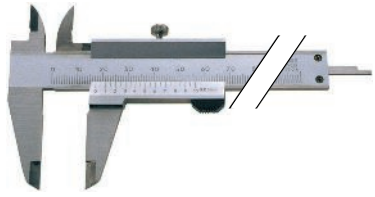
A

Application:
For measuring external, internal, step and depth dimensions.

Execution:
- Scale and vernier scale with anti-glare, brushed chromium-plated finish
- Hardened measuring and bearing surfaces

Advantage:
- High quality vernier callipers with special finish
- Millimetre graduation with very clear digits

Delivery:
In a case



Min./max. length measuring range			0-150 mm		0-150 mm	
		Type of locating	With locking screw		With torque clamping	
Length of jaw (mm)	Vernier scale	Depth gauge rod	31065... Ident. No.		31065... Ident. No.	
40	0.05 mm	Flat	110	●	120	●
			Price/unit, €			

Prod. Gr. 3AC

ATORN® ORION® Pocket vernier calipers (DIN 862)

with parallax-free vernier scale reading

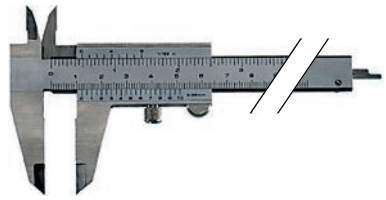
A

Application:
For measuring external, internal, step and depth dimensions.

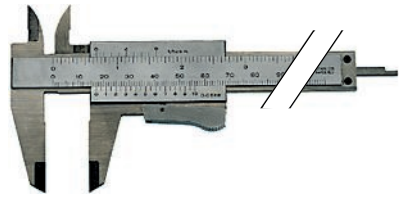
Execution:
- Scale and vernier scale with anti-glare, brushed chromium-plated finish
- Measuring and guiding surfaces hardened
- **No. 31007:** With double vee block guide

Advantage:
- Vernier and scale are on the same level, making it easier to read from the side
- **No. 31007:** Minimal guide play and optimum sliding properties

Delivery:
In a case



No. 31007
With double Vee block guide



No. 31004
With quick adjustment

				ATORN®		ORION®		ORION®	
			Min./max. length measuring range	0-150 mm		0-150 mm		0-150 mm	
			Type of locating	With locking screw		With locking screw		With torque clamping	
Length of jaw (mm)	Vernier scale	Vernier scale (imperial)	Depth gauge rod	31007... Ident. No.		31006... Ident. No.		31004... Ident. No.	
40	0.05 mm	1/128 inch	Flat	010	●	010	●	010	●
				Price/unit, €					

ATORN® = Prod. Gr. 3AC
ORION = Prod. Gr. 3BA

IP degrees of protection in accordance with DIN EN 60529

Degrees of protection against dust		Degrees of protection against water	
IP	**first number**	**IP**	**second number**
0	Not protected	0	Not protected
1	Protected against solid foreign bodies 50 mm in diameter and larger	1	Protected against dripping water
2	Protected against solid foreign bodies 12.5 mm in diameter and larger	2	Protected against dripping water where housing is inclined at angle of up to 15°
3	Protected against solid foreign bodies 2.5 mm in diameter and larger	3	Protected against spray
4	Protected against solid foreign bodies 1.0 mm in diameter and larger	4	Protected against splash water
5	Dust-protected	5	Protected against hose water
6	Dust-proof	6	Protected against heavy jets of hose water
		7	Protected against impact of temporary submersion in water
		8	Protected against impact of continual submersion in water

ATORN® Electronic pocket vernier calipers (DIN 862)

with data output

multiCOM A

Application:
For measuring external, internal, step and depth dimensions.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch switch-over
- Auto off
- ABS function
- Keeptronic System
- High-contrast display, 8.5 mm digit height

Advantage:
- Key lock to prevent unintentional adjustment
- Switched on by the ON button or automatically switched on by calliper movement
- Particularly energy-saving electronics (battery lifetime up to 3 years)

Delivery:
In a case, with battery (1 x 3 V lithium type CR 2032)



Ident. No. 301
Ref. no. 112



Min./max. length measuring range	Digit increment (mm)	Length of jaw (mm)	Depth gauge rod	Depth gauge rod thickness (mm)	Data transmission type Preset function	No 31173... Ident. No.		multiCOM 31173... Ident. No.	
0-150 mm	0.01	40	Round	1.5	No	102	●	-	-
0-150 mm	0.01	40	Flat	-	No	103	●	-	-
0-150 mm	0.01	40	Round	1.5	Yes	-	-	112	●
0-150 mm	0.01	40	Flat	-	Yes	-	-	113	●
0-300 mm	0.01	64	Without	-	Yes	-	-	301	●
						Price/unit, €			

Prod. Gr. 3CA
spare battery see no. 56815 210

ATORN® IP67 electronic pocket vernier calipers (DIN 862)

IP67

IP67 A

Application:
For measuring external, internal, step and depth dimensions.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch switch-over
- Auto off
- ABS function
- Keeptronic System
- High-contrast display, 8.5 mm digit height

Advantage:
- Key lock to prevent unintentional adjustment
- Switched on by the ON button or automatically switched on by calliper movement
- Particularly energy-saving electronics (battery lifetime up to 3 years)

Delivery:
In a case, with battery (1 x 3 V lithium type CR 2032)



Ident. No. 202

Min./max. length measuring range	Digit increment (mm)	Length of jaw (mm)	Depth gauge rod	Preset function	31173... Ident. No.	
0-150 mm	0.01	40	Flat	No	202	●
0-150 mm	0.01	40	Round	No	203	●
					Price/unit, €	

Prod. Gr. 3CA
spare battery see no. 56815 210

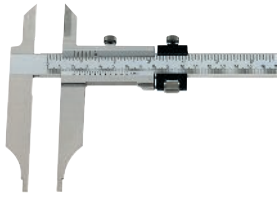
ATORN® Workshop vernier callipers (DIN 862)

A

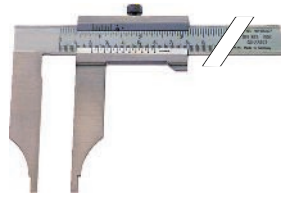
Application:
For measuring external and internal dimensions.

Execution:
- Vernier scale and scale with anti-glare, brushed chromium-plated finish

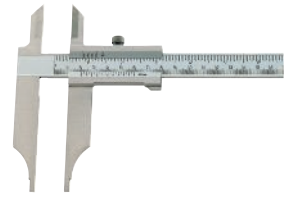
Delivery:
No. 31088: in box
No. 31091: In a case



No. 31092



No. 31088



No. 31091

Min./max. length measuring range			0-300 mm	0-500 mm	0-800 mm	0-1000 mm	0-1500 mm	0-2000 mm
Length of jaw (mm)			90	150	150	150	200	200
Inner measurement scales (mm)			10	20	20	20	30	30
Vernier scale			0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
31092...	With blade tips, with fine adjustment	Ident. No.	**003**	**005**	**008**	**010**	**015**	**020**
		Price/unit, €	●	●	●	●	(○)+	○
31088...	Without blade tips, without fine adjustment	Ident. No.	**103**	**105**	**108**	-	-	-
		Price/unit, €	●	●	●			
31091...	With blade tips, without fine adjustment	Ident. No.	**003**	**005**	**008**	**010**	-	-
		Price/unit, €	●	●	○	●		

Prod. Gr. 3AC

ATORN® Electronic workshop vernier callipers (DIN 862)

multiCOM IP 40 A

Application:
For measuring external and internal dimensions.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch switch-over
- Auto off
- Preset function
- ABS function
- Keeptronic System

Advantage:
- Key lock to prevent unintentional adjustment
- Switched on by moving the slider

Delivery:
in a wooden case, with battery (1 x 3 V lithium, type CR 2032)



No. 31150



No. 31151



No. 31152

Min./max. length measuring range			0-300 mm	0-500 mm	0-800 mm	0-1000 mm
Length of jaw (mm)			90	125	150	150
Digit increment (mm)			0.01	0.01	0.01	0.01
Inner measurement scales (mm)			10	20	20	20
31150...	with blade tips, without fine adjustment	Ident. No.	**130**	**150**	**180**	**200**
		Price/unit, €	●	●	●	●
31151...	with blade tips, with fine adjustment	Ident. No.	**130**	**150**	**180**	**200**
		Price/unit, €	●	●	●	○
31152...	without blade tips, with fine adjustment	Ident. No.	**230**	**250**	**280**	**300**
		Price/unit, €	●	●	○	○

Prod. Gr. 3CA
Spare battery see no. 56815 210

ATORN® Electronic universal vernier calipers set
Interchangeable gauge slides



Application:
For measuring various internal and external dimensions.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch changeover
- AUTO OFF
- Preset function
- ABS function

Advantage:
- Button locking prevents inadvertent adjustments
- Switched on by moving the slider
- Suitable for a wide range of measuring applications due to exchangeable M2.5 gauge slides

Delivery:
in a wooden case, with 2 pairs of gauge slides (ball Ø 5 mm, end face Ø 4.8 mm) setting dimension, with battery (1 x 3 V lithium, type CR 2032)

Min./max. length measuring range		0-150 mm
Digit increment (mm)		0.01
Length of jaw (mm)		40
31173...	Ident. No.	900
	Price/unit, €	●

Prod. Gr. 3CA
Spare battery see no. 56815 210

ATORN® Electronic internal groove vernier calipers



Ident. No. 312

Application:
For measuring internal recesses.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch switch-over
- Auto off
- Preset function

- ABS function
- Keeptronic System

Advantage:
- Key lock to prevent unintentional adjustment
- Switch on by moving the slider

Delivery:
in a wooden case, with battery (1 x 3 V lithium, type CR 2032)

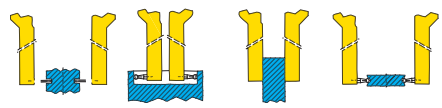
Min./max. length measuring range		10-160 mm	20-160 mm
Digit increment (mm)		0.05	0.05
Length of jaw (mm)		25	40
Measuring surface thickness (mm)		0.9	2
Min. internal length (mm)		10	20
31191...	Ident. No.	312	322
	Price/unit, €	●	●

Prod. Gr. 3CA
spare battery see no. 56815 210

ATORN® Electronic universal vernier calipers set
interchangeable gauge slides



Ident. No. 130



Example applications

Application:
For measuring various internal and external dimensions.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch switch-over
- Auto off
- Preset function
- ABS function

- Keeptronic System
- HOLD function

Advantage:
- Key lock to prevent unintentional adjustment
- Switch on by moving the slider

Delivery:
with gauge slide pairs no. 33149 ref. no. 150/140/100/180 in a wooden case with battery (1 x 3 V lithium type CR 2032)

Min./max. length measuring range		0-300 mm	0-500 mm
Digit increment (mm)		0.01	0.01
Length of jaw (mm)		90	100
Min. internal length (mm)		40	50
31155...	Ident. No.	130	150
	Price/unit, €	●	●

Prod. Gr. 3CA
Spare battery see no. 56815 210

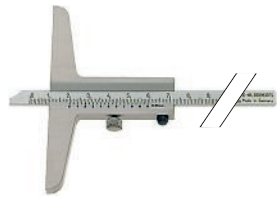
ATORN® Vernier depth calliper (DIN 862)

B

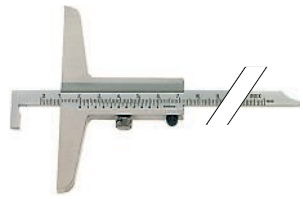
Application:
For measuring, e. g. bore depths, shoulders on workpieces etc.

Execution:
- Vernier scale and scale with anti-glare, brushed chromium plated finish
- Rails manufactured from one piece
- rust-proof
- **No. 31276:** Graduation on front
- **No. 31278:** Graduation on front and rear side for refitting

Delivery:
In box



No. 31276



No. 31278
Rail for refitting

Min./max. length measuring range		0-150 mm	0-200 mm	0-250 mm	0-300 mm	0-500 mm	0-500 mm	0-800 mm	0-1000 mm
Vernier scale		0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Bridge length x bridge width		100 x 8 mm	100 x 8 mm	130 x 12 mm	150 x 12 mm	150 x 12 mm	250 x 20 mm	250 x 20 mm	250 x 20 mm
31276...	Ident. No.	**015**	**020**	**025**	**030**	**050**	**055**	**075**	**100**
	Price/unit, €	●	●	●	●	●	●	○	(○)+
31278...	Ident. No.	**015**	**020**	**025**	**030**	**050**	**055**	**075**	**100**
	Price/unit, €	●	●	●	●	●	○	○	(○)+

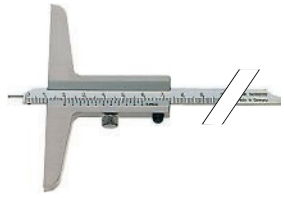
Prod. Gr. 3CB

ATORN® Depth callipers (DIN 862)
With measuring pins

B

Application:
For measuring, e. g. bore depths, shoulders on workpieces etc.

Execution:
- Rails manufactured from one piece
- **Ident. No. 080:**
  - vernier scale is glare free brushed chromium-plated
  - Graduation on front
- **Ident. No. 150–300:**
  - Vernier scale and scale with anti-glare, brushed chromium plated finish
  - Graduation on front and rear side for refitting



Rail for refitting

Min./max. length measuring range		0-80 mm	0-150 mm	0-200 mm	0-250 mm	0-300 mm
Vernier scale		0.05 mm	0.05 mm	0.05 mm	0.05 mm	0.05 mm
Bridge length x bridge width		50 x 8 mm	100 x 8 mm	100 x 8 mm	130 x 12 mm	150 x 12 mm
31216...	Ident. No.	**080**	**150**	**200**	**250**	**300**
	Price/unit, €	●	●	●	●	●

Prod. Gr. 3CB

ATORN® Electronic depth callipers IP67 (DIN 862)

With data output

Application:
For measuring e. g. hole depths, offsets on workpieces, etc.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch changeover
- AUTO OFF
- Hold function
- ABS function
- Keeptronic system
- PRESET function

Advantage:
- Button locking prevents inadvertent adjustments
- Switched on by moving the slider

Delivery:
in a wooden case, with battery (1 x 3 V lithium, type CR 2032)





31281

Min./max. length measuring range		0-200 mm	0-300 mm	0-500 mm	0-1000 mm
Digit increment (mm)		0.01	0.01	0.01	0.01
Bridge length x bridge width		100 x 8 mm	150 x 9 mm	150 x 9 mm	250 x 12 mm
31280...	Ident. No.	**120**	**130**	**150**	**200**
	Price/unit, €	●	●	●	○
31281...	Ident. No.	-	**130**	**150**	-
	Price/unit, €		●	○	

Prod. Gr. 3CC
Spare battery see no. 56815 210

ATORN® Depth callipers (DIN 862)

With mount for sliding measuring bridges

Application:
For measuring, e. g. hole depths, distances on workpieces etc.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch switch-over
- Auto off
- ABS function
- Keeptronic System

Advantage:
- Key lock to prevent unintentional adjustment
- Switched on by moving the slider

Delivery:
in a wooden case, with battery (1 x 3 V lithium, type CR 2032)



Min./max. length measuring range		0-300 mm	0-500 mm
Digit increment (mm)		0.01	0.01
Bridge length x bridge width		150 x 8 mm	150 x 8 mm
31282...	Ident. No.	**130**	**150**
	Price/unit, €	●	●

Prod. Gr. 3CC
Spare battery see no. 56815 210

ATORN® Sliding measuring bridge

Suitable for use with depth callipers 31282

Application:
For extending depth calliper support surface.

Execution:
- stainless steel



Bridge length x bridge width		300 x 16 mm	400 x 16 mm
31282...	Ident. No.	**501**	**502**
	Price/unit, €	●	●

31282 502 = Prod. Gr. 303
31282 501 = Prod. Gr. 308

ATORN® Electronic depth callipers

With double hook or 3 replaceable gauge slides

Application:
No. 31283: For measuring hole depths, offsets, widths and distances.
No. 31288: For universal measurement of depth, width, steps and distance dimensions.

Execution:
- ON/OFF
- Zero setting at any position
- ABS function
- Preset function
- **No. 31283:**
  - mm/inch changeover
  - AUTO OFF
  - Keeptronic system
- **No. 31288:**
  - mm/inch switch-over
  - Auto off
  - Keeptronic System

Advantage:
- **No. 31283:**
  - Button locking prevents inadvertent adjustments
  - Switched on by moving the slider
- **No. 31288:**
  - Key lock to prevent unintentional adjustment
  - Switch on by moving the slider

Delivery:
in a wooden case, with battery (1 x 3 V lithium, type CR 2032)



Ref. no. 012



Ref. no. 332

Min./max. length measuring range		0-300 mm	0-100 mm
Digit increment (mm)		0.01	0.01
Bridge length x bridge width		150 x 8 mm	85 x 8.5 mm
31283...	Ident. No.	**332**	-
	Price/unit, €	●	
31288...	Ident. No.	-	**012**
	Price/unit, €		●

Prod. Gr. 3CC
Spare battery see no. 56815 210

ATORN® IP67 electronic depth callipers

Interchangeable gauge slides

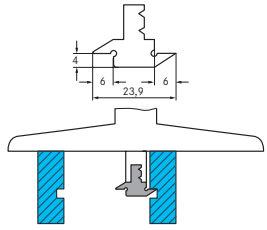
Application:
For all depth measurements such as bore depths, offsets, widths and distances.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch changeover
- AUTO OFF
- Hold function
- ABS function
- Keeptronic system
- Preset function

Advantage:
- Button locking prevents inadvertent adjustments
- Switched on by moving the slider
- Adjust to the specific depth measuring task by changing the gauge slides

Delivery:
In a case, with standard gauge slide 31296411 and battery (1 x 3 V lithium, type CR 2032)





Min./max. length measuring range		0-300 mm	0-500 mm
Digit increment (mm)		0.01	0.01
Bridge length x bridge width		150 x 8 mm	150 x 8 mm
31296...	Ident. No.	**130**	**150**
	Price/unit, €	●	●

Prod. Gr. 3CC
Spare battery see no. 56815 210

ATORN® Sliding measuring bridges

Suitable for use with depth callipers 31296

Application:
For extending depth calliper support surface.

Execution:
- stainless steel



Bridge length x bridge width	31282... Ident. No.		31297... Ident. No.	
400 x 16 mm	**502**	●	-	-
500 x 16 mm	-	-	**551**	●
	Price/unit, €			

Prod. Gr. 303

ATORN® Small electronic depth calliper, IP67



Application:
For measuring depths in small boreholes and in restricted areas.

Execution:
- ON/OFF
- Zero setting at any position
- mm/inch switch-over
- Auto off
- ABS function
- Keeptronic System
- Preset function
- Overall length 122.5 mm

Advantage:
- Key lock to prevent unintentional adjustment
- Switched on by moving the slider

Delivery:
in a wooden case, with battery (1 x 3 V lithium, type CR 2032)

Min./max. length measuring range		0-25 mm
Digit increment (mm)		0.01
Bridge length x bridge width		48 x 8 mm
Depth gauge rod width (mm)		2
31283...	Ident. No.	012
	Price/unit, €	●

Prod. Gr. 3CC
Spare battery see no. 56815 210

ATORN® Measuring instrument sets



Ident. No. 120



Ident. No. 130



Ident. No. 160



Ident. No. 320



Ident. No. 360

31320...	2-part Pocket vernier callipers, 150 mm, no. 31003 010 micrometer, 0–25 mm	Ident. No. Set price, €	120 ●
31320...	3-part Pocket vernier callipers, 150 mm, no. 31003 010 micrometer, 0–25 mm, knife-edge square, 100 x 70 mm, no. 38126 010	Ident. No. Set price, €	130 ●
31320...	6-part Pocket vernier callipers, 150 mm, no. 31003 010 micrometer, 0–25 mm, no. 31342 005 scale, 200 mm, no. 37101 020 flat square, 100 x 70 mm, no. 38060 010 hardened straight edge, 100 mm, no. 37550 010 spring dividers, 125 mm, no. 35010 125	Ident. No. Set price, €	160 ●
31320...	2-piece electronic pocket vernier callipers, 150 mm, no. 31173102 micrometer, 0–25 mm	Ident. No. Set price, €	320 ●
31320...	6-piece electronic pocket vernier callipers, 150 mm, no. 31173 102 micrometer, 0–25 mm, scale, 200 mm, no. 37101 020 flat square, 100 x 70 mm, no. 38060 010 hardened straight edge, 100 mm, no. 37550 010 spring dividers, 125 mm, no. 35010 125	Ident. No. Set price, €	360 ●

Prod. Gr. 3AC

ATORN® Micrometers (DIN 863)

D D/E



Application:
For measuring e. g. shaft diameters, external dimensions on workpieces etc.

Execution:
- Scale with anti-glare, brushed chromium plated finish
- Carbide measuring faces
- Friction coupling for consistent, repeatable measuring force
- Steel bracket, brushed chromium-plated
- **Ident. No. 025–075:** With setting gauges

Delivery:
In case

Min./max. length measuring range		0-25 mm	25-50 mm	50-75 mm	75-100 mm
Vernier scale		0.01 mm	0.01 mm	0.01 mm	0.01 mm
Measuring surface Ø (mm)		6.5	6.5	6.5	6.5
Measuring spindle increments (mm)		0.5	0.5	0.5	0.5
31342...	Ident. No.	005	025	050	075
	Price/unit, €	●	●	●	●

Prod. Gr. 3AD

ATORN® Micrometer set 0-100 mm (DIN 863)

Including setting gauges

D/E



Min./max. length measuring range		0-100 mm
Measuring spindle increments (mm)		0.5
Measuring surface Ø (mm)		6.5
Vernier scale		0.01 mm
31342...	Ident. No.	400
	Set price, €	●

Prod. Gr. 3AD

ATORN® Micrometer
Narrow measuring surfaces

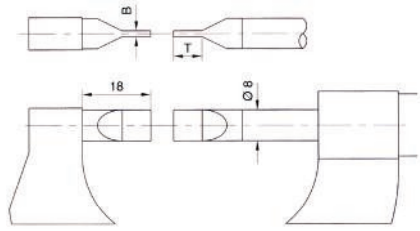
D

Application:
For measuring narrow external recesses.

Execution:
- Scale with anti-glare, brushed chromium plated finish
- Measuring faces made of hardened steel
- Friction coupling for consistent, repeatable measuring force
- Non-rotating measuring spindle

Delivery:
In a wooden case





Min./max. length measuring range		0-25 mm	25-50 mm	50-75 mm	75-100 mm
Vernier scale		0.01 mm	0.01 mm	0.01 mm	0.01 mm
Measuring surface depth (mm)		4	4	7	7
Measuring spindle increments (mm)		0.5	0.5	0.5	0.5
Measuring surface width x Measuring surface depth		0.4 x 4 mm	0.4 x 4 mm	0.75 x 7 mm	0.75 x 7 mm
31550...	Ident. No.	005	025	051	076
	Price/unit, €	●	●	●	●

Prod. Gr. 3AD

ATORN® Thread micrometer (DIN 863)
For measuring male threads

Application:
For measuring flanks and outside diameters on male threads.

Execution:
- Scale with anti-glare, brushed chromium plated finish
- Location hole, diameter 3.5 mm

Advantage:
- Direct measurement of flank diameter
- Replaceable thread inserts

Delivery:
In wooden case, gauge slides and setting gauges not included

Notes:
Inserts for Whitworth and trapezoidal threads deliverable on request



Min./max. length measuring range		0-25 mm	25-50 mm	50-75 mm	75-100 mm	100-125 mm	125-150 mm	150-200 mm
Vernier scale		0.01 mm	0.01 mm	0.01 mm	0.01 mm	0.01 mm	0.01 mm	0.01 mm
Measuring spindle increments (mm)		0.5	0.5	0.5	0.5	0.5	0.5	0.5
Spindle clamping		Yes	Yes	Yes	Yes	Yes	Yes	Yes
31579...	Ident. No.	005	025	050	075	100	125	150
	Price/unit, €	●	●	●	●	●	●	○

Prod. Gr. 3AD
Setting gauges available on request

ATORN® Thread flank gauge slides
Metric 60°

G

Application:
For use in thread micrometer no. 31579.

Execution:
- Hardened steel, fine ground

Delivery:
In pairs (prism and tip)

Technical data:
- Adapter diameter: 3.5 mm



Tip



Prism

Min./max. pitch		0.35-0.5 mm	0.6-0.8 mm	0.9-1.25 mm	1.5-2 mm	2.5-3.5 mm	4-6 mm
31581...	Ident. No.	001	002	003	004	005	006
	Price/pair, €	●	●	●	●	●	●

Prod. Gr. 3AD

ATORN® Precision pointer snap gauges

Application:
For precise testing of cylindrical parts in series.

Execution:
- Carbide measuring faces
- Spring-mounted anvil
- Consistent, repeatable measuring force

Delivery:
In case, without precision pointer



Min./max. length measuring range		0-25 mm	0-50 mm	50-100 mm
Measuring sensor travel (mm)		3	3	3
Measuring surface Ø (mm)		8	8	8
Shaft Ø (mm)		8	8	8
Spindle clamping		Yes	Yes	Yes
31935...	Ident. No.	025	050	100
	Price/unit, €	●	●	●

Prod. Gr. 3AD

ATORN® Internal micrometers (DIN 863)
For 2-point measurement

Application:
For measuring e.g. bores during turning, milling and grinding processes.

Execution:
- Scale with anti-glare, brushed chromium plated finish
- Ball bearing measuring spindle
- Carbide measuring faces
- Advanced friction coupling for consistent, repeatable measuring force
- Internal double-sided scale sleeve

Delivery:
In a wooden case



Min./max. length measuring range		5-55 mm
Vernier scale		0.01 mm
Measuring spindle increments (mm)		0.5
31635...	Ident. No.	010
	Price/unit, €	●

Prod. Gr. 316

ATORN® Internal micrometer set (DIN 863)

for 2-point measurement

Application:
For measuring large bore diameters, distances on workpieces, etc.

Execution:
- Scale with anti-glare, brushed chromium-plated finish
- Carbide-tipped measuring faces
- Can be individually configured for the diameter being measured
- Graduated drum, Ø 17 mm
- Measuring body, 25 mm, adjustable
- Threaded connection, M7 x 1

Advantage:
- Ready for measuring with no special settings required
- High level of measuring accuracy: extension rods hardened at the ends, lapped along the length of the gauge block and with insulated grips to prevent transfer of heat from the hands
- Measuring range extendible via screw-on extensions

Delivery:
In wooden case





Min./max. length measuring range	50-150 mm		50-250 mm		50-450 mm		50-850 mm		50-1450 mm	
Digit increment (mm)	0.01		0.01		0.01		0.01		0.01	
	31678... Ident. No.		31678... Ident. No.		31678... Ident. No.		31678... Ident. No.		31678... Ident. No.	
	115	○	125	●	145	●	185	●	245	●
	Price/unit, €									

Prod. Gr. 316

ATORN® Internal micrometers (DIN 863)

Application:
Ident. No. 306–310: For measuring through-bores and blind bores (from diameter 12 mm) and short centring shoulders.
Ident. No. 312–475: For measuring through holes and blind bores (from diameter 12 mm) and short centring shoulders.

Execution:
- Scale with anti-glare, brushed chromium plated finish
- Friction coupling for consistent, repeatable measuring force
- **Ident. No. 306–310:** Measuring faces made of hardened steel
- **Ident. No. 312–475:**
  - Carbide measuring faces
  - Measures to the base of bore holes
- **Ident. No. 340–475:** Aluminium measuring head

Delivery:
In a case



Min./max. length measuring range		6-8 mm	8-10 mm	10-12 mm	12-16 mm	16-20 mm	20-25 mm	25-30 mm	30-40 mm
Error limit (µm)		4	4	4	4	4	4	4	4
Vernier scale		0.001 mm	0.001 mm	0.001 mm	0.001 mm	0.001 mm	0.005 mm	0.005 mm	0.005 mm
Measuring depth (mm)		58	58	58	64	64	68	68	76
Measuring spindle increments (mm)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31915...	Ident. No.	306	308	310	312	316	320	325	330
	Price/unit, €	●	●	●	●	●	●	●	●

Min./max. length measuring range		40-50 mm	50-60 mm	60-70 mm	70-85 mm	85-100 mm	100-125 mm	125-150 mm	150-175 mm
Error limit (µm)		4	5	5	5	5	6	6	7
Vernier scale		0.005 mm	0.005 mm	0.005 mm	0.005 mm	0.005 mm	0.005 mm	0.005 mm	0.005 mm
Measuring depth (mm)		76	79	79	97	97	132	132	132
Measuring spindle increments (mm)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31915...	Ident. No.	340	350	360	370	385	400	425	450
	Price/unit, €	●	●	●	●	●	●	●	○

Min./max. length measuring range		175-200 mm
Error limit (µm)		7
Vernier scale		0.005 mm
Measuring depth (mm)		132
Measuring spindle increments (mm)		0.5
31915...	Ident. No.	475
	Price/unit, €	○

Prod. Gr. 303

ATORN® Internal micrometer sets (DIN 863)

I/AC

	Min./max. length measuring range	Digit increment (mm)	Measuring depth (mm)	Error limit (µm)		
31915...	6-12 mm	0.001	58	4	Ident. No. Price/unit, €	610 ●
31915...	12-20 mm	0.001	64	4	Ident. No. Price/unit, €	620 ●
31915...	20-50 mm	0.005	68/76	4	Ident. No. Price/unit, €	630 ●
31915...	50-100 mm	0.005	79/97	5	Ident. No. Price/unit, €	640 ●

Prod. Gr. 303



Ident. No. 610

ATORN® Measurement depth extension

For ATORN 3-point internal micrometers

Min./max. length of application area	6-12 mm		12-20 mm		20-30 mm		30-200 mm	
Length (mm)	75		75		150		150	
	31915... Ident. No.		31915... Ident. No.		31915... Ident. No.		31915... Ident. No.	
	900	○	910	●	920	●	930	●
	Price/unit, €							

Prod. Gr. 303

ATORN® Universal comparison measuring instrument for internal and external measurements

Application:
Ident. No. 010: For universal measurements of diverse tasks, e.g. external and internal measurement of bores, threads, toothing, recesses, grooves etc.

Execution:
- **Ident. No. 010:**
  - 1 adjustable fixed measuring arm
  - one moving measuring arm for internal and external measurements, spring-mounted for consistent, repeatable results, measuring direction reversible, measurement path approx. 18 mm
  - Robust, torsion-free tubular structure
- Measured values displayed by dial gauge, precision pointer or electronic measuring probes
- Adjusted using a setting device with gauge block combinations, master gauges, ring gauges or other material measures
- Measuring range of basic device 5-220 mm external/15-230 mm internal, can be increased up to 2000 mm with extensions.

Delivery:
Ident. No. 010: In a wooden case

Notes:
Ident. No. 010: Accessories 31970100 - 240 are required for measuring, depending on the measuring task.



Ident. No. 010
Basic device with measuring arms, ref. no. 220



Ref. no. 010/130/150



Ref. no. 010/130/170



Ref. no. 010/130/180



Ref. no. 010/130/190



Ref. no. 010/130/200



Ref. no.
010/220/230/240



Ref. no.
010/220/230/240

31970...	Basic device	Ident. No. Price/unit, €	010 ●
31970...	Universal measuring instrument 100 mm extension	Ident. No. Price/unit, €	100 ●
31970...	Universal measuring instrument 200 mm extension	Ident. No. Price/unit, €	110 ●
31970...	Universal measuring instrument 500 mm extension	Ident. No. Price/unit, €	120 ○
31970...	Attachment piece for gauge slides	Ident. No. Price/pair, €	130 ●
31970...	Shoulder gauge slides for external measurements	Ident. No. Price/pair, €	140 ●
31970...	Shoulder gauge slides for internal measurements	Ident. No. Price/pair, €	150 ●
31970...	Gauge slides with spherical contact surface, length 23 mm	Ident. No. Price/pair, €	160 ●
31970...	Gauge slides with spherical contact surface, length 53 mm	Ident. No. Price/pair, €	170 ○
31970...	Cylindrical gauge slides, length 52 mm	Ident. No. Price/pair, €	180 ○
31970...	Gauge slides, bent, length 41 mm	Ident. No. Price/pair, €	190 ○
31970...	Gauge slides with gauge disc, length 42 mm, diameter 12 mm	Ident. No. Price/pair, €	200 ●
31970...	Measuring arms for gauge slides, length 40 mm	Ident. No. Price/pair, €	210 ●
31970...	Measuring arms for gauge slides, length 80 mm	Ident. No. Price/pair, €	220 ●
31970...	Depth stop for measuring arms, length 34 mm, width 30 mm	Ident. No. Price/pair, €	230 ●
31970...	Adapter 5 mm for gauge slides M 2.5	Ident. No. Price/pair, €	240 ●

Prod. Gr. 303

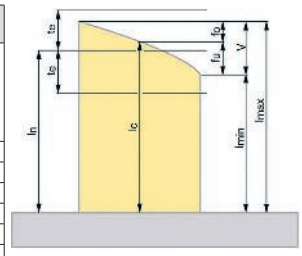
Gauge blocks

The parallel gauge blocks according to DIN EN ISO 3650 will be produced in various tolerance classes that can roughly be assigned to the following application groups:

Calibration class K	Reference normal gauge blocks are predominantly used for gauge block tests with gauge block testers in the calibration laboratory, together with a DKD calibration certificate.
Tolerance class 0	Workshop and normal gauge in calibration laboratory or in air conditioned measuring room for setting or calibration of gauges as well as measuring instruments.
Tolerance class 1	Most often used working standard for checking gauges and adjusting measuring instruments. Used in measuring rooms and on production test stations.
Tolerance class 2	Gauge blocks of this class are mostly used as a normal gauge on test stations in production areas, for setting and calibrating measuring devices as well as for setting and testing tools, appliances and machines.



Nominal measuring range		Tolerance class 0		Tolerance class 1		Tolerance class 2	
		Limit allowances for length from the nominal dimensions at any point	Tolerance for the deviation span	Limit allowances for length from the nominal dimensions at any point	Tolerance for the deviation span	Limit allowances for length from the nominal dimensions at any point	Tolerance for the deviation span
in mm		± te	tv	± te	tv	± te	tv
		µm	µm	µm	µm	µm	µm
Above	Until						
–	10	0.12	0.10	0.20	0.16	0.45	0,30
10	25	0.14	0.10	0.30	0.16	0.60	0,30
25	50	0.20	0.10	0.40	0.18	0.80	0,30
50	75	0.25	0.12	0.50	0.18	1.00	0,35
75	100	0.30	0.12	0.60	0.20	1.20	0,35
100	150	0.40	0.14	0.80	0.20	1.60	0,40
150	200	0.50	0.16	1.00	0.25	2.00	0,40
200	250	0.60	0.16	1.20	0.25	2.40	0,45
250	300	0.70	0.18	1.40	0.25	2.80	0,50
300	400	0.90	0.20	1.80	0.30	3.60	0,50
400	500	1.10	0.25	2.20	0.35	4.40	0,60
500	600	1.30	0.25	2.60	0.40	5.00	0,70
600	700	1.50	0.30	3.00	0.45	6.00	0,70
700	800	1.70	0.30	3.40	0.50	6.50	0,80
800	900	1.90	0.35	3.80	0.50	7.50	0,90
900	1000	2.00	0.40	4.20	0.60	8.00	1,00



Property	Ceramic	Cemented carbide	steel
Length extension coefficient approx.	9.5 x 10 E-6/C	4.23 x 10 E-6/C	11.5 x 10 E-6/C
Thermal conductivity	Very low	Low	High
Wear resistance	Excellent	Good	Less good
Thrust properties	Acceptable	Excellent	Excellent
Geometric accuracy	Excellent	Excellent	Acceptable if treated correctly
Corrosion resistance	Excellent	Good	Less good
Mechanical strength	Good	Good	Very good

ATORN® Steel gauge block sets (ISO 3650)

Application:
For testing and calibrating measuring instruments and test equipment.

Execution:
- Made from high-quality, aged special steel
- Hardened
- Hand-lapped
- Gauge blocks are marked with an identification number

Delivery:
in high-quality wooden case, with traceable factory calibration certificate from an approved test laboratory (DAkkS on request)



No. 32082

Tolerance class					0	1
	Number of pieces in assortment/set (PCS)	Nominal dimension in assortment	Material			
32082...	47	1.005 mm, 1.01-1.20 mm, increasing by 0.01 mm, 1.3-1.9 mm, increasing by 0.1 mm, 10-100 mm, increasing by 10 mm, 1-9 mm, increasing by 1 mm	Gauge steel	Ident. No. Set price, €	006 ●	010 ●
32086...	87	0.5-9.5 mm, increasing by 0.5 mm, 1.001-1.009 mm, increasing by 0.001 mm, 1.01-1.49 mm, increasing by 0.01 mm, 10-100 mm, increasing by 10 mm	Gauge steel	Ident. No. Set price, €	006 ○	010 ○
32087...	103	1.005 mm, 1.01-1.49 mm, increasing by 0.01 mm, 0.5-24.5 mm, increasing by 0.5 mm, 25-100 mm, increasing by 25 mm	Gauge steel	Ident. No. Set price, €	006 ○	011 ○

Prod. Gr. 3DD

ATORN® Gauge block sets made of ceramic and cemented carbide (ISO 3650)

Application:
For testing and calibrating measuring instruments and test equipment.

Execution:
- Gauge blocks are marked with an identification number

Advantage:
- **No. 32072–32073:**
  - Up to 10x longer service life than steel
  - Corrosion-resistant
  - Non-magnetic
  - Very low maintenance
- **No. 32103–32104:**
  - Up to 20x longer service life than steel
  - Very low thermal expansion

Delivery:
in high-quality wooden case, with traceable factory calibration certificate from an approved test laboratory (DAkkS on request)



No. 32072

Tolerance class					0	1
	Number of pieces in assortment/set (PCS)	Nominal dimension in assortment	Material			
32072...	47	1.005 mm, 1.01-1.20 mm, increasing by 0.01 mm, 1.3-1.9 mm, increasing by 0.1 mm, 10-100 mm, increasing by 10 mm, 1-9 mm, increasing by 1 mm	Ceramic	Ident. No. Set price, €	**006** ○	**010** ○
32073...	87	0.5-9.5 mm, increasing by 0.5 mm, 1.001-1.009 mm, increasing by 0.001 mm, 1.01-1.49 mm, increasing by 0.01 mm, 10-100 mm, increasing by 10 mm	Ceramic	Ident. No. Set price, €	**006** ●	**010** ○
32103...	47	1.005 mm, 1.01-1.20 mm, increasing by 0.01 mm, 1.3-1.9 mm, increasing by 0.1 mm, 10-100 mm, increasing by 10 mm, 1-9 mm, increasing by 1 mm	Tungsten Carbide	Ident. No. Set price, €	**006** ○	**010** ●
32104...	87	0.5-9.5 mm, increasing by 0.5 mm, 1.001-1.009 mm, increasing by 0.001 mm, 1.01-1.49 mm, increasing by 0.01 mm, 10-100 mm, increasing by 10 mm	Tungsten Carbide	Ident. No. Set price, €	**006** ○	**010** ○

Prod. Gr. 3DD

ATORN® Steel gauge block sets (ISO 3650)

For calibrating and testing micrometers

Application:
For specific testing and calibration of micrometers.

Execution:
- Made from high-quality, aged special steel
- Hardened
- Hand-lapped
- Gauge blocks are marked with an identification number
- **No. 32077:** For reliable testing of micrometers
- **No. 32079:** To meet the minimum micrometer requirements

Advantage:
- Ideal for testing gauges and measuring instruments in test rooms

Delivery:
in high-quality wooden case, with traceable factory calibration certificate from an approved test laboratory (DAkkS on request)

Technical data:
- Tolerance class: 1

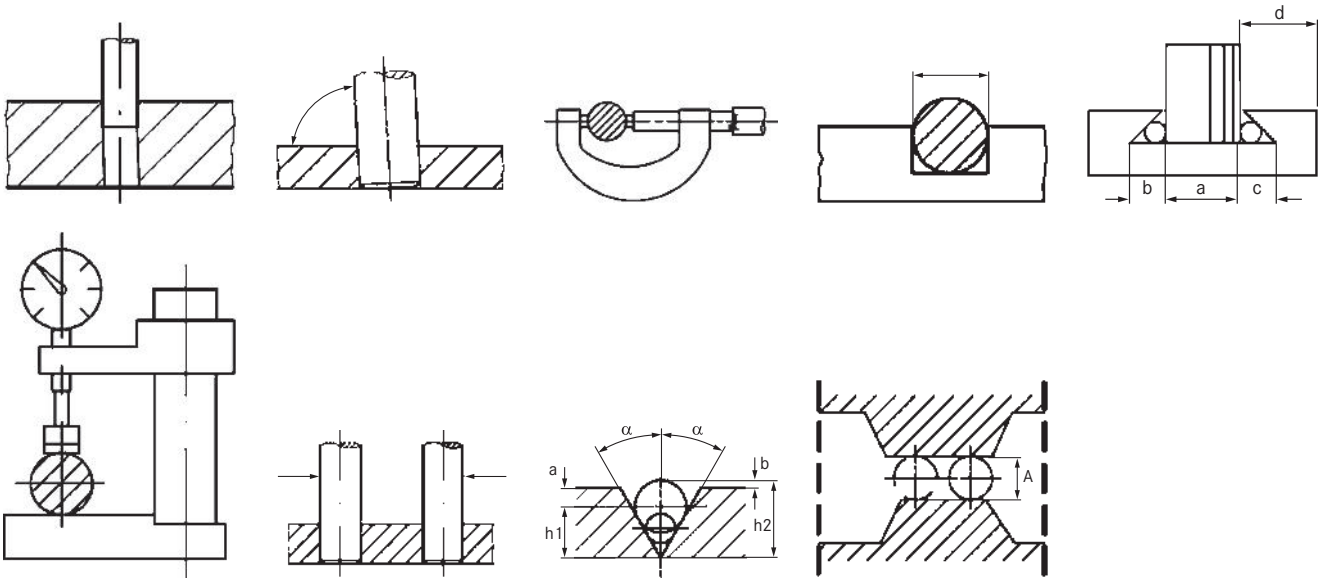




	Number of pieces in assortment/set (PCS)	Nominal dimension in assortment	Material		
32077...	10	2.5 mm, 5.1 mm, 7.7 mm, 10.3 mm, 12.9 mm, 15 mm, 17.6 mm, 20.2 mm, 22.8 mm, 25 mm	Gauge steel	Ident. No. Set price, €	**010** ●
32079...	5	5.1 mm, 10.3 mm, 15 mm, 20.2 mm, 25 mm	Gauge steel	Ident. No. Set price, €	**010** ●

Prod. Gr. 3DD

Application examples for test pins



ATORN® Test pin sets in wooden case (DIN 2269)

AE

Application:
For measuring bore hole clearances, bore diameters, angularity of bores etc.

Execution:
- Ground and lapped
- Hardened 60–64 HRC
- Sharp-edged at one end, milled to 30° x 0.3 D at the other end

Delivery:
In wooden case



Tolerance class					1	2
	Number of pieces in assortment/set (PCS)	Nominal dimension of measuring pins	Material			
32486...	41	1.00-5.00 mm, increasing by 0.1 mm	Gauge steel	Ident. No. Set price, €	**001** ○	**002** ●
32486...	50	5.10-10.00 mm, increasing by 0.1 mm	Gauge steel	Ident. No. Set price, €	**101** ○	**102** ○
32486...	91	1.00-10.00 mm, increasing by 0.1 mm	Gauge steel	Ident. No. Set price, €	**201** ●	**202** ●
32487...	81	1.00-5.00 mm, increasing by 0.05 mm	Gauge steel	Ident. No. Set price, €	**001** ○	**002** ●
32487...	100	5.05-10.00 mm, increasing by 0.05 mm	Gauge steel	Ident. No. Set price, €	**101** ○	**102** ●
32488...	100	1.00-2.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**001** ○	**002** ●
32488...	100	2.01-3.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**101** ○	**102** ●
32488...	100	3.01-4.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**201** ○	**202** ●
32488...	100	4.01-5.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**301** ○	**302** ○
32488...	100	5.01-6.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**401** ○	**402** ●
32488...	100	6.01-7.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**501** ○	**502** ○
32488...	100	7.01-8.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**601** ○	**602** ○
32488...	100	8.01-9.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**701** ○	**702** ○
32488...	100	9.01-10.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**801** ○	**802** ○
32488...	901	1.00-10.00 mm, increasing by 0.01 mm	Gauge steel	Ident. No. Set price, €	**901** ○	**902** ○

Prod. Gr. 3DD

ATORN® Thread gauges TiN-coated
for standard metric ISO thread

M | AA | AB

Application:
No. 32696: For testing the flank diameter of female threads and compliance with minimum dimensions of the external diameter.
No. 32697: For testing the flank and core diameter of male threads.

Execution:
- Surface hardness approx. 2500 Vickers

Advantage:
- Improved corrosion resistance
- Wear resistance approx. 10 times greater than conventional gauge steel
- Extended calibration intervals
- Cost reduction

Technical data:
- Material: TiN



No. 32696
Illustration may be different!



No. 32697

Thread type x nominal Ø x pitch	Thread limit plug gauge, 6H 32696... Ident. No.		Go ring gauge, 6g 32697... Ident. No.	
M3 x 0.5	030	●	030	●
M4 x 0.7	040	●	040	●
M5 x 0.8	050	●	050	●
M6 x 1.0	060	●	060	●
M8 x 1.25	080	●	080	●
M10 x 1.5	100	●	100	○

Thread type x nominal Ø x pitch	Thread limit plug gauge, 6H 32696... Ident. No.		Go ring gauge, 6g 32697... Ident. No.	
M12 x 1.75	120	●	120	●
M14 x 2.0	140	●	140	●
M16 x 2.0	160	●	160	○
M18 x 2.5	180	○	180	○
M20 x 2.5	200	●	200	○
	Price/unit, €			

Prod. Gr. 325

ATORN® ORION® Thread gauge sets M3–M12
for standard metric ISO thread in line with DIN 13

M | AA | AB

Execution:
- **No. 32696:** Go side with TiN coating
- **No. 32696–32697:** Surface hardness approx. 2500 Vickers

Advantage:
- **No. 32696–32697:**
- Improved corrosion resistance
- Wear resistance approx. 10 times greater than conventional gauge steel
- Extended calibration intervals
- Cost reduction

Delivery:
In wooden case



No. 32690



No. 32691–32692



No. 32696



No. 32697

	ATORN®		ATORN®		ORION®		ORION®		ORION®	
	Thread limit plug gauges		Go ring gauge		Thread limit plug gauges		Go ring gauge		No-go ring gauges	
Nominal dimension in assortment	3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm		3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm		3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm		3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm		3 mm, 4 mm, 5 mm, 6 mm, 8 mm, 10 mm, 12 mm	
Tolerance class	6H		6g		6H		6g		6g	
Material	TiN		TiN		Gauge steel		Gauge steel		Gauge steel	
	32696... Ident. No.		32697... Ident. No.		32690... Ident. No.		32691... Ident. No.		32692... Ident. No.	
	400	●	400	●	010	●	010	●	010	●
	Set price, €									

ORION = Prod. Gr. 3DB
ATORN® = Prod. Gr. 325

ATORN® Dial gauges

CE

Application:
Ident. No. 010–020: For measuring lengths and length differences, e.g. concentricity, flatness, positional measurements.
Ident. No. 030–050: For measuring lengths and differences in length, e.g. concentricity, flatness, position measurements.

Execution:
- **Ident. No. 010–020:**
  - Measuring pin and clamping shaft made from durable stainless steel
  - coloured tolerance labels for clear detection in the adjusted tolerance fields
  - Convenient lifting sleeve with additional dust protection function
- **Ident. No. 030–050:**
  - Measuring pin and clamping shank are made from durable stainless steel
  - Coloured tolerance labels for clear detection in the adjusted tolerance fields
  - Comfortable lifting sleeve with additional dust protection function
  - Concentric mm display for larger, clearer digits

Advantage:
- **Ident. No. 010–020:** Gauge slides with ceramic balls (low wear, not electrically conductive)

Delivery:
Ident. No. 010–020: In a case


Ident. No. 010


Ident. No. 020


Ident. No. 030


Ident. No. 040


Ident. No. 050

		Length measuring range (mm)	Outer Ø (mm)	Scale value (mm)	Measurement travel of one pointer revolution (mm)	Shock protection		
33000...	Round mm display	5	40	0.01	0.5	Yes	Ident. No. Price/unit, €	**010** ●
33000...	Round mm display	10	58	0.01	1.0	Yes	Ident. No. Price/unit, €	**020** ●
33000...	Concentric mm display	10	40	0.01	1.0	No	Ident. No. Price/unit, €	**030** ●
33000...	Concentric mm display	10	58	0.01	1.0	Yes	Ident. No. Price/unit, €	**040** ●
33000...	Concentric mm display	25	58	0.01	1.0	Yes	Ident. No. Price/unit, €	**050** ●

Prod. Gr. 3AE

ATORN® Electronic dial gauge

with large high-contrast display, designed for production as well as for laboratory

multiCOM · IP 52 · CE

Application:
For static measurements of lengths and length differences

Execution:
- Zero setting at any position
- Large LCD display (12 mm)
- Keeptronic System
- mm/inch switch-over

Advantage:
- LOCK function (key lock)
- Switched on by the ON button or automatically switched on by calliper movement
- Particularly energy-saving electronics (battery lifetime up to 3 years)

Delivery:
Battery (1 x 3 V lithium type CR 2032)

Technical data:
- Data transmission type: multiCOM
- Min./max. measurement force: 0.5-1.0 N
- Absolute function: Yes
- Automatic switch-off: Yes
- Preset function: Yes
- IP protection class: IP 52
- Reversible counting direction: Yes



Length measuring range (mm)		12.5	12.5
Digit increment (mm)		0.01	0.001
Error limit (µm)		20	5
Repeat accuracy (µm)		10	2
33167...	Ident. No.	**110**	**210**
	Price/unit, €	●	●

Prod. Gr. 303

ATORN® Small electronic dial gauge

degree of protection IP65

Power RS · IP 40 · IP 65 · CE

Application:
For measuring lengths and length differences, e.g. concentricity, flatness, positional measurements.

Execution:
- Inductive measuring system
- LCD digital display (height 6 mm)
- Plastic housing diameter 44 mm
- mm/inch switch-over

Delivery:
Battery (1 x 3 V lithium type CR 2032), in a case

Technical data:
- Data transmission type: Power RS
- Automatic switch-off: Yes



Length measuring range (mm)		12.5	12.5	12.5	12.5	5.0	5.0
Digit increment (mm)		0.01	0.001	0.01	0.001	0.001	0.001
Error limit (µm)		20	5	20	5	4	4
Repeat accuracy (µm)		5	2	5	2	2	2
Min./max. measurement force		0.5-0.9 N	0.5-0.9 N	0.6-1.3 N	0.6-1.3 N	0.5-0.65 N	0.6-1.2 N
Absolute function		Yes	Yes	Yes	Yes	No	No
Dynamic measurement		No	No	No	No	Yes	Yes
Combined indicator for figure/scale reading		No	No	No	No	Yes	Yes
Preset function		Yes	Yes	Yes	Yes	No	No
IP protection class		IP 40	IP 40	IP 65	IP 65	IP 40	IP 65
33174...	Ident. No.	**010**	**020**	**030**	**040**	**050**	**060**
	Price/unit, €	●	●	●	●	●	●

Prod. Gr. 303

ATORN® Electronic dial gauge



Application:
For measuring lengths and length differences, e.g. concentricity, flatness, positional measurements.

Execution:
- Large LCD display (11 mm)
- Read display value
- Factor adjustable
- mm/inch switch-over

Advantage:
- Measured value classification: Display uses coloured LEDs to indicate when tolerance limits are exceeded

Delivery:
Battery (1 x 3 V lithium type CR 2032)

Technical data:
- Data transmission type: Proximity
- Absolute function: Yes
- Automatic switch-off: Yes
- Dynamic measurement: Yes
- Colour reading classification: Yes
- Rotating housing: Yes
- Preset function: Yes
- IP protection class: IP 54
- Tolerance value entry: Yes
- Reversible counting direction: Yes

Length measuring range (mm)		12.5	25	50	100	12.5	25	50	100
Digit increment (mm)		0.01	0.01	0.01	0.01	0.001	0.001	0.001	0.001
Error limit (µm)		10	10	20	20	3	4	5	6
Repeat accuracy (µm)		2	2	2	2	2	2	2	3
Min./max. measurement force		0.65-0.9 N	0.65-1.15 N	1.4-2.9 N	1.8-3.8 N	0.65-0.9 N	0.65-1.15 N	1.4-2.9 N	1.8-3.8 N
33172...	Ident. No.	001	011	021	031	101	111	121	131
	Price/unit, €	●	●	●	●	●	●	●	●

Prod. Gr. 303

ATORN® Precision pointers (DIN 879)



Application:
For measuring lengths. Ideal for measuring instruments and flatness and straightness measurements

Execution:
- Shock resistant
- Precision-guided measuring pin
- Connection for wire lifter
- Pointer fine adjustment
- Adjustable tolerance marks
- Measuring mechanism on ruby bearings
- suitable for internal precision measuring instruments

Delivery:
in case

Technical data:
- With free stroke: Yes
- Measurement force: 1 N
- Shaft diameter: 8 mm

Length measuring range (mm)		0.1	0.5	0.1	0.5
Scale value (mm)		0.001	0.01	0.001	0.01
IP protection class		IP 40	IP 40	IP 53	IP 53
33163...	Ident. No.	010	015	020	025
	Price/unit, €	●	●	●	●

Prod. Gr. 3AE

ATORN® Lever gauge probe (DIN 2270)

L

Application:
For measuring deviations in concentricity, axial run-out, parallelism and flatness. For centring shafts of boreholes and aligning workpieces.

Execution:
- Metallic outer ring
- Anti-magnetic components
- Automatic switching of callipers direction
- Measuring mechanism on ruby bearings
- Measuring probe with cemented carbide ball

Advantage:
- 3 dovetail mounting surfaces

Delivery:
Lever gauge probe, measuring probe with 2 mm diameter cemented carbide ball, 8 mm diameter clamping shaft for mounting on measuring stands, measuring probe wrench with case

Technical data:
- Connection thread: M1.6
- Ball diameter: 2 mm
- Pivot range of measuring sensor: 240 Degree



Ident. No. 010–020, 050–060



Ident. No. 030–040



Ident. No. 080

	Length measuring range (mm)	Ø (mm)	Scale value (mm)	Length of measuring sensor from centre of ball (mm)	Measurement force (N)		
33310...	0.2	32	0.002	12.8	0.15	Ident. No. Price/unit, €	050 ●
33310...	0.2	40	0.002	12.8	0.15	Ident. No. Price/unit, €	060 ●
33310...	0.2	40	0.001	12.8	0.15	Ident. No. Price/unit, €	070 ●
33310...	0.2	58	0.001	12.8	0.15	Ident. No. Price/unit, €	080 ●
33310...	0.5	32	0.01	35.7	0.15	Ident. No. Price/unit, €	030 ●
33310...	0.5	40	0.01	35.7	0.15	Ident. No. Price/unit, €	040 ●
33310...	1	32	0.01	16.6	0.15	Ident. No. Price/unit, €	010 ●
33310...	1	40	0.01	16.6	0.15	Ident. No. Price/unit, €	020 ●

Prod. Gr. 3AE

ATORN® Accessories for lever gauge probes no. 33310

Application:
Ident. No. 120–325: Measuring probe for lever gauge probe no. 33310
Ident. No. 400: For changing measuring probes.
Ident. No. 500: For clamping in a measuring stand or other holders with 8 mm diameter.

Notes:
Ident. No. 120–325: Only use replacement measuring probes of the length for which the lever gauge probe is designed.



Ident. No. 120



Ident. No. 125, 225



Ident. No. 220



Ident. No. 320



Ident. No. 325



Ident. No. 400



Ident. No. 500

		Connection thread	Ball Ø (mm)	Length of measuring sensor from centre of ball (mm)	Material		
33311...		M1.6	2	12.8	Tungsten Carbide	Ident. No. Price/unit, €	120 ●
33311...		M1.6	2	12.8	Rubin	Ident. No. Price/unit, €	125 ●
33311...		M1.6	2	16.6	Tungsten Carbide	Ident. No. Price/unit, €	220 ●
33311...		M1.6	2	16.6	Rubin	Ident. No. Price/unit, €	225 ●
33311...		M1.6	2	35.7	Tungsten Carbide	Ident. No. Price/unit, €	320 ●
33311...		M1.6	2	35.7	Rubin	Ident. No. Price/unit, €	325 ●

		Connection thread	Ball Ø (mm)	Length of measuring sensor from centre of ball (mm)	Material		
33311...	Gauge slide wrench					Ident. No. Price/unit, €	400 ●
33311...	Clamping shaft Ø 8 mm h6					Ident. No. Price/unit, €	500 ●

Prod. Gr. 3AE

ATORN® Electronic lever gauge probe

Application:
For measuring deviations in concentricity, axial run-out, parallelism and flatness. For centring shafts of boreholes and aligning workpieces.

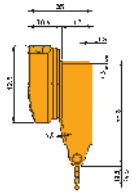
Execution:
- Combined scale and digital display
- Rotating display unit
- Auto off
- Compatible with all TESATAST accessories
- Zero setting at any position
- mm/inch switch-over
- Measuring probe with golbal change carbide ball
- Digit increment reversible (0.001/0.01 mm)

Advantage:
- 3 dovetail mounting surfaces

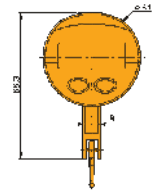
Delivery:
Clamping shank 8 mm diameter and key disc for measuring probe, in plastic case.

Technical data:
- Ball diameter: 2 mm
- Pivot range of measuring sensor: 270 Degree





Ident. No. 010



Ident. No. 010

	Length measuring range (mm)	Ø (mm)	Scale value (mm)	Length of measuring sensor from centre of ball (mm)	Measurement force (N)		
33296...	0.8	44	0.001	12.5	0.13	Ident. No. Price/unit, €	010 ●
33296...	0.5	44	0.001	36.5	0.07	Ident. No. Price/unit, €	020 ●

Prod. Gr. 303

ATORN® Internal precision measuring instrument

T

Application:
For measuring bore diameters using the 2-point comparison measuring method.

Execution:
- Repeat limit 1 µm
- Fixed measuring pins and moving probe bolts made of hardened steel

Delivery:
In wooden case (without precision pointer)

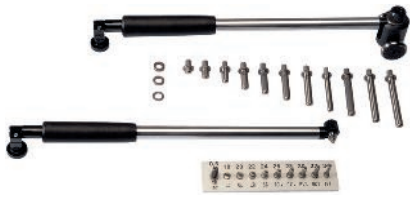


Min./max. Ø of measuring range		18-35 mm	35-60 mm	50-150 mm
Measuring depth (mm)		176	178	178
Spindle material		Steel	Steel	Steel
33518...	Ident. No.	018	035	050
	Set price, €	●	●	●

Prod. Gr. 303

ATORN® Internal precision measuring instrument set
18 - 150 mm

T



Min./max. Ø of measuring range		18-150 mm
Measuring depth (mm)		176/178
Spindle material		Steel
33518...	Ident. No.	400
	Set price, €	●

Prod. Gr. 303

ATORN® 3D articulated measuring stands
model series with high-quality, light metal arm components

Application:
For clamping dial gauges, precision pointers, lever gauge probes etc.

Execution:
- Mechanical, maintenance-free central clamping
- Dovetail mount and holder Ø 8 mm
- **Ident. No. 003–010:** Strong adhesive magnet with prismatic base
- **Ident. No. 015:** Cylindrical mounting spigot, diameter 10 mm, for clamping in collet chucks or drill chucks

Advantage:
- Simple, quick operation
- Highly flexible, exact positioning

Delivery:
Without dial gauge and lever gauge probe



Ident. No. 003



Ident. No. 010



Ident. No. 015

Height (mm)		220	300	380	200
Operation radius (mm)		130	200	280	130
Adherence strength (N)		300	750	750	-
Base size		36 x 30 x 35 mm	60 x 50 x 55 mm	60 x 50 x 55 mm	-
Base Ø (mm)		-	-	-	10
34060...	Ident. No.	003	005	010	015
	Price/unit, €	●	●	●	●

Prod. Gr. 3AB

ATORN® 3D articulated measuring stand

model series with chrome-plated arm components

Application:
For clamping dial gauges, precision pointers, lever gauge probes etc.

Execution:
- Mechanical, maintenance-free central clamping
- Dovetail mount and holder Ø 8 mm
- Strong adhesive magnet with prismatic base

Advantage:
- Simple, quick operation
- Highly flexible, exact positioning

Delivery:
Without dial gauge



Ident. No. 027



Ident. No. 021



Ident. No. 023



Ident. No. 025

Height (mm)		310	390	568	740
Operation radius (mm)		200	280	450	630
Adherence strength (N)		800	800	1000	1500
Base size		60 x 50 x 55 mm	60 x 50 x 55 mm	75 x 50 x 55 mm	120 x 60 x 55 mm
34060...	Ident. No.	**027**	**021**	**023**	**025**
	Price/unit, €	●	●	●	●

Prod. Gr. 3AB

ATORN® 3D articulated measuring stand µ-Line

with precision adjustment and high-quality, light metal arms

Application:
in high-precision range for clamping dial gauges, precision pointers, lever gauge probes etc.

Execution:
- Mechanical, maintenance-free central clamping
- Dovetail mount and holder Ø 8 mm
- Strong adhesive magnet with prismatic base

Advantage:
- Simple, quick operation
- Highly flexible, exact positioning
- Precision adjustment with high repeat accuracy for measurements in the µ-range

Delivery:
Without precision pointer



Ident. No. 070



Ident. No. 080, 100

Height (mm)		200	310	390	435
Operation radius (mm)		130	200	287	330
Adherence strength (N)		600	600	600	900
Base size		40 x 40 x 40 mm	60 x 50 x 55 mm	60 x 50 x 55 mm	75 x 50 x 55 mm
34060...	Ident. No.	070	080	090	100
	Price/unit, €	●	●	●	●

Prod. Gr. 3AB

ATORN® 3D articulated measuring stand set

Holding system for small parts in the workshop

Application:
For holding objects such as light sources, circuit boards etc.

Delivery:
Articulated stand, steel base, clamp base, clamp holder with plastic jaws, extension, adapter, toping thread and open end spanner





Operation radius (mm)		200
Ø of the base (mm)		100
Max. extension (mm)		200
34060...	Ident. No.	150
	Price/unit, €	●

Prod. Gr. 3AB

ATORN® 3D articulated arms

Application:
Suitable for installation in any holder with a suitable thread

Execution:
- Mechanical, maintenance-free central clamping
- **Ident. No. 100–120:** Model series with high-quality, light metal arm components
- **Ident. No. 121–125:** µ-Line model series
- **Ident. No. 127–141:** Model series with chrome-plated arm components

Advantage:
- Simple, quick operation
- Highly flexible, exact positioning



Ident. No. 100–125



Ident. No. 127–141

Operation radius (mm)			130	200	280	204	287	330	197
Connection thread			M6	M6	M6	M6	M8	M8	M6
Connection thread 2			M6	M8	M8	M8	M8	M8	M8
34075...	light metal	Ident. No.	**100**	**110**	**120**	-	-	-	-
		Price/unit, €	●	●	●				
34075...	µ-line	Ident. No.	**121**	-	-	**122**	**123**	**125**	-
		Price/unit, €	●			●	●	●	
34075...	chromi-um-plated	Ident. No.	-	-	-	-	-	-	**127**
		Price/unit, €							●

Operation radius (mm)			288	407	453	635
Connection thread			M6	M8	M8	M8
Connection thread 2			M8	M8	M8	M10 x 1.25
34075...	light metal	Ident. No.	-	-	-	-
		Price/unit, €				
34075...	µ-line	Ident. No.	-	-	-	-
		Price/unit, €				
34075...	chromi-um-plated	Ident. No.	**128**	**129**	**131**	**141**
		Price/unit, €	●	●	●	●

Prod. Gr. 3AB

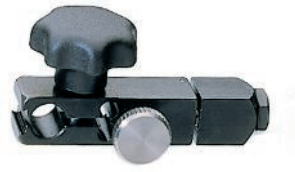
ATORN® Fine adjustment

Application:
For use with a 3D articulated arm.

Execution:
- Steel
- Combined holder for shaft diameter 8 mm and lever gauge probe with dovetail mount

- **Ident. No. 220:** For µ-line articulated measuring stands

Technical data:
- Bore diameter: 8 mm



Ident. No. 200–210



Ident. No. 220

Connection thread			M6	M8
34075...	Standard	Ident. No.	**200**	**210**
		Price/unit, €	●	●
34075...	With fine adjustment	Ident. No.	-	**220**
		Price/unit, €		●

Prod. Gr. 3AB

ATORN® Adhesive magnets/granite feet/vacuum bases

Application:
Ident. No. 300–330: For use with 3D articulated arms for optimum hold.

Ident. No. 340: For use with 3D articulated arms with sliding option.
Ident. No. 350: For use with 3D articulated arms on hard stone bases.


Ident. No. 320


Ident. No. 330


Ident. No. 340


Ident. No. 350

Connection thread		M6	M8	M8	M10 x 1.25	M8	M8
Adherence strength (N)		300	750	1000	1500	-	400
Length x width x height		36 x 30 x 35 mm	60 x 50 x 55 mm	75 x 50 x 55 mm	120 x 60 x 55 mm	150 x 120 x 50 mm	-
Ø (mm)		-	-	-	-	-	88
34075...	Ident. No.	300	310	320	330	340	350
	Price/unit, €	●	●	●	●	●	●

Prod. Gr. 3AB

Measuring stand
With guide rail

Application:
For measuring the concentricity or parallelism of workpieces. Side surfaces can be used as a stop.

Execution:
- Cast iron foot with prismatic base (fine-ground support surface and lateral faces)
- Transverse arm with fine adjustment and 8 mm diameter hole for dial gauges, precision pointers or electronic length measuring probes
- Measuring column can be moved in T-groove

Delivery:
Without dial gauge

Technical data:
- Height: 335 mm
- Measuring arm diameter: 16 mm
- Measuring arm length: 180 mm
- Base size: 250 x 60 x 35 mm


Supplied without dial gauge

34001...	Ident. No.	010
	Price/unit, €	●

Prod. Gr. 345

ATORN® Measuring stand
With magnet

Application:
Ideal for use with lever gauge probes and small dial gauges.

Execution:
- Cross joint can be rotated and swivelled through 360°
- Extremely high clamping force in the joints
- Holder for 8 mm shaft diameters and dovetail mount
- Switching magnet with prismatic base
- Micro-fine adjustment

Delivery:
Without dial gauge

Technical data:
- Height: 285 mm
- Measuring arm diameter: 16 mm
- Measuring arm length: 180 mm
- Base size: 70 x 46 x 65 mm
- Adherence strength: 600 N



34165...	Ident. No.	010
	Price/unit, €	●

Prod. Gr. 3AB

ATORN® Measuring stand
Flexible column

Application:
For measuring in hard-to-reach places.

Execution:
- Switching magnet with prismatic base
- Holder for 8 mm shaft diameters and dovetail mount
- Central clamping using eccentric clamping lever
- Fine adjustment

Delivery:
Without dial gauge

Technical data:
- Height: 380 mm
- Measuring arm diameter: 17 mm
- Measuring arm length: 300 mm
- Base size: 70 x 46 x 65 mm
- Adherence strength: 500 N



34185...	Ident. No.	010
	Price/unit, €	●

Prod. Gr. 3AB

ATORN® Universal measuring table made from hard stone (DIN 876-1)

with 3D articulated arm

Application:
For positioning components requiring a high-precision base.

Execution:
- M8 measuring table insert nut
- Holder for 8 mm shaft diameters and dovetail mount
- articulated arm with operating radius of 285 mm



	Measuring table size	Adapter Ø (mm)	Overhang (mm)		
34310...	400 x 250 x 50	8	285	Ident. No. Price/unit, €	100 ●
34310...	400 x 400 x 50	8	375	Ident. No. Price/unit, €	105 ●

Prod. Gr. 340

ATORN® Precision measuring tables made from hard stone (DIN 876-1)

Application:
For positioning components requiring a high-precision base.

Execution:
- **Ident. No. 110–115, 125–135:**
  - post made from chrome steel
  - holder for 8 mm shaft diameter
- **Ident. No. 120:**
  - Post made from chrome steel
  - Holder for 8 mm shaft diameter
- **Ident. No. 120, 130–135:** with quick thread
- **Ident. No. 135:** With fine adjustment



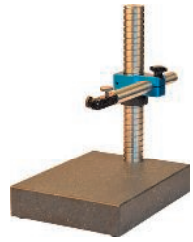
Ident. No. 110



Ident. No. 115



Ident. No. 120



Ident. No. 130

		Measuring table size	Max. measurement height (mm)	Adapter Ø (mm)	Overhang (mm)		
34310...	Rigid arm	200 x 100 x 50	180	8	60	Ident. No. Price/unit, €	110 ●
34310...	Rigid arm	250 x 200 x 50	210	8	120	Ident. No. Price/unit, €	115 ●
34310...	with rigid arm	250 x 200 x 50	210	8	120	Ident. No. Price/unit, €	120 ●
34310...	movable transverse arm	250 x 200 x 50	230	8	200	Ident. No. Price/unit, €	130 ●
34310...	movable transverse arm	250 x 200 x 50	230	8	120	Ident. No. Price/unit, €	125 ●
34310...	with rigid arm	250 x 200 x 50	230	8	200	Ident. No. Price/unit, €	135 ●

Prod. Gr. 340

ATORN® Marking-off vernier callipers

With fine adjustment

A



Application:
For marking off on workpieces by directly setting the required dimensions

Execution:
- Gauge bar and marking ruler made from one piece
- Measuring faces very finely ground, made of alloyed steel, hard-chrome plated
- Scale and vernier scale with anti-glare, brushed chromium-plated finish

Technical data:
- Max. length of application area: 300 mm
- Vernier scale: 0.05 mm

35036...	Ident. No.	030
	Price/unit, €	●

Prod. Gr. 3AF

ATORN® Beam compasses

With fine adjustment



Application:
For scribing by directly setting required dimensions at intervals of 1 mm.

Execution:
- Steel pipe beam with guide groove (special steel)
- With fine adjustment
- Graduation with 1 mm scale interval
- Anodised aluminium slide
- Hardened tips, Ø 6 mm
- Replaceable tips
- Two movable trammels

Notes:
Clean measuring equipment after use and avoid contact with hand perspiration.

Technical data:
- Vernier scale: 0.1 mm

Max. length of application area (mm)			500	1000	1500	2000	3000
Pipe Ø (mm)			20	20	20	20	28
Weight (kg)			0.9	1.45	2	2.6	5.3
35042...		Ident. No.	050	100	150	200	300
		Price/unit, €	●	●	○	(○)+	(○)+

Prod. Gr. 3AF
Replacement scribing tips no. 35044050

ATORN® Scriber

with sliding scriber

M



Ident. No. 030–100 Ident. No. 130–200

Application:
For marking scale lines on workpiece surfaces.

Execution:
- Scale and vernier scale with anti-glare, brushed chromium-plated finish
- Parallax-free reading
- Stainless steel measuring arms
- Marking-off needle from base

Max. length measuring range (mm)			300	600	1000
Vernier scale			0.02 mm	0.02 mm	0.02 mm
Base length x base width			145 x 90 mm	189 x 118 mm	189 x 118 mm
35072...	fine adjustment	Ident. No.	030	060	100
		Price/unit, €	●	●	●
35072...	toothed rack	Ident. No.	130	160	200
		Price/unit, €	●	●	○

Prod. Gr. 352

ATORN® Electronic scriber
with data output

Application:
For marking scale lines on workpiece surfaces and for measuring heights and clearances.

Execution:
- Marking-off needle from base
- LCD display, 11 mm
- Carbide-tipped marking-off needle
- Steel foot
- ON/OFF
- Zero setting at any position
- mm/inch changeover
- Hold function
- Preset function

Advantage:
- **Ident. No. 430–500:** With sliding, straight marking-off needle

Delivery:
Battery included (1 x 3 V lithium type CR 2032)



Ident. No. 230–300



Ident. No. 330–400



Ident. No. 430–500

Max. length measuring range (mm)			300	600	1000
Digit increment (mm)			0.01	0.01	0.01
Base length x base width			145 x 90 mm	189 x 118 mm	189 x 118 mm
Data transmission type			Proximity	Proximity	Proximity
35072...	fine adjustment	Ident. No.	**230**	**260**	**300**
		Price/unit, €	●	●	○
35072...	toothed rack	Ident. No.	**330**	**360**	**400**
		Price/unit, €	●	●	○
35072...	sliding scriber	Ident. No.	**430**	**460**	**500**
		Price/unit, €	●	●	●

Prod. Gr. 352

ATORN® Double vee blocks made of hardened steel/INOX steel

Application:
For checking, marking off and aligning cylindrical parts.

Execution:
- With clamping bracket
- Vee block faces and base machined level and parallel
- Finely ground
- **No. 35188:** INOX steel

Technical data:
- Flatness tolerance: 0.004 mm
- Angle: 90 Degree



Length x width x height			50 x 40 x 40 mm	75 x 55 x 55 mm	100 x 75 x 75 mm
Min./max. workpiece Ø			5-30 mm	5-50 mm	7-70 mm
35185...	in pairs	Ident. No.	**030**	**050**	**070**
		Set price, €	●	●	●
35186...	single	Ident. No.	**030**	**050**	-
		Price/unit, €	●	●	
35186...	Single	Ident. No.	-	-	**070**
		Price/unit, €			●
35188...	in pairs	Ident. No.	**030**	**050**	**070**
		Set price, €	●	●	●

Prod. Gr. 3AB
Replacement clamp available on request.

ATORN® Magnetic measuring and clamping vee block

Application:
For checking, marking off and aligning cylindrical parts.

Execution:
- Level and parallel and rectangular machined
- Magnetic force can be turned on/off
- The side opposite the switch is designed as a magnetic surface

Delivery:
In a wooden case

Technical data:
- Flatness tolerance: 0.004 mm
- Angle: 90 Degree



Version			Standard	Standard	Hardened	Hardened	Hardened
Length x width x height			80 x 67 x 96 mm	100 x 70 x 96 mm	70 x 45 x 70 mm	80 x 67 x 96 mm	100 x 70 x 96 mm
Min./max. workpiece Ø			6-66 mm	6-70 mm	2-40 mm	6-66 mm	6-70 mm
35209...	Single	Ident. No.	**010**	**020**	**105**	**110**	**120**
		Price/unit, €	●	●	●	●	●
35209...	In pairs	Ident. No.	**011**	**021**	**106**	**111**	**121**
		Price/pair, €	●	●	●	●	●

Prod. Gr. 3AB

ATORN® 90° triangular angle standards

Application:
For testing 90° angles and straightness.

Execution:
- Made from natural hard stone
- Horizontally and vertically adjustable
- Diamond-lapped surface
- **Ident. No. 010:** The two narrow surfaces are finely machined to a high-quality finish at an angle of 90°. The remaining surfaces are finely machined
- **Ident. No. 025–040:**
  - the two narrow surfaces are finely machined to a high-quality finish at an angle of 90°. The remaining surfaces are finely machined
  - weight-reducing hole(s)

Delivery:
In box

Technical data:
- Accuracy class: 00



Limb length (mm)		250	300	400	500
Limb length 2 (mm)		400	500	600	800
Width (mm)		50	60	70	80
Perpendicularity deviation (µm)		3	4	5	6
Number of drill holes (PCS)		0	2	2	2
Weight (kg)		10	17	30	55
35278...	Ident. No.	**010**	**025**	**030**	**040**
	Price/unit, €	●	●	(○)+	(○)+

Prod. Gr. 340

ATORN® Folding rule

Wooden

Execution:
- Angle scale
- Decimal numbers in white/black
- Brass end caps
- Sturdy joints

Advantage:
- First segment with identical graduation on both sides



	Length (m)	Width (mm)	Number of chain links (PCS)	Material	Accuracy class		
37331...	2	16	10	Wood	III	Ident. No. Price/unit, €	010 ●

Prod. Gr. 3AA

ATORN® Tape measure

AO

Application:
For measuring distances with mm precision

Execution:
- ergonomic, robust plastic housing made of ABS
- with practical belt loop
- self-locking system (automatic tape locking); the tape is automatically retracted when the stop button is activated
- durable return mechanism for the tape
- steel tape, painted white, with additional polyamide coating for optimum protective properties
- mm graduation in line with accuracy class EC II and CE marking
- Screwed-on belt clip



Ident. No. 055–085

	Without magnet		Without magnet		Without magnet	
Length (m)	3		5		8	
Width (mm)	16		19		25	
	37003... Ident. No.		37003... Ident. No.		37003... Ident. No.	
	035	●	055	●	085	●
	Price/unit, €					

Prod. Gr. 3AA

ATORN® Light metal scale

AJ

Execution:
- Made of anti-glare, anodised aluminium alloy
- Graduation with scale interval 1 mm
- Boldly coloured decimal numbers
- Suspension hole
- Lightweight and corrosion-resistant

Advantage:
- With convenient recessed handle for improved handling
- Inking edge to avoid smearing when drawing
- Contrasting print is particularly easy to read and anti-glare

Technical data:
- Cross-section length x cross-section width: 50 x 5 mm
- Accuracy class: II



Length (mm)		300	400	600	1000
37170...	Ident. No.	030	040	060	100
	Price/unit, €	●	●	●	●

Prod. Gr. 3AA

ATORN® Straight edges (DIN 874)

U

Application:
For inspecting the flatness and straightness of surfaces

Execution:
- Hardened measuring edge, ground and finely lapped
- Hand warmth insulation
- **No. 37550:** Made from special steel, both inclines with anti-glare burnished finish
- **No. 37551:** Made from INOX steel, both incline surfaces with anti-glare matt finish

Delivery:
In synthetic leather case

Notes:
From 1000 mm on request

Technical data:
- Material: Hardened steel



No. 37550



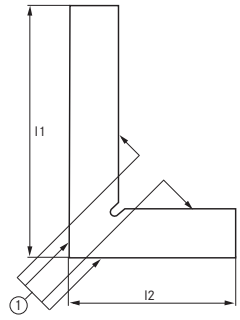
No. 37551

Length (mm)		75	100	125	150	200	300	400	500
37550...	Ident. No.	**007**	**010**	**012**	**015**	**020**	**030**	**040**	**050**
	Price/unit, €	●	●	●	●	●	●	●	●
37551...	Ident. No.	**007**	**010**	**012**	**015**	**020**	**030**	**040**	**050**
	Price/unit, €	●	●	●	●	●	●	●	●

Prod. Gr. 3AF

90° steel square, right-angle tolerances
Excerpt from DIN 875

Length l1	Right-angle tolerances t in µm with accuracy level			
(mm)	00	0	1	2
50	3	-	-	-
75	3	7	14	28
100	3	7	15	30
150	4	8	18	35
200	4	9	20	40
250	5	10	23	45
300	5	11	25	50
500	7	15	35	70
750	10	20	43	85
1000	12	25	60	120



ATORN® Flat squares and try squares (DIN 875)
accuracy 2

W

Application:
For testing angles and marking offs workpieces

Execution:
- Made from special steel, unhardened
- Test and side surfaces finely ground

Technical data:
- Accuracy class: II



No. 38062



No. 38063

Limb length x limb length 2			75 x 50 mm	100 x 70 mm	150 x 100 mm	200 x 130 mm	250 x 165 mm	300 x 175 mm	500 x 250 mm	600 x 300 mm	750 x 375 mm	1000 x 500 mm
Cross-section length x cross-section width			15 x 5 mm	20 x 5 mm	25 x 5 mm	30 x 6 mm	35 x 7 mm	35 x 7 mm	40 x 8 mm	40 x 8 mm	45 x 10 mm	50 x 10 mm
38062...	Flat square	Ident. No.	**007**	**010**	**015**	**020**	**025**	**030**	**050**	**060**	**075**	**100**
		Price/unit, €	●	●	●	●	●	●	●	●	○	(○)*
38063...	Try square	Ident. No.	**007**	**010**	**015**	**020**	**025**	**030**	**050**	**060**	**075**	**100**
		Price/unit, €	●	●	●	●	●	●	●	●	○	(○)*

Prod. Gr. 3AF

ATORN® Flat squares and try squares (DIN 875)

accuracy 1

W

Application:
For testing angles and marking offs workpieces

Execution:
- Test and side surfaces finely ground
- **No. 38058–38059:** Made from INOX steel, unhardened
- **No. 38060–38061:** Made from special steel, unhardened

Technical data:
- Accuracy class: I



No. 38058 007–38058 100, 38060 007–38060 100



No. 38059 007–38059 100, 38061 007–38061 100

Limb length x limb length 2			75 x 50 mm	100 x 70 mm	150 x 100 mm	200 x 130 mm	250 x 165 mm	300 x 200 mm	500 x 330 mm	1000 x 660 mm
Cross-section length x cross-section width			15 x 5 mm	20 x 5 mm	25 x 5 mm	30 x 6 mm	35 x 7 mm	40 x 8 mm	50 x 10 mm	70 x 15 mm
38058...	Flat square	Ident. No.	007	010	015	020	025	030	050	100
		Price/unit, €	●	●	●	●	●	●	●	(○)*
38059...	Try square	Ident. No.	007	010	015	020	025	030	050	100
		Price/unit, €	●	●	●	●	●	●	●	(○)*
38060...	Flat square	Ident. No.	007	010	015	020	025	030	050	100
		Price/unit, €	●	●	●	●	●	●	●	(○)*
38061...	Try square	Ident. No.	007	010	015	020	025	030	050	100
		Price/unit, €	●	●	●	●	●	●	●	(○)*

Prod. Gr. 3AF

ATORN® Flat squares and try squares (DIN 875)

accuracy 0

W

Application:
For testing angles and marking offs workpieces

Execution:
- Side faces finely ground
- Lapped test surfaces

- **No. 38051–38052:** Made from special steel, unhardened
- **No. 38073–38074:** Made from hardened INOX steel

Technical data:
- Accuracy class: 0



No. 38051 010–38051 050, 38073 005–38073 020



No. 38052 010–38052 050, 38074 005–38074 020

Limb length x limb length 2			50 x 40 mm	75 x 50 mm	100 x 70 mm	100 x 70 mm	150 x 100 mm	200 x 130 mm	250 x 165 mm	300 x 200 mm	500 x 330 mm
Cross-section length x cross-section width			12 x 5 mm	15 x 5 mm	20 x 5 mm	25 x 5 mm	25 x 5 mm	30 x 6 mm	35 x 7 mm	40 x 8 mm	50 x 10 mm
38073...	Flat square	Ident. No.	005	007	-	010	015	020	-	-	-
		Price/unit, €	●	●		●	●	●			
38051...	Flat square	Ident. No.	-	-	010	-	015	020	025	030	050
		Price/unit, €			●		●	●	●	●	●
38074...	Try square	Ident. No.	005	007	-	010	015	020	-	-	-
		Price/unit, €	●	●		●	●	●			
38052...	Try square	Ident. No.	-	-	010	-	015	020	025	030	050
		Price/unit, €			●		●	●	●	●	●

Prod. Gr. 3AF

ATORN® Try square (DIN 875)

Thick stock and thin blade

W



Application:
For testing angles and marking offs workpieces

Execution:
- Made from special steel, hardened
- Test surfaces and side surfaces finely ground and precise
- Lapped test surfaces

Technical data:
- Accuracy class: 0

Limb length x limb length 2		75 x 50 mm	100 x 70 mm	150 x 100 mm	200 x 130 mm
Cross-section length x cross-section width		18 x 2 mm	18 x 2 mm	22 x 3 mm	26 x 3 mm
Cross-section length 2 x cross-section width 2		14 x 10 mm	16 x 10 mm	20 x 12 mm	24 x 14 mm
38111...	Ident. No.	**007**	**010**	**015**	**020**
	Price/unit, €	●	●	●	●

Prod. Gr. 3AF

ATORN® Knife-edge square, hardened (DIN 875)

W



Application:
For testing planar surfaces using the light gap method

Execution:
- Test and side surfaces finely ground
- Test edges lapped

- With 2 lapped, graduated knife edges
- Hardened
- **No. 38125:** Made from special steel
- **No. 38126:** Made of INOX steel

Technical data:
- Accuracy class: 00

Limb length x limb length 2		50 x 40 mm	75 x 50 mm	100 x 70 mm	150 x 100 mm	200 x 130 mm	300 x 200 mm
Cross-section length x cross-section width		13 x 4 mm	15 x 4.5 mm	19 x 6 mm	25 x 7 mm	32 x 7 mm	40 x 8 mm
38125...	Ident. No.	**005**	**007**	**010**	**015**	**020**	**030**
	Price/unit, €	●	●	●	●	●	●
38126...	Ident. No.	**005**	**007**	**010**	**015**	**020**	**030**
	Price/unit, €	●	●	●	●	●	●

Prod. Gr. 3AF

ATORN® Knife-edge square (DIN 875)

Thick stock and thin blade

W



Application:
For testing planar surfaces using the light gap method

Execution:
- Test and side surfaces finely ground

- Test edges lapped
- Made from special steel
- Hardened

Technical data:
- Accuracy class: 00

Limb length x limb length 2		50 x 40 mm	75 x 50 mm	100 x 70 mm	150 x 100 mm	200 x 130 mm	300 x 200 mm
Cross-section length x cross-section width		16 x 2 mm	18 x 2 mm	18 x 2 mm	22 x 3 mm	26 x 3 mm	32 x 3 mm
Cross-section length 2 x cross-section width 2		14 x 10 mm	14 x 10 mm	16 x 10 mm	20 x 12 mm	24 x 14 mm	30 x 18 mm
38136...	Ident. No.	**005**	**007**	**010**	**015**	**020**	**030**
	Price/unit, €	●	●	●	●	●	●

Prod. Gr. 3AF

ATORN® Incision square

W



Application:
For inspection during toolmaking and manufacturing

Execution:
- Made from hardened INOX steel
- Test and side surfaces finely ground
- Graduated knife edge on inner side
- Inspection edges hardened and lapped

Technical data:
- Cross-section length 2 x cross-section width 2: 5 x 3.5 mm
- Accuracy class: 00

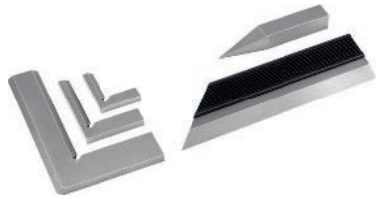
Limb length x limb length 2		25 x 20 mm	40 x 28 mm
Cross-section length x cross-section width		6 x 3.5 mm	8 x 3.5 mm
38154...	Ident. No.	025	040
	Price/unit, €	●	●

Prod. Gr. 3AF

ATORN® Measuring instrument set
5-piece

Execution:
- Straight edge 100 mm, knife-edge square 75 x 50 mm, 1 incision square each 40 x 28 mm and 25 x 20 mm, gauge block scriber 60 x 8 x 8 mm

Delivery:
In a case



38170...	Ident. No.	006
	Price/unit, €	●

Prod. Gr. 3AF

ATORN® Mitre try square

Application:
For precise 45° mark-off and inspection for 90° corner joints

Execution:
- Test and side surfaces finely ground
- Made from special steel

Technical data:
- Angle: 135 Degree



Limb length x limb length 2		120 x 80 mm	150 x 100 mm	200 x 130 mm
Cross-section length x cross-section width		20 x 5 mm	20 x 5 mm	25 x 5 mm
38175...	Ident. No.	120	150	200
	Price/unit, €	●	●	●

Prod. Gr. 3AF

ATORN® Acute mitre square 45°

Application:
For marking off and inspecting 45° angles

Execution:
- With stop
- Test surfaces precisely ground and lapped, side surfaces ground
- Made from special steel



Limb length x limb length 2		120 x 80 mm	150 x 100 mm	200 x 130 mm
Cross-section length x cross-section width		20 x 5 mm	20 x 5 mm	25 x 5 mm
38176...	Ident. No.	120	150	200
	Price/unit, €	●	●	●

Prod. Gr. 3AF

ATORN® Protractor, analogue

R

Application:
For measuring 10–170° angles

Execution:
- Locking screw
- Made of chromium-plated special steel
- Anti-glare, brushed chromium-plated scale
- **No. 38231:** Double blade for ease of use



Limb length (mm)		150	300	400	600
Degree arc Ø (mm)		100	150	200	300
38230...	Ident. No.	010	015	020	030
	Price/unit, €	●	●	●	●
38231...	Ident. No.	010	015	020	030
	Price/unit, €	●	●	○	○

Prod. Gr. 382

ATORN® Universal goniometer

With magnifying glass

S



Application:
For measuring 0-360° angles

Execution:
- Precision adjustment
- Parallax-free reading
- Made from hardened INOX steel
- Vernier scale 1/12° = 5 ‘
- Scale and vernier scale with brushed chromium-plated finish
- Error limit 5’

Delivery:
With panoramic magnifying glass, in wooden case

Rail length (mm)		150	200	300	500
38240...	Ident. No.	**015**	**020**	**030**	**050**
	Price/unit, €	●	●	●	●

Prod. Gr. 382

ATORN® Electronic universal goniometer

S



Application:
For measuring 0-360° angles

Execution:
- Adjust or set to zero on any flat surface
- LCD display with very large digits (size 8.5 mm)
- Measuring surfaces, hardened and fine ground
- Switchable measuring range: 1 x 360° 2 x 180°
- Zero setting (RESET) possible at any position
- Digit increment 0.01° or 1´
- Error limit 2’

Delivery:
Includes battery and sturdy wooden case

Technical data:
- Data transmission type: RS232 opto coupled

Rail length (mm)		150	200	300
38265...	Ident. No.	**150**	**200**	**300**
	Price/unit, €	●	●	●

Prod. Gr. 382

ATORN® Spirit levels and spirit levels with magnetic base

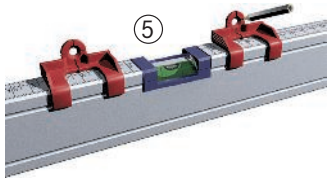
Made of light metal

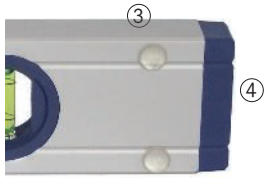
Application:
For horizontal and vertical alignment of objects

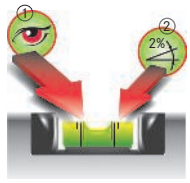
Execution:
- Laser-scaled horizontal round vials
- Read off 2% inclines
- Magnifying effect for improved reading
- 270° view of bubble from all positions without any interfering edges
- Made from high-strength non-breakable polycarbonate
- Strong aluminium rectangular profile
- Scratch-proof thanks to special anodising treatment
- Rubber end caps for impact protection
- **No. 38291:** Magnetic base

Advantage:
- Silicone pads on rear side surface for non-slip positioning on walls
- Additional divisions for exact 0-position of bubble in the horizontal vial for precise reading (zero-point deviation in normal position: 0.5 mm/m)
- **No. 38290 080–38290 120:**
  - Scale printed on upper measuring surface
  - 2 sliding measuring and marking-off tabs









38290080-120

Length (mm)			200	300	400	500	600	800	1000	1200	1500	1800	2000
	Measuring accuracy (per length) (mm/m)												
38290...	0.5	Ident. No.	**020**	**030**	**040**	**050**	**060**	**080**	**100**	**120**	**150**	**180**	**200**
		Price/unit, €	●	●	●	●	●	●	●	●	●	●	●
38291...	0.5	Ident. No.	-	-	**040**	-	**060**	**080**	**100**	-	-	-	-
		Price/unit, €			●		●	●	●				

Prod. Gr. 3AG

ATORN® Electronic inclinometer

RD



Application:
For easy and rapid measurement of inclinations

Execution:
- Display in degrees or percentages
- Arrow in display shows direction of inclination
- Simple adjustment in normal position (reset)
- Switchable acoustic signal for the 0° or 90° position
- Hold function
- Digit increments 0.1° or 0.1%
- Error limit 0° and 90° = 0.05° intermediate dimensions = ±0.2°

Delivery:
Battery (1x E-Block 9 V type 6LR61) in sturdy plastic tube

Technical data:
- Length x width x height: 256 x 50 x 60 mm

	Ident. No.	100
38445...	Price/unit, €	●

Prod. Gr. 383

IMBus* universal measuring bus

Universal interface between digital measuring devices or multi-point measuring instruments and PC with CAQ/QS programs. Suitable for use in industrial environments.

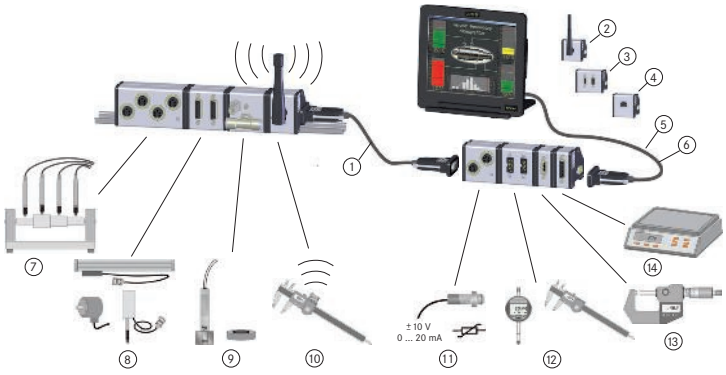
Properties:

- Powerful and flexible interface modules for electronic length-measuring probes and measuring instruments
- Modular measuring bus design: per PC, max. 8 measuring buses (devices), per measuring bus up to 64 connections, meaning up to 512 (8 x 64) measuring instruments can be connected
- Combination of several module groups in one measuring bus, length up to 1200 m (connected with bus extension cable) ability to connect several measuring instruments/stations to one measuring bus even if they are physically separate
- Automatic addressing of modules used in measuring bus (plug & play)
- High resolution and measuring accuracy of length measuring probe modules
- Connections to peripheral devices (e.g. PC): USB, RS232, LAN, WiFi, Profibus
- Additional modules for
  - further measuring instruments (e.g. incremental, analogue and pneumatic measuring instruments)
  - Control of program sequences
  - Power supply
- Easy module connection (RS485 bus interface)
- Can optionally be used as a table model or installed in top-hat rails
- IMB_Test software for system configuration and testing measurement value transmission

Options:

- IBREXDLL software for importing, displaying and evaluating measurement data in MS Excel, no. 39956 505
- ComGage software, for measurement and statistical process control in manufacturing,
- IBR-DDK.DLL software (device driver kit) for implementing the measuring buses in current Windows CAQ/QS programs
- Compact measuring computers Mecc and Meic for industrial applications

Technical details: All modules in robust AL housing, dimensions height x depth: 49.25 X 62 mm (width depends on module)



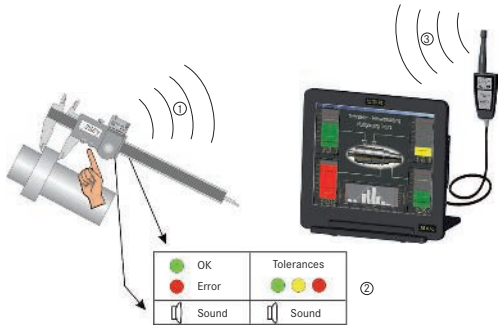
① Max. 1200 m
② Wi-Fi
③ Profibus
④ Ethernet
⑤ RS232
⑥ USB
⑦ Inductive sensor
⑧ Incremental
⑨ Air measurement
⑩ IBRit-rf1 radio modules
⑪ Analogue signals
⑫ Measuring instruments with Digimatic interface
⑬ Measuring instruments Opto RS232 interface
⑭ Measuring instruments with serial (RS232, RS422, ...) or parallel (binary, BCD, ...) interface

Wireless measurement transmission with IBR radio modules

Application:
The IBRit-RF1 radio module series is used for wireless data transmission from measuring instruments to PCs. It includes PC radio stations and measuring instrument radio modules. Up to 500 measuring instrument radio modules can be controlled by one PC radio station. The IBRit-rf1 radio module series offers absolute data security through double, independent checksum monitoring. The PC communicates wirelessly with the measuring instruments via the IBRit-rf1 PC radio stations. The measuring instruction communicated wirelessly with the PC via by the IBRit-rf1 measuring instrument radio modules.

Product description and advantages:

- Easy to use
- Full data security
- Cost-effective
- Connects to all types of measuring instruments
- Transfer acknowledgement
- Compact design
- Large range
- Long battery life
- Efficient working
- CE & FCC approval
- Tolerance feedback
- Individually programmable
- 500 measuring instruments
- 500 PC remote transmission stations



① Data, ② Feedback, ③ Confirmation

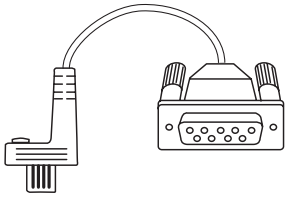
Further information, advice and quotations available on request. Please contact us.

ATORN® Connection cable

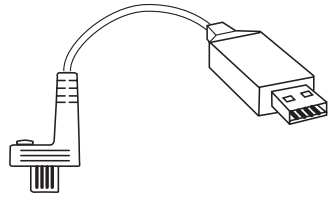
for measuring instruments with multiCOM interface

Application:
For wired data transfer from measuring instruments with multiCOM interfaces to e.g. PCs or interfaces with USB, RS232 or Digimatic interfaces

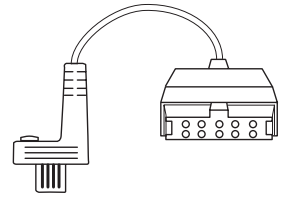
Technical data:
- Data communication: Unidirectional
- Cable length: 2 m
- Data button on cable: Yes



Ident. No. 010



Ident. No. 020



Ident. No. 030

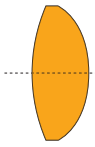
39855...	multiCOM data cable with RS232 interface	Ident. No.	010 ●
39855...	multiCOM data cable with USB interface	Ident. No.	020 ●
39855...	multiCOM data cable with DIGIMATIC interface	Ident. No.	030 ●

Prod. Gr. 303

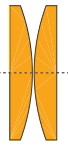
Magnifiers and reading glasses
Lens systems



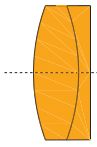
Biconvex lens system
Biconvex lens system lenses are lenses with two convex surfaces. It is the simplest and most commonly used lens shape for magnifiers. In contrast to biconvex lenses, plano-convex lens have one convex and one flat surface. Plano-convex lenses are used in aplanatic lens systems. (See aplanatic lens system).



Aspheric lens system
The surfaces of a spherical lens correspond to a section of the surface of a sphere. In contrast, aspheric lenses deviate from this spherical shape. Comparatively higher magnifications can be achieved using aspheric lenses as the defects that inevitably occur in any image produced by lenses are minimised.



Aplanatic lens system
Aplanatic lens systems consist of 2 plano-convex lenses, where the convex sides face each other internally. This allows a larger, field of vision with sharp edges at a relatively high magnification.



Achromatic lens system
Achromatic lens systems consist of at least 2 cemented lenses. The facing sides must have the identical opposite curvature. The lenses consist of crown and flint glass. Achromatic lenses deliver transparent images to the edge of the visual field, even for high-contrast objects.

Folding pocket magnifiers

Application:
For magnifying small objects

Execution:
- **No. 41100:** Glass lens in plastic frame
- **No. 41120:** Glass lens in metal holder
- Nickel-plated brass cover panels
- **No. 41125:** Glass lens in plastic holder
- Nickel-plated brass cover panels
- **No. 41130:** Dust-proof plastic housing

Advantage:
- **No. 41130:** Precision magnifying glass for pin-sharp images free from chromatic aberration



No. 41100



No. 41120



No. 41125



No. 41130

		Magnification	Lens Ø (mm)	Lens design	Lens material		
ORION	41100...	3,5-times	55	Biconvex	Glass	Ident. No.	011
						Price/unit, €	●
ORION	41120...	6-times	23	Aplanatic	Glass	Ident. No.	011
						Price/unit, €	●
ORION	41120...	8-times	23	Aplanatic	Glass	Ident. No.	021
						Price/unit, €	●
ORION	41120...	10-times	23	Aplanatic	Glass	Ident. No.	031
						Price/unit, €	●
ORION	41120...	15-times	18	Aplanatic	Glass	Ident. No.	051
						Price/unit, €	●
ORION	41120...	20-times	18	Aplanatic	Glass	Ident. No.	061
						Price/unit, €	●
ATORN	41125...	3/6/9-times	30	Biconvex	Glass	Ident. No.	011
						Price/unit, €	●
ESCHENBACH	41130...	3/6/9-times	23	Achromatic	Glass	Ident. No.	010
						Price/unit, €	●

ESCHENBACH = Prod. Gr. 4AA
ORION = Prod. Gr. 454
ATORN® = Prod. Gr. 490

ATORN® Magnifying glass

Application:
For magnifying small objects, e.g. for quality control during production.

Execution:
- Nickel-plated brass frame
- Round aluminium handle with recessed grips

Technical data:
- Magnification: 2,5-times
- Lens diameter: 75 mm
- Lens design: Biconvex



41140...

Ident. No.	025
Price/unit, €	●

Prod. Gr. 490

ATORN® Handheld magnifier

Application:
For magnifying especially small objects, e.g. for quality control during production.

Execution:
- Black anodised aluminium mount and handle

Technical data:
- Lens design: Aplanatic



Magnification		4-times	5-times	8-times	10-times	15-times
Lens Ø (mm)		50	40	30	23	23
41145...	Ident. No.	104	105	108	110	115
	Price/unit, €	●	●	●	●	●

Prod. Gr. 490

ATORN® Magnifying glass on stand

Application:
For magnifying small objects, e.g. for quality control during production.

Execution:
- Flexible, metal gooseneck arm 300 mm long
- Heavy table-top base 110 mm diameter

Technical data:
- Magnification: 2-times
- Lens diameter: 75 mm
- Lens design: Aplanatic
- Version: Schwanenhals mit Tischfuss



41240...	Ident. No.	040
	Price/unit, €	●

Prod. Gr. 490

ATORN® Magnifying glass on stand
LED lighting

Application:
For magnifying small objects, e.g. for quality control during production.

Execution:
- Aluminium magnifier head
- Flexible gooseneck
- Heavy base
- Half-frame lens mount for viewing without disturbing edges

Advantage:
- Bright light with 5 power LEDs
- Low power consumption (5 V mains plug)
- Practically unlimited LED service life
- Wide field glass lens for sharp images up to the edge

Technical data:
- Magnification: 2-times
- Lens diameter: 120 mm
- Lens design: Biconvex
- Lens material: Glass
- Version: Schwanenhals mit Tischfuss



41331...	Ident. No.	100
	Price/unit, €	●

Prod. Gr. 490

ATORN® LED magnifying lamp

Application:
For magnifying small parts with additional light source.

Execution:
- Bright illumination with 90 ultra bright SMD LEDs
- Segmented LED switching in 2 stages
- Non-slip, well-designed, soft plastic ring for impact protection
- 6500 K colour temperature (daylight)

Advantage:
- Extremely low power consumption (only approx. 9 watts)
- Metal arm with plastic cover, no danger of pinching
- Long LED service life, no risk of breakage
- External switch for use as a table lamp
- High-quality lens

Delivery:
Magnifying lamp, 65 mm table clamp and instructions

Technical data:
- Lens diameter: 127 mm
- Lens design: Biconvex
- Lens material: Glass
- Version: Articulated arm with table clamp



Magnification		1,75-times	2,25-times
41333...	Ident. No.	035	055
		●	●

Prod. Gr. 490

ATORN® Measuring magnifying glass

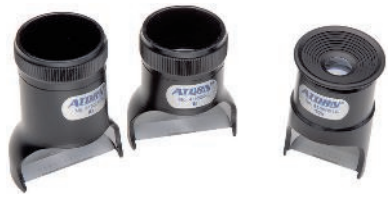
Full metal design and interchangeable dial plates

Application:
For measuring surfaces in workshops, laboratories, quality assurance, e.g. measuring indentations during Brinell hardness test

Execution:
- Parallax-free, distortion-free reading

Advantage:
- Half-open tube with white background for optimum, glare-free illumination of objects
- Brass dial, chrome-plated, high-precision laser graduated
- Superb edge sharpness for near parallax-free viewing

Technical data:
- Scale value: 0.1 mm
- Lens design: Achromatic
- Lens material: Glass



Magnification		6-times	8-times	10-times
Max. length measuring range (mm)		20	10	10
41540...	Ident. No.	055	105	205
	Price/unit, €	●	●	●

Prod. Gr. 490

ATORN® Measuring microscopes

Application:
For general measuring tasks in linear measurement technology, graphics industry or hardness test for Brinell and Vickers.

Execution:
- Attached LED lighting (battery-powered)
- Robust light metal housing
- Focussing using threaded channels in lens and eyepiece

Delivery:
In transport case, with LED illumination, batteries (4x button cells 1.5 V type LR44)



No. 41550

	Magnification	Max. length measuring range (mm)	Scale value (mm)	Object field Ø (mm)	Working distance (mm)		
41550...	20-times	7	0.05	8	57	Ident. No.	020
						Price/unit, €	●
41552...	40-times	4	0.02	5	36	Ident. No.	020
						Price/unit, €	●
41556...	60-times	2	0.0125	2.5	26	Ident. No.	020
						Price/unit, €	●

Prod. Gr. 490

ATORN® SHORE hardness testers (ISO 868)

Shore A for soft materials and Shore D for hard materials

Application:
Ident. No. 100: For determining Shore A hardness in line with DIN ISO 7619-1, ISO 7619-1, ISO 868 and ASTM D 2240. Suitable for e.g. soft rubber, elastomers, natural rubber, neoprene, polyester, cast resins etc.
Ident. No. 110: For determining Shore D hardness in line with DIN ISO 7619-1, ISO 7619-1, ISO 868 and ASTM D 2240. Suitable for e.g. hard rubber, acrylic glass, stiff thermoplastics, Formica, vinyl sheets, cellulose/acetate, hard rubber materials etc.

Execution:
- Trailing pointer
- Large glare-free display rotates through 360°
- Accurate to 0.5 hardness units

Advantage:
- Ergonomic handles for excellent handling



Ident. No. 100



Ident. No. 110

Model		HD-3000 Shore A	HD-3000 Shore D
Scale value, Shore		1	1
Shore error limit		± 0.5	± 0.5
Meter Ø (mm)		57	57
Trailing pointer		Yes	Yes
Contact force (DIN 53505) (N)		12.5	50
42195...	Ident. No.	100 ●	110 ●

Prod. Gr. 426

ATORN® Test sample set

for Shore hardness testers

Application:
For checking Shore hardness testers

Execution:
- Incl. factory calibration certificate



Ident. No. 140



Ident. No. 150

Number of test samples (PCS)			7	3
Shore hardness range			30 | 40 | 50 | 60 | 70 | 80 | 90	60 | 75 | 85
42195...	ATORN test sample set Shore A	Ident. No.	140 ●	-
42195...	ATORN test sample set Shore D	Ident. No.	-	150 ●

Prod. Gr. 426

ATORN® Test stand for Shore hardness tester

Application:
For mounting ATORN SHORE hardness testers. Ideal for accurate and reproducible individual and series measurements.

Execution:
- Robust aluminium test unit
- Height adjustable

Advantage:
- Tilt lever for shock-free and constant test force

Overhang (mm)			115
Test table Ø (mm)			98
Max. sample thickness (mm)			180
Test unit material			Alu construction
42195...	ATORN test stands for Shore hardness tester	Ident. No.	120
			○

Prod. Gr. 426



Test stand with SHORE A hardness tester

ATORN® Shore D loading weight

For ATORN test stands

Loading weight (g)			4000
Load weight material			Stainless steel A2, 1.4305
42195...	ATORN loading weight Shore D	Ident. No.	130
			○

Prod. Gr. 426



ATORN® Spring balances with spherical probes

Application:
For testing and setting control elements with adjustable friction moments, contact forces in electrical switch gears and regulating and controlling elements in motor vehicles.

Execution:
- Measuring possible in both directions
- Dial face with scale in centinewtons (cN) or newtons (N)
- Error limit 0.01 x (final value + measured value)
- Trailing pointer
- **Ident. No. 151:** Shortened sensor lever

Delivery:
In case



Min./max. force of measuring range		3-30 cN	5-50 cN	10-100 cN	25-250 cN	50-500 cN	100-1000 cN	300-3000 cN	500-5000 cN	1000-10000 cN
Scale value, force (cN)		1	1	2	5	10	20	50	100	200
Meter Ø (mm)		36	36	36	36	72	72	72	72	72
Sensor length (mm)		29	29	29	29	48	48	48	48	8
Weight (g)		64	64	64	64	260	260	278	294	290
44100...	Ident. No.	**041**	**051**	**061**	**081**	**091**	**101**	**121**	**131**	**151**
		●	●	●	●	●	●	●	●	○

Prod. Gr. 440

ATORN® Tensile and compressive force measuring unit
Electronic, model ZD 2

Application:
Robust, electronic handheld force measuring unit for mobile applications, for checking actuation forces and rigidity of assemblies and components such as springs, buttons, switches, levers, closures etc. This unit is used primarily in quality assurance, incoming goods inspections, production and research and development.

Execution:
- Adjustable measuring frequencies from 50 Hz to 2000 Hz
- Record measurement curves
- Processor-controlled electronics with the latest WINDOWS CE software
- Store peak values or curves in EXCEL files
- USB 2.0 interface for further processing and storing
- Calibration is carried out using reference measuring devices or weights
- Rechargeable batteries ensure smooth operation
- 7-digit LCD display + comma, with optional backlight
- Display resolution +/- 50,000 digits

Advantage:
- Adjustable measuring frequency
- Real-time measured data display using optional SoftTesT software
- Once saved, basic settings remain stored even when the device is switched off
- Ergonomic design, therefore suitable for left and right-handed users
- Fixed installation possible in testing devices

Delivery:
Device with battery pack set, 230 V AC power supply unit/charger, SD memory card, USB connection cable, CD with software and operating instructions, factory calibration certificate, transport case, accessories

Technical data:
- Min. measurement frequency: 50 Hz
- Max. measuring frequency: 2000 Hz
- Error limit, based on end value: 0.05%
- Data transmission type: USB



Min./max. force of measuring range		0-50 N	0-100 N	0-200 N	0-500 N	0-1000 N	0-2000 N	0-5000 N
Digit increment, force (N)		0.001	0.01	0.01	0.01	0.1	0.1	0.1
Connection thread for clamping device		M6	M6	M6	M6	M6	M12	M12
44181...	Ident. No.	**005**	**010**	**020**	**050**	**100**	**200**	**500**
		●	●	○	●	●	○	●

Prod. Gr. 490

ATORN® Force measuring cell

Analogue measurement display

Application:
For static and quasi-static force measurement on machines and equipment, e.g. hydraulic presses, rolling machines, calenders, bending machines, strength testing machines, torque meters etc.

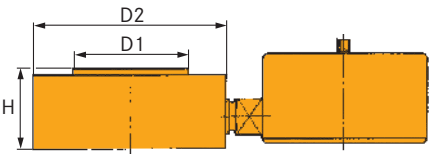
Execution:
- Analogue manometer, diameter 63 mm with trailing pointer
- Force measuring cell made from VA steel in slim design
- Integrated throttle damping
- Two M6 fixing threads on housing floor
- Error limit 2% of final value

Advantage:
- Very slim design for in constricted spaces
- Integrated throttle damping for light, abrupt loading and unloading

Delivery:
With calibration certificate, in plastic case

Technical data:
- Protruding piston height: 2 mm
- Fastening thread: 2 x M6
- Error limit, based on end value: 2%
- Manometer diameter: 63 mm





Min./max. force of measuring range	0-0.16 kN	0-0.25 kN	0-0.6 kN	0-1 kN	0-1.6 kN	0-2.5 kN	0-6 kN	0-10 kN	0-16 kN	0-25 kN	0-60 kN	0-100 kN
Scale value, force (kN)	0.005	0.005	0.01	0.02	0.05	0.05	0.1	0.2	0.5	0.5	1	2
Outer Ø (mm)	75	75	75	75	75	75	75	75	75	75	90	90
Overall height of force sensor (mm)	30	30	30	30	30	30	30	30	30	30	32	32
Piston Ø (mm)	45	45	45	45	45	45	45	45	45	45	56	56
Fastening thread clearance (mm)	55	55	55	55	55	55	55	55	55	55	75	75
Mean distance between manometer and force sensor (mm)	82	82	82	82	82	82	82	82	82	82	90	90
44420... Ident. No.	**021**	**031**	**051**	**061**	**071**	**081**	**101**	**111**	**121**	**131**	**151**	**161**
	●	●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 490

Other hydraulic force measuring cells

Application:
The ring-shaped force measuring cell is principally employed where mechanical engineering elements (shafts, spindles, clamping bolts, draw bolts, tension bolts or the like) must be routed through the pressure hull, for example, to measure axial forces on machine tools.

Technical data:
- Measurement ranges: 0–1 kN to 0–2.5 MN
- Error limit: < +/- 1%



ATORN® Infrared temperature measuring instruments

Application:
For measuring surface temperatures of rotating or live components

Execution:
- Temperature display in °C and °F
- Backlit display, switchable
- Alarm functions: acoustic and visual HIGH/LOW alarm
- Target laser (class II a) for precise aiming on measured object, switchable
- Measuring functions: Min./max./scan/Hold/OFF
- USB interface
- **Ident. No. 011:**
  - Consistently small measuring spot of 13 mm at any distance of up to 140 mm
  - Error limit ±1% or ± 1°C from 0°C to 530°C ± 1°C ± 0.07 °C from 0°C to 32°C
- **Ident. No. 030:**
  - Equipped with X-shaped laser for easy detection of actual measuring field size
  - DFL laser function (dual-focus laser): The 75:1 standard lens can be switched over to a close focus lens (focus 62:1, spot size diameter 1 mm at a distance of 62 mm) via a lever adjustment, ideal for inspecting small electronic components, for example
  - Error limit ±0.75% or ± 0.75°C*
  - Measured value memory for up to 100 values

Delivery:
Ident. No. 011: With batteries in case
Ident. No. 030: With batteries in case, incl. USB cable and Windows software



Ident. No. 011



Ident. No. 030

Min./max. temperature measuring range		-32 to 530 °C	-35 to 900 °C
Digit increment (measuring instrument for temperature) (°C)		0.1	0.1
Min./max. emission ratio		0.1-1.0	0.1-1.1
Optical focus		20:1	75:1 + DFL
Rechargeable battery/battery designation		9 V block	Mignon AA
46150...	Ident. No.	**011**	**030**
		●	●

Prod. Gr. 490



Workshop equipment


Workbench vices


Screw clamps

Screwdrivers


Open-end spanners and box wrenches


Socket wrenches, 1/4 inch


Socket wrench 3/8 inch


Socket wrenches, 1/2 inch


3/4-inch socket wrench


Hexagon and TORX screwdrivers


Slotted and Phillips screwdrivers


Bit range

Screwdrivers


Pipe socket spanners


Torque screwdriver


Torque wrench

Hand tools


Gripping pliers


Water pump pliers


Retaining ring pliers


Cutting pliers


Electronics cutters


Stripping and crimping tools


Hammers


Scribers


Hand saws, firmer chisels


Cutters


Manual deburring tools


Hole punches, hole saws

General requirements



Hand-held and machine lamps



Tool boxes and cases



Tool assortments

ATORN® Parallel vices

Rear opening, made of grey cast iron

Execution:
- High-quality grey cast iron with pearlitic texture
- Changeable and reversible jaws with smooth and ribbed clamping surface
- Smooth-running spindle with trapezoidal thread
- Cast-on pipe clamping jaws
- Plain anvil face
- **Ident. No. 015:** Painted in RAL 7016

Advantage:
- **Ident. No. 001–013:**
  - Excellent clamping precision thanks to long, prismatic precision guide
  - Spindle protected from dirt and damage by covering
- **Ident. No. 015:**
  - excellent clamping precision thanks to long, prismatic precision guide
  - spindle protected from dirt and damage by covering



Ident. No. 001–003



Ident. No. 011–013



Ident. No. 015

Jaws width (mm)		100	125	150	100	125	150	125
Min./max. clamping width		0-140 mm	0-175 mm	0-250 mm	0-140 mm	0-175 mm	0-250 mm	0-175 mm
Clamp in depth (mm)		75	80	90	75	80	90	80
Weight (kg)		13	24	41	13	24	41	24
Colour		Blue	Blue	Blue	Green	Green	Green	Grey
Material		Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron
51028...	Ident. No.	**001**	**002**	**003**	**011**	**012**	**013**	**015**
		●	●	●	●	●	●	●

Prod. Gr. 5HA

Accessories for			51028 001	51028 002	51028 003	51028 011	51028 012	51028 013
51028...	Rotary base	Ident. No.	**021** ●	**022** ●	**023** ●	**031** ●	**032** ●	**033** ●
51028...	Steel jaws	Ident. No.	**041** ●	**042** ●	**043** ●	**041** ●	**042** ●	**043** ●

ATORN® Vice lifts/height adjustment devices

with gas strut, to fit no. 51028 001-015

Application:
For lifting, rotating and lowering of parallel vices.

Execution:
- Simple to loosen and close using the clamping lever
- Includes fastening screws
- **Ident. No. 100–130:** Can be rotated 360°
- **Ident. No. 150:** can be rotated 360°

Advantage:
- Required height and rotation direction can be continuously adjusted

Technical data:
- Height adjustment: 215 mm



Ident. No. 100, 120



Ident. No. 110, 130



Ident. No. 150

Suitable for jaw width (mm)		100	100	125	125	125
Colour		Blue	Green	Blue	Green	Grey
51060...	Ident. No.	**100** ●	**110** ●	**120** ●	**130** ●	**150** ●

Prod. Gr. 5HA

ATORN® Malleable iron screw clamp

Non-slip and spindle safety device

Application:
For rigidly clamping various workpieces together.

Execution:
- Robust design with corrugated, reinforced malleable cast iron arms
- Profile rail with corrugation, galvanised surface
- Smooth running, burnished steel spindle with trapezoidal thread
- Clamping jaws with plastic protective caps
- Clamping force up to 6000 N

Advantage:
- Ergonomic two-component handle for optimum force transmission

Technical data:
- Material of the grip handle: 2-component plastic



Max. clamping width (mm)		120	160	200	250	300	400	500	600	800
Overhang (mm)		65	80	100	120	140	175	120	120	120
Rail cross-section L x W		6 x 22 mm	6 x 22 mm	8 x 30 mm	8 x 30 mm	9 x 35 mm	9 x 35 mm	11 x 35 mm	11 x 35 mm	11 x 35 mm
51102...	Ident. No.	012	016	020	025	030	040	050	060	080
		●	●	●	●	●	●	●	●	●

Prod. Gr. 597

ATORN® All-steel screw clamp

Non-slip and spindle safety device

Application:
For sprung and elastic clamping of a range of workpieces.

Execution:
- Fixed clamp made of cold-drawn profile steel, hardened and galvanised
- Sliding clamp drop-forged, hardened and galvanised
- Movable pressure plate with integrated spindle safety device
- Smooth running, burnished steel spindle with trapezoidal thread
- Clamping jaws with plastic protective caps

Advantage:
- Ergonomic two-component handle for optimum force transmission

Technical data:
- Material of the grip handle: 2-component plastic



Max. clamping width (mm)		120	160	200	250	300	400	500	600
Overhang (mm)		60	80	100	120	140	120	120	120
Rail cross-section L x W		6.5 x 13.5 mm	7.5 x 16 mm	9.5 x 19.5 mm	10.5 x 22 mm	12 x 25 mm	12 x 25 mm	12 x 25 mm	12 x 25 mm
51105...	Ident. No.	012	016	020	025	030	040	050	060
		●	●	●	●	●	●	●	●

Prod. Gr. 597

ATORN® Double open-end wrench (DIN 3110)

Jaw angle 15° at both ends

Technical data:
- Jaw position: 15 Degree
- Material: Chrome-vanadium steel
- Surface: Chrome-plated



Width across flats	6 x 7 mm	8 x 9 mm	8 x 10 mm	10 x 11 mm	10 x 13 mm	11 x 13 mm	12 x 13 mm	12 x 14 mm
Length (mm)	125	142	142	157	170	170	175	175
52009... Ident. No.	500	530	540	570	590	595	600	610
	●	●	●	●	●	●	●	●

Width across flats	13 x 14 mm	13 x 15 mm	13 x 17 mm	14 x 15 mm	14 x 17 mm	16 x 17 mm	16 x 18 mm	17 x 19 mm
Length (mm)	188	188	205	188	205	205	205	222
52009... Ident. No.	620	630	640	650	660	670	675	680
	●	●	●	●	●	●	●	●

Width across flats	18 x 19 mm	19 x 22 mm	19 x 24 mm	20 x 22 mm	21 x 23 mm	22 x 24 mm	24 x 26 mm	24 x 27 mm
Length (mm)	222	233	249	236	249	249	266	266
52009... Ident. No.	690	700	705	710	715	740	750	760
	●	●	●	●	●	●	●	●

Width across flats	25 x 28 mm	27 x 30 mm	27 x 32 mm	30 x 32 mm	30 x 36 mm	32 x 36 mm	36 x 41 mm	41 x 46 mm
Length (mm)	282	282	305	305	325	330	370	400
52009... Ident. No.	765	770	775	810	820	830	840	845
	●	●	●	●	●	●	●	●

Prod. Gr. 5HB

ATORN® ORION® Double open-end wrench sets (DIN 3110)

Jaw angle 15° at both ends

Advantage:
- Range of the most common double open-end wrenches to suit practical demands

Technical data:
- Jaw position: 15 Degree
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



No. 52009 870

Width across flats	Number of pieces in assortment/set (PCS)	ATORN® 52009... Ident. No.		ORION® 52017... Ident. No.	
6 x 7 mm | 8 x 9 mm | 10 x 11 mm | 12 x 13 mm | 14 x 15 mm | 16 x 17 mm | 18 x 19 mm | 20 x 22 mm	8	850	●	850	●
6 x 7 mm | 8 x 9 mm | 10 x 11 mm | 12 x 13 mm | 14 x 15 mm | 16 x 17 mm | 18 x 19 mm | 20 x 22 mm | 24 x 27 mm | 30 x 32 mm	10	860	●	860	●
6 x 7 mm | 8 x 9 mm | 10 x 11 mm | 10 x 13 mm | 12 x 13 mm | 14 x 15 mm | 16 x 17 mm | 17 x 19 mm | 18 x 19 mm | 20 x 22 mm | 24 x 27 mm | 30 x 32 mm	12	870	●	870	●

ATORN® = Prod. Gr. 5HB
ORION = Prod. Gr. 526

ATORN® Combination wrenches (DIN 3113)

Jaw angle 15°, ring side angled 15°

Advantage:
- Energy profile increases the force application areas for optimum load distribution
- Gentle on the bolt/nut and tool
- Even slightly damaged heads can still be screwed on

Technical data:
- Tip profile type: ENERGY profile
- Jaw position: 15 Degree
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats	6 mm	7 mm	8 mm	9 mm	10 mm	11 mm	12 mm	13 mm
Length (mm)	100	110	120	130	140	150	160	170
52034... Ident. No.	060	070	080	090	100	110	120	130
	●	●	●	●	●	●	●	●

Width across flats	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm	20 mm	21 mm
Length (mm)	180	190	190	210	210	230	230	260
52034... Ident. No.	140	150	160	170	180	190	200	210
	●	●	●	●	●	●	●	●

Width across flats	22 mm	24 mm	27 mm	30 mm	32 mm
Length (mm)	260	280	310	340	360
52034... Ident. No.	220	240	270	300	320
	●	●	●	●	●

Prod. Gr. 5HB

ATORN® ORION® Combination wrench sets, metric (DIN 3113)

Jaw angle 15°, ring side angled 15°

Advantage:
- Practical range of various combination wrenches with the most common wrench sizes

Technical data:
- Jaw position: 15 Degree
- Tip profile type: ENERGY profile
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



No. 52034 684

Width across flats	Number of pieces in assortment/set (PCS)	ATORN 52034... Ident. No.		ORION 52037... Ident. No.	
8 mm | 9 mm | 10 mm | 11 mm | 13 mm | 14 mm | 17 mm | 19 mm	8	670	●	670	●
6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 17 mm | 19 mm | 22 mm	12	680	●	680	●
10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 17 mm | 19 mm | 22 mm | 24 mm | 27 mm | 30 mm | 32 mm	12	684	●	684	●
6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 15 mm | 16 mm | 17 mm | 18 mm | 19 mm | 20 mm | 22 mm | 24 mm	17	690	●	690	●

ATORN = Prod. Gr. 5HB
ORION = Prod. Gr. 526

ATORN® Combination wrench (DIN 3113)

15° jaw angle, low offset ring side

Advantage:
- Energy profile increases the force application areas for optimum load distribution
- Gentle on the bolt/nut and tool
- Even slightly damaged heads can still be screwed on

Technical data:
- Tip profile type: ENERGY profile
- Jaw position: 15 Degree
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats	6 mm	7 mm	8 mm	9 mm	10 mm	11 mm	12 mm	13 mm
Length (mm)	100	115	125	140	145	160	165	180
52039... Ident. No.	006	007	008	009	010	011	012	013
	●	●	●	●	●	●	●	●

Width across flats	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm	20 mm	21 mm
Length (mm)	190	210	220	230	245	260	270	280
52039... Ident. No.	014	015	016	017	018	019	020	021
	●	●	●	●	●	●	●	●

Width across flats	22 mm	24 mm	27 mm	30 mm	32 mm	36 mm
Length (mm)	290	320	350	390	410	430
52039... Ident. No.	022	024	027	030	032	036
	●	●	●	●	●	●

Prod. Gr. 5HB

ATORN® Combination wrench sets, metric (DIN 3113)

15° jaw angle, ring side flat depressed centre

Advantage:
- Practical range of various combination wrenches with the most common wrench sizes

Technical data:
- Jaw position: 15 Degree
- Tip profile type: ENERGY profile
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Ident. No. 520

Width across flats	Number of pieces in assortment/set (PCS)	52039... Ident. No.	
8 mm | 9 mm | 10 mm | 11 mm | 13 mm | 14 mm | 17 mm | 19 mm	8	500	●
6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 17 mm | 19 mm | 22 mm	12	510	●
10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 17 mm | 19 mm | 22 mm | 24 mm | 27 mm | 30 mm | 32 mm	12	520	●

Prod. Gr. 5HB

ATORN® Ratchet combination spanner
straight version

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- 5° return angle

Advantage:
- 5° switching angle enables working in the most confined spaces

Technical data:
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats	8 mm	9 mm	10 mm	11 mm	12 mm	13 mm	14 mm	15 mm
Length (mm)	136	143	160	168	174	180	193	200
52044... Ident. No.	108	109	110	111	112	113	114	115
	●	●	●	●	●	●	●	●

Width across flats	16 mm	17 mm	18 mm	19 mm	21 mm	22 mm	24 mm	27 mm
Length (mm)	216	233	239	250	285	285	325	359
52044... Ident. No.	116	117	118	119	121	122	124	127
	●	●	●	●	●	●	●	●

Width across flats	30 mm	32 mm
Length (mm)	425	425
52044... Ident. No.	130	132
	●	●

Prod. Gr. 5HB

ATORN® Ratchet combination spanner set
straight version

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- 5° return angle

Advantage:
- 5° switching angle enables working in the most confined spaces

Delivery:
In roll-up pouch



Width across flats	8 mm | 10 mm | 13 mm | 17 mm | 19 mm
Number of pieces in assortment/set (PCS)	5
Surface	Chrome-plated
Material	Chrome-vanadium steel
52044... Ident. No.	200
	●

Prod. Gr. 5HB

ATORN® Ratchet combination spanner
Reversible

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- 5° switching angle
- Ring side angled 15°

Advantage:
- 15° angled offset for better access in tight installation spaces

Technical data:
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats	8 mm	9 mm	10 mm	11 mm	12 mm	13 mm	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm
Length (mm)	140	150	159	165	172	178	191	200	208	226	237	248
52044... Ident. No.	208	209	210	211	212	213	214	215	216	217	218	219
	●	●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 5HB

ATORN® Ratchet combination spanner set
Reversible

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- 5° switching angle
- Ring side angled 15°

Advantage:
- 15° angled offset for better access in tight installation spaces

Delivery:
In roll-up pouch



Width across flats		8 mm | 10 mm | 13 mm | 17 mm | 19 mm
Number of pieces in assortment/set (PCS)		5
Surface		Chrome-plated
Material		Chrome-vanadium steel
52044...	Ident. No.	300
		●

Prod. Gr. 5HB

ATORN® Ratchet combination spanner
With movable swivel head

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- 5° switching angle

Advantage:
- Flexible applications and access in tight installation spaces thanks to movable swivel head

Technical data:
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats		8 mm	9 mm	10 mm	11 mm	12 mm	13 mm	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm
Length (mm)		136	143	160	168	174	180	193	200	216	233	239	250
52044...	Ident. No.	308	309	310	311	312	313	314	315	316	317	318	319
		●	●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 5HB

ATORN® Ratchet combination spanner set
Movable flex head

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- 5° switching angle

Advantage:
- Flexible applications and access in tight installation spaces thanks to movable swivel head

Delivery:
In roll-up pouch



Width across flats		8 mm | 10 mm | 13 mm | 17 mm | 19 mm
Number of pieces in assortment/set (PCS)		5
Surface		Chrome-plated
Material		Chrome-vanadium steel
52044...	Ident. No.	400
		●

Prod. Gr. 5HB

ATORN® Wrench adapter for combination ratchet spanner

Execution:
- **Ident. No. 410–415:** Suitable for wrenches no. 52044 110 and 310
- **Ident. No. 420:** Suitable for wrenches no. 52044 113 and 313
- **Ident. No. 430:** Suitable for wrenches no. 52044 119 and 319

Advantage:
- Wrench is used as fine-pitch drive ratchet for various applications

Technical data:
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Ident. No. 410



Ident. No. 420

		Suitable for width across flats		
52044...	For 1/4" bits, hexagon	10 mm	Ident. No.	410 ●
52044...	For 1/4" nuts, square	10 mm	Ident. No.	415 ●
52044...	For 3/8" nuts, square	13 mm	Ident. No.	420 ●
52044...	For 1/2" nuts, square	19 mm	Ident. No.	430 ●

Prod. Gr. 5HB

ATORN® Combination ratchet spanner

Ratchet function on both sides

Application:
For screw connections in inaccessible places with optimum flexibility.

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- Jaw-side ratchet function via sprung insert and special jaw shape

Advantage:
- Tight switching angle thanks to fine toothing
- Maximum flexibility offered by two-sided ratchet function

Technical data:
- Surface: Chrome-plated
- Material: Chrome-vanadium steel





Head detail

Width across flats		8 mm	9 mm	10 mm	11 mm	12 mm	13 mm	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm	21 mm	22 mm	24 mm
Length (mm)		140	149	158	165	171	178	190	199	208	225	236	247	289	289	322
52044...	Ident. No.	508	509	510	511	512	513	514	515	516	517	518	519	521	522	524
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 5HB

ATORN® Combination ratchet spanner set

Ratchet function on both sides

Application:
For screw connections in inaccessible places with optimum flexibility

Execution:
- Finely serrated ratchet on ring side with 72 teeth
- Jaw-side ratchet function via sprung insert and special jaw shape

Advantage:
- Tight switching angle thanks to fine toothing
- Maximum flexibility offered by two-sided ratchet function



Width across flats		8 mm | 10 mm | 13 mm | 17 mm | 19 mm
Number of pieces in assortment/set (PCS)		5
Surface		Chrome-plated
Material		Chrome-vanadium steel
52044...	Ident. No.	600
		●

Prod. Gr. 5HB

ATORN® Double ring wrench (DIN 838)

deep offset on both sides

Execution:
- Drop-forged

Advantage:
- Energy profile increases the force application areas for optimum load distribution
- Gentle on the bolt/nut and tool
- Even slightly damaged heads can still be screwed on

Technical data:
- Tip profile type: ENERGY profile
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats		6 x 7 mm	8 x 9 mm	8 x 10 mm	10 x 11 mm	10 x 13 mm	12 x 13 mm	12 x 14 mm	13 x 14 mm
Length (mm)		178	195	195	200	220	220	220	220
52055...	Ident. No.	500	510	520	530	540	550	560	570
		●	●	●	●	●	●	●	●

Width across flats		13 x 15 mm	13 x 17 mm	14 x 15 mm	16 x 18 mm	16 x 17 mm	14 x 17 mm	17 x 19 mm	18 x 19 mm
Length (mm)		225	250	235	250	250	250	285	285
52055...	Ident. No.	580	590	600	610	620	625	630	640
		●	●	●	●	●	●	●	●

Width across flats		19 x 22 mm	19 x 24 mm	20 x 22 mm	21 x 23 mm	22 x 24 mm	24 x 26 mm	24 x 27 mm	25 x 28 mm
Length (mm)		300	300	300	300	320	330	330	345
52055...	Ident. No.	650	655	660	670	680	690	700	710
		●	●	●	●	●	●	●	●

Width across flats		27 x 32 mm	30 x 32 mm	32 x 36 mm	36 x 41 mm
Length (mm)		360	360	400	440
52055...	Ident. No.	720	750	760	765
		●	●	●	●

Prod. Gr. 5HB

ATORN® ORION® Double ring wrench sets (DIN 838)

Deep offset on both sides

Advantage:
- **No. 52055:**
  - Energy profile increases the force application areas for optimum load distribution
  - Gentle on the bolt/nut and tool
- Even slightly damaged heads can still be screwed on

Technical data:
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



No. 52055 800

Width across flats	Number of pieces in assortment/set (PCS)	ATORN® 52055... Ident. No.		ORION® 52059... Ident. No.	
6 x 7 mm | 8 x 9 mm | 10 x 11 mm | 12 x 13 mm | 14 x 15 mm | 16 x 17 mm | 18 x 19 mm | 20 x 22 mm	8	790	●	790	●
6 x 7 mm | 8 x 9 mm | 10 x 11 mm | 12 x 13 mm | 14 x 15 mm | 16 x 17 mm | 18 x 19 mm | 20 x 22 mm | 24 x 27 mm | 30 x 32 mm	10	800	●	800	●
6 x 7 mm | 8 x 9 mm | 10 x 11 mm | 10 x 13 mm | 12 x 13 mm | 14 x 15 mm | 16 x 17 mm | 17 x 19 mm | 18 x 19 mm | 20 x 22 mm | 24 x 27 mm | 30 x 32 mm	12	810	●	810	●

ATORN® = Prod. Gr. 5HB
ORION = Prod. Gr. 526

ATORN® Wrench

Adjustable

Application:
For quickly adjusting the wrench size.

Execution:
- Chrome-vanadium steel
- Metric adjustment scale
- Ergonomically shaped comfort handle
- Extremely large clamping range
- With hanging eyelet
- Smooth, ground jaws

Technical data:
- Jaw position: 15 Degree
- Surface: Burnished



Ident. No. 020

Max. width across flats (mm)		24	29	33
Length (mm)		150	200	250
52148...	Ident. No.	015	020	025
		●	●	●

Prod. Gr. 5HB

ATORN® Wrench

Adjustable

Application:
For quickly adjusting the wrench size.

Execution:
- Chrome-vanadium steel
- Drop-forged
- Type B
- Polished head
- Scale
- With hanging eyelet

Advantage:
- Shaft profile creates excellent bending rigidity
- Enables quick working with flexible wrench sizes and scale

Technical data:
- Jaw position: 15 Degree
- Surface: Chrome-plated



Max. width across flats (mm)		13	19	24	29	34
Length (mm)		110	155	205	255	310
52150...	Ident. No.	010	015	020	025	030
		●	●	●	●	●

Prod. Gr. 5HB

ATORN® Socket wrench set
1/4" square drive 6.3, DIN 3120

Execution:
- Chrome-vanadium steel inserts
- Hexagon with special profile

Advantage:
- Optimum force transmission thanks to special profile
- Bolt and nut are not damaged
- Higher torques possible
- Two-tone polyethylene foam inlay ensures any missing tools are instantly detected
- Oil and chemical-resistant foam inlay

Delivery:
In powder-coated steel case with polyethylene foam inlay



Ident. No. 011



Ident. No. 021



Ident. No. 031



Ident. No. 101

Drive		1/4 inch	1/4 inch	1/4 inch	1/4 inch | 1/2 inch
Number of pieces in assortment/set (PCS)		18	28	42	35
Sockets with hexagon-head tip provided		4 mm | 4.5 mm | 5 mm | 5.5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm	4 mm | 4.5 mm | 5 mm | 5.5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm	4 mm | 4.5 mm | 5 mm | 5.5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm	5.5 mm | 7 mm | 8 mm | 10 mm | 13 mm | 16 mm | 17 mm | 18 mm | 19 mm | 22 mm | 24 mm | 27 mm | 30 mm | 32 mm
Long sockets with hexagon-head tip provided		-	-	8 mm | 10 mm | 11 mm | 13 mm	-
Sockets with socket hexagon-head tip provided		-	3 mm | 4 mm | 5 mm | 6 mm | 8 mm	3 mm | 4 mm | 5 mm | 6 mm | 8 mm	3 mm | 4 mm | 5 mm | 6 mm | 8 mm | 10 mm | 12 mm | 14 mm | 17 mm
Sockets with socket hexagon head or external TX tip provided		-	-	TX10 | TX15 | TX20 | TX25 | TX30 | TX40	-
Sockets with cross-head tip provided		-	PH1 | PH2 | PZ1 | PZ2	PH1 | PH2 | PH3 | PZ1 | PZ2 | PZ3	-
Sockets with slotted tip provided		-	4 mm | 5.5 mm | 6.5 mm	4 mm | 5.5 mm | 6.5 mm	-
Ratchets provided		1/4-inch square | 150 mm	1/4-inch square | 150 mm	1/4-inch square | 150 mm	1/4-inch square | 150 mm | 1/2-inch square | 255 mm
Extensions provided		50 mm | 105 mm	50 mm	50 mm | 105 mm	50 mm | 105 mm | 125 mm | 250 mm
Cross handles provided		115 mm	115 mm	115 mm	115 mm | 300 mm
Cardan joints provided		38 mm	38 mm	38 mm	38 mm | 75 mm
External dimensions of box		220 x 110 x 35 mm	220 x 110 x 35 mm	315 x 115 x 43 mm	450 x 210 x 50 mm
58006...	Ident. No.	011	021	031	101
		●	●	●	●

Prod. Gr. 582

ATORN® Socket wrench set
1/4" square drive 6.3, DIN 3120

Execution:
- Universal special nut geometry
- suitable for hexagon, bi-hexagon, E-TX and inch

Advantage:
- Parts in the set are securely held in a flexible foam inlay

Delivery:
In impact-resistant plastic case



Drive		1/4 inch
Number of pieces in assortment/set (PCS)		40
Sockets with hexagon-head tip provided		4 mm | 4.5 mm | 5 mm | 5.5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm
Sockets with socket hexagon-head tip provided		3 mm | 4 mm | 5 mm | 6 mm | 7 mm | 8 mm
Sockets with socket hexagon head or external TX tip provided		TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40 | E5 | E6 | E7 | E8 | E10 | E11 | E12 | E14
Sockets with cross-head tip provided		PH1 | PH2 | PZ1 | PZ2
Sockets with multi-tooth XZN tip		M4 | M5 | M6 | M8 | M10
Ratchets provided		1/4-inch square | 120 mm
Extensions provided		100 mm
Drive handle provided		150 mm
Cardan joints provided		35 mm
Bit holder provided		1/4 inch
58006...	Ident. No.	040
		●

Prod. Gr. 582

ATORN® Socket wrench set
1/4” square drive 6.3, DIN 3120

Execution:
- Chrome-vanadium steel inserts
- Matt chromium-plated
- Ratchet with two-component handle
- Finely toothed
- With release button

Advantage:
- Two-tone polyethylene foam inlay ensures any missing tools are instantly detected

Delivery:
In sheet steel case with polyethylene foam inlay



Ident. No. 050



Ident. No. 060

Drive	Number of pieces in assortment/set (PCS)	Sockets with socket hexagon-head tip provided	Sockets with socket hexagon head or external TX tip provided	Ratchets provided	Extensions provided	58006... Ident. No.	
1/4 inch	18	-	TX8 | TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40 | E4 | E5 | E6 | E7 | E8 | E10	1/4-inch square	50 mm | 105 mm	050	●
1/4 inch	17	3 mm | 4 mm | 5 mm | 6 mm | 8 mm	TX8 | TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40	1/4-inch square	50 mm | 105 mm	060	●

Prod. Gr. 582

ATORN® Reversible ratchets: fine-tooth ratchet, telescopic ratchet, Mini ratchet
1/4 inch square drive 6.3

Application:
Ident. No. 010: Ratchet for manual socket wrench inserts and connection parts.
Ident. No. 050: ratchet for manual socket wrench bits and connectors.
Ident. No. 100: Ratchet for direct mounting of bits with 1/4” external hexagon.

Execution:
- **Ident. No. 010:**
  - Anti-clockwise and clockwise rotation possible using reversing lever with locking button
  - With hanging eyelet
- **Ident. No. 010, 100:** Finely toothed
- **Ident. No. 050:**
  - telescopic function: can be extended from 150 to 200 mm
  - ratcheting/clamping function
  - anti-clockwise and clockwise rotation possible using reversing lever with locking button
- **Ident. No. 100:**
  - Anti-clockwise/clockwise rotation can be switched using reversing lever
  - With thumb wheel

Advantage:
- **Ident. No. 100:** Thumb wheel for easier placement, screwing and unscrewing of bolts



Ident. No. 010



Ident. No. 050



Ident. No. 100

Tip size		1/4 inch	1/4 inch	1/4 inch
Length (mm)		150	200	100
Number of teeth (PCS)		72	72	72
Surface		Chrome-plated	Chrome-plated	Chrome-plated
Material		Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel
Material of the grip handle		2-component plastic	2-component plastic	Steel
58002...	Ident. No.	010	050	100
		●	●	●

Prod. Gr. 582

ATORN® Operating tools (DIN 3120)
1/4 inch square drive 6.3

Application:
No. 58003: Drive handle for manual socket wrench inserts and connection parts
No. 58006: drive handle for manual socket wrench inserts and connection parts

Execution:
- **No. 58003:** Screwdriver handle with 1/4” internal and external square
- **No. 58006:** 2-component screwdriver handle with 1/4-inch square drive



No. 58003



No. 58006

Tip size			1/4 inch
Surface			Chrome-plated
Material			Chrome-vanadium steel
	Length (mm)		
58003...	150	Ident. No.	080
			●
58006...	205	Ident. No.	085
			●

Prod. Gr. 582

®

ATORN **Operating tools** (DIN 3120)

1/4 inch square drive 6.3

Application:
T-handle for manual socket wrench inserts and connection parts

Execution:
- Movable sliding head



Tip size			1/4 inch
Surface			Chrome-plated
Material			Chrome-vanadium steel
	Length (mm)		
58185...	115	Ident. No.	010 ●

Prod. Gr. 582

ATORN® **Socket wrench insert, short and long** (DIN 3124)

Hexagon, 1/4 inch square drive 6.3 DIN 3120

Advantage:
- Optimum force transmission thanks to special profile
- Bolt and nut are not damaged
- Higher torques possible

Technical data:
- Drive: 1/4 inch
- Tip profile type: Special profile
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



No. 58030

Width across flats				4 mm	4.5 mm	5 mm	5.5 mm	6 mm	7 mm
Outer Ø (mm)				11	11	11	11	11	11
		Length (mm)							
58030...	Standard version	25	Ident. No.	040 ●	045 ●	050 ●	055 ●	060 ●	070 ●
58042...	Long version	50	Ident. No.	040 ●	045 ●	050 ●	055 ●	060 ●	070 ●

Width across flats				8 mm	9 mm	10 mm	11 mm	12 mm	13 mm
Outer Ø (mm)				12	13	14	16	17	18
		Length (mm)							
58030...	Standard version	25	Ident. No.	080 ●	090 ●	100 ●	110 ●	120 ●	130 ●
58042...	Long version	50	Ident. No.	080 ●	090 ●	100 ●	110 ●	120 ●	130 ●

Width across flats				14 mm
Outer Ø (mm)				20
		Length (mm)		
58030...	Standard version	25	Ident. No.	140 ●

Width across flats				14 mm
Outer Ø (mm)				20
		Length (mm)		
58042...	Long version	50	Ident. No.	140 ●

Prod. Gr. 582

ATORN® **Socket spanner inserts** (DIN 3120)

For external TORX screws, 1/4 inch square drive 6.3 DIN 3120

Execution:
- Polished
- Knurled

Advantage:
- Secure handling thanks to non-slip knurling

Technical data:
- Drive: 1/4 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel

Tip size		E4	E5	E6	E7	E8	E10
58057...	Ident. No.	040 ●	050 ●	060 ●	070 ●	080 ●	100 ●

Prod. Gr. 582

ATORN® Screwdriver bit (DIN 3120)

For slotted screws, 1/4" square drive, 6.3, DIN 3120

Execution:
- Burnished tips

Advantage:
- Improved resistance to corrosion thanks to burnishing process

Technical data:
- Drive: 1/4 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width of cutting edge (mm)		4.0	5.5	6.5
Thickness of cutting edge (mm)		0.8	1.0	1.2
58073...	Ident. No.	**060**	**070**	**080**
		●	●	●

Prod. Gr. 582

ATORN® Screwdriver bits (DIN 3120)

For Phillips screws

Execution:
- Burnished tips

Advantage:
- Improved resistance to corrosion thanks to burnishing process

Technical data:
- Drive: 1/4 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Tip size		PH1	PH2	PH3	PZ1	PZ2	PZ3
58091...	Ident. No.	**010**	**020**	**030**	-	-	-
		●	●	●			
58092...	Ident. No.	-	-	-	**010**	**020**	**030**
					●	●	●

Prod. Gr. 582

ATORN® Bit adapter (DIN 3120)

1/4" square drive 6.3, DIN 3120

Application:
Screwdriver adaptation from 1/4" square drive to a 1/4" external square drive



Drive		1/4 inch
Tip size		1/4 inch
Surface		Bare
Material		Chrome-vanadium steel
58003...	Ident. No.	**090**
		●

Prod. Gr. 582

ATORN® Extensions (DIN 3123)

1/4 inch square drive 6.3 DIN 3120

Application:
Extension for hand-operated socket wrench inserts with 1/4" square drive

Execution:
- Polished



Drive		1/4 inch	1/4 inch	1/4 inch
Tip size		1/4 inch	1/4 inch	1/4 inch
Length (mm)		50	105	150
Outer Ø (mm)		11	11	11
Surface		Chrome-plated	Chrome-plated	Chrome-plated
Material		Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel
58227...	Ident. No.	**010**	**020**	**030**
		●	●	●

Prod. Gr. 582

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ICON RIDGE

Cardan joints (DIN 3123)

With internal detent 1/4 inch square drive 6.3 DIN 3120

Application:
Cardan joint for screw connections with projecting edges and confined installation areas

Execution:
- Polished
- With inner lock

Advantage:
- Flexible bending angle for difficult-to-reach installation areas



No. 58247



No. 58248

				ATORN		HAZET	
Drive	Tip size	Surface	Material	58247... Ident. No.		58248... Ident. No.	
1/4 inch	1/4 inch	Chrome-plated	Chrome-vanadium steel	010	●	010	●

HAZET = Prod. Gr. 569
ATORN® = Prod. Gr. 582

ATORN® Socket wrench set

3/8" square drive 10, DIN 3120

Execution:
- Chrome-vanadium steel
- 17 inserts, 6 operating tools
- Hexagons with special profile

Advantage:
- Optimum force transmission thanks to special profile
- Bolt and nut are not damaged
- Higher torques possible
- Two-tone foam inlay ensures any missing tools are instantly detected

Delivery:
In sheet steel box, powder-coated, with two-tone foam inlay and removable recesses



Drive		3/8 inch
Number of pieces in assortment/set (PCS)		23
Sockets with hexagon-head tip provided		6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 15 mm | 16 mm | 17 mm | 18 mm | 19 mm | 20 mm | 21 mm | 22 mm
Ratchets provided		3/8-inch square
Extensions provided		50 mm | 75 mm | 150 mm
Cardan joints provided		55 mm
External dimensions of box		315 x 115 x 43 mm
58278...	Ident. No.	011
		●

Prod. Gr. 582

ATORN® Ratchet

3/8" square drive 10, DIN 3120

Application:
Ratchet for manual socket wrench inserts and connection parts

Execution:
- Anti-clockwise and clockwise rotation possible using reversing lever with locking button
- Finely serrated
- With hanging eyelet



Tip size		3/8 inch
Length (mm)		190
Number of teeth (PCS)		72
Surface		Chrome-plated
Material		Chrome-vanadium steel
Material of the grip handle		2-component plastic
58275...	Ident. No.	010
		●

Prod. Gr. 582

ATORN® Socket spanner bit (DIN 3124)

Hexagon, 3/8" square drive 10 DIN 3120

Application:
Socket wrench insert with hexagon and 3/8" square drive

Execution:
- Polished

Technical data:
- Drive: 3/8 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats	6 mm	7 mm	8 mm	9 mm	10 mm	11 mm	12 mm	13 mm
Length (mm)	24	24	24	24	25	26	27	28
Outer Ø (mm)	17	17	17	17	17	18	18	18
58299... Ident. No.	060	070	080	090	100	110	120	130
	●	●	●	●	●	●	●	●

Width across flats	14 mm	15 mm	16 mm	17 mm	18 mm	19 mm	20 mm	21 mm
Length (mm)	28	30	30	30	30	30	32	32
Outer Ø (mm)	20	21	22	23	26	26	27	28
58299... Ident. No.	140	150	160	170	180	190	200	210
	●	●	●	●	●	●	●	●

Width across flats	22 mm
Length (mm)	34
Outer Ø (mm)	30
58299... Ident. No.	220
	●

Prod. Gr. 582

ATORN® Screwdriver bit (DIN 3120)

For hexagon socket screws, 3/8" square drive, 10, DIN 3120

Application:
Screwdriver bit for hexagon socket screws with 3/8" square drive.

Technical data:
- Drive: 3/8 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats	3 mm	4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm
Length (mm)	47	47	47	47	47	49	50	50	50
Outer Ø (mm)	17	17	17	17	17	17	18	19	20
58430... Ident. No.	030	040	050	060	070	080	090	100	120
	●	●	●	●	●	●	●	●	●

Prod. Gr. 582

ATORN® Screwdriver bits

For internal TORX screws, 3/8 inch square drive 10 DIN 3120

Application:
screwdriver bit for internal TX screws with 3/8 inch square drive.

Execution:
- Special steel blades
- Steel grey

Technical data:
- Drive: 3/8 inch
- Outer diameter: 17 mm
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Tip size	TX20	TX25	TX27	TX30	TX40	TX45	TX50
Length (mm)	43.5	43.5	43.5	43.5	43.5	43.5	44.5
58450... Ident. No.	020	025	027	030	040	045	050
	●	●	●	●	●	●	●

Prod. Gr. 582

ATORN® Extensions (DIN 3123)

3/8" square drive 10, DIN 3120

Application:
Extension for hand-operated socket wrench inserts with 3/8" square drive

Execution:
- Polished
- Rigid version



Drive		3/8 inch	3/8 inch	3/8 inch	3/8 inch	3/8 inch
Tip size		3/8 inch	3/8 inch	3/8 inch	3/8 inch	3/8 inch
Length (mm)		50	75	125	150	250
Outer Ø (mm)		17	17	17	17	17
Surface		Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated
Material		Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel
58510...	Ident. No.	010	020	030	040	050
		●	●	●	●	●

Prod. Gr. 582

Cardan joints (DIN 3123)

3/8 inch square drive 10 DIN 3120

Application:
Cardan joint for screw connections with projecting edges and confined installation areas

Advantage:
- Flexible bending angle for difficult-to-reach installation areas

Execution:
- Polished



No. 58530



No. 58532

Drive					3/8 inch
Tip size					3/8 inch
Surface					Chrome-plated
		Length (mm)	Material		
ATORN	58530...	46	Chrome-vanadium steel	Ident. No.	010 ●
HAZET	58532...	46.5	Chrome-vanadium steel	Ident. No.	010 ●
STAHLWILLE	58536...	55	Steel, specially hardened	Ident. No.	010 ●

STAHLWILLE = Prod. Gr. 531
HAZET = Prod. Gr. 569
ATORN® = Prod. Gr. 582

ATORN® Socket spanner sets

With hexagon, hexagon socket and TORX inserts, 1/2 inch square drive 12.5 DIN 3120

Execution:
- Chrome-vanadium steel
- Hexagon with special profile
- 1/2" square drive

Advantage:
- Optimum force transmission thanks to special profile
- Bolt and nut are not damaged
- Higher torques possible
- Two-tone polyethylene foam inlay ensures any missing tools are instantly detected
- Oil and chemical-resistant foam inlay

Delivery:
In powder-coated steel case with polyethylene foam inlay



Ident. No. 011
19 pcs.



Ident. No. 021
22 pcs.



Ident. No. 031
35 pcs.



Ident. No. 041
21 pcs.

Drive		1/2 inch	1/2 inch	1/2 inch	1/2 inch
Number of pieces in assortment/set (PCS)		19	22	35	21
Sockets with hexagon-head tip provided		10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 15 mm | 16 mm | 17 mm | 19 mm | 22 mm | 24 mm | 27 mm | 30 mm | 32 mm	10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 15 mm | 16 mm | 17 mm | 18 mm | 19 mm | 22 mm | 24 mm | 27 mm | 30 mm | 32 mm	10 mm | 11 mm | 12 mm | 13 mm | 14 mm | 15 mm | 16 mm | 17 mm | 18 mm | 19 mm | 20 mm | 21 mm | 22 mm | 23 mm | 24 mm | 27 mm | 30 mm | 32 mm	-
Sockets with socket hexagon-head tip provided		-	-	7 mm | 8 mm | 10 mm | 12 mm | 14 mm	-
Sockets with socket hexagon head or external TX tip provided		-	-	TX30 | TX40 | TX45 | TX55 | TX60	TX20 | TX25 | TX27 | TX30 | TX40 | TX45 | TX50 | TX55 | TX60 | E10 | E11 | E12 | E14 | E16 | E18 | E20 | E22 | E24
Sockets with cross-head tip provided		-	-	PH3 | PH4	-
Ratchets provided		1/2-inch square	1/2-inch square	1/2-inch square	1/2-inch square
Extensions provided		125 mm | 250 mm	125 mm | 250 mm	125 mm | 250 mm	125 mm | 250 mm
Cross handles provided		300 mm	-	-	-
Cardan joints provided		75 mm	75 mm	75 mm	-
58574...	Ident. No.	011 ●	021 ●	031 ●	041 ●

ATORN® Reversible ratchets: fine-tooth ratchet and telescopic ratchet

reversible 1/2 inch square drive, 12.5, DIN 3120

Application:
Ident. No. 010, 070: Ratchet for hand-operated socket wrench inserts and connection parts with 1/2" square drive.
Ident. No. 060: ratchet for hand-operated socket wrench inserts and connection parts with 1/2" square drive.

Execution:
- **Ident. No. 010:** With hanging eyelet
- **Ident. No. 010, 070:**
  - Anti-clockwise and clockwise rotation possible using reversing lever with locking button
  - Finely serrated
- **Ident. No. 060:**
  - telescopic function: can be extended from 305 to 445 mm
  - ratcheting/clamping function
  - anti-clockwise and clockwise rotation possible using reversing lever with locking button
  - finely serrated
- **Ident. No. 070:**
  - Telescopic function: Can be extended from 457 to 600 mm
  - Ratcheting/clamping function



Ident. No. 010



Ident. No. 060–070

Tip size		1/2 inch	1/2 inch	1/2 inch
Length (mm)		255	445	600
Number of teeth (PCS)		72	72	72
Surface		Chrome-plated	Chrome-plated	Chrome-plated
Material		Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel
Material of the grip handle		2-component plastic	2-component plastic	2-component plastic
58576...	Ident. No.	**010**	**060**	**070**
		●	●	●

Prod. Gr. 582

Application:
T-handle for hand-operated socket wrench inserts and connection parts with 1/2" square drive.

Execution:
- **No. 58794:** Movable sliding head
- **No. 58804–58808:** Polished



No. 58794

Tip size					1/2 inch
Surface					Chrome-plated
		Length (mm)	Material		
ATORN	**58794...**	300	Chrome-vanadium steel	Ident. No.	**010** ●
GEDORE	**58800...**	292	Chrome-vanadium steel	Ident. No.	**010** ●
HAZET	**58804...**	298	Chrome-vanadium steel	Ident. No.	**010** ●
STAHLWILLE	**58808...**	300	Steel, specially hardened	Ident. No.	**010** ●

GEDORE = Prod. Gr. 530
STAHLWILLE = Prod. Gr. 531
HAZET = Prod. Gr. 569
ATORN® = Prod. Gr. 582

ATORN® Socket wrench bit (DIN 3124)

Hexagon, 1/2" square drive, 12.5, DIN 3120

Technical data:
- Drive: 1/2 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats		8 mm	9 mm	10 mm	11 mm	12 mm	13 mm		15 mm
Length (mm)		38	38	38	38	38	38	38	38
Outer Ø (mm)		22	22	22	22	22	22	22	23
58590...	Ident. No.	**080** ●	**090** ●	**100** ●	**110** ●	**120** ●	**130** ●	**140** ●	**150** ●

Width across flats		16 mm	17 mm	18 mm	19 mm	20 mm	21 mm	22 mm	23 mm
Length (mm)		38	38	38	38	38	38	42	42
Outer Ø (mm)		24	25	25	27	28	29	30	30
58590...	Ident. No.	**160** ●	**170** ●	**180** ●	**190** ●	**200** ●	**210** ●	**220** ●	**230** ●

Width across flats		24 mm	26 mm	27 mm	28 mm	30 mm	32 mm
Length (mm)		42	42	45	45	45	47
Outer Ø (mm)		32	34	36	38	39	42
58590...	Ident. No.	**240** ●	**260** ●	**270** ●	**280** ●	**300** ●	**320** ●

Prod. Gr. 582

ATORN® Socket wrench bit (DIN 3124)

Long version, bi-hexagon, 1/2" square drive, 12.5, DIN 3120

Application:
Socket wrench insert with bi-hexagon and 1/2" square drive

Execution:
- Long version

Technical data:
- Drive: 1/2 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats	10 mm	11 mm	12 mm	13 mm	14 mm	15 mm	16 mm	17 mm
Length (mm)	77	77	77	77	77	77	77	77
Outer Ø (mm)	22.5	22.5	22.5	22.5	22.5	22.5	24	23
58627... Ident. No.	100	110	120	130	140	150	160	170
	●	●	●	●	●	●	●	●

Width across flats	18 mm	19 mm	20 mm	21 mm	22 mm	24 mm	26 mm	27 mm
Length (mm)	82	82	82	82	82	82	82	82
Outer Ø (mm)	24	25	30	30	31	32	34	37
58627... Ident. No.	180	190	200	210	220	240	260	270
	●	●	●	●	●	●	●	●

Width across flats	30 mm	32 mm
Length (mm)	82	82
Outer Ø (mm)	41	42
58627... Ident. No.	300	320
	●	●

Prod. Gr. 582

ATORN® Socket wrench bit

For external TORX screws, 1/2" square drive, 12.5, DIN 3120

Application:
socket spanner insert for external TX screws with 1/2 inch square drive

Execution:
- Knurled

Advantage:
- Good grip thanks to knurling

Technical data:
- Drive: 1/2 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Tip size	E10	E11	E12	E14	E16	E18	E20	E22	E24
Length (mm)	38	38	38	38	38	38	38	38	41
Outer Ø (mm)	22	22	22	22	22	27	27	27	28.5
58662... Ident. No.	010	011	012	014	016	018	020	022	024
	●	●	●	●	●	●	●	●	●

Prod. Gr. 582

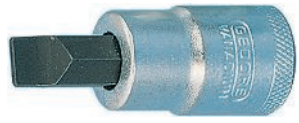
ATORN® Screwdriver bit

For slotted screws, 1/2" square drive 12.5 DIN 3120

Execution:
- With ball-securing groove
- Burnished tips

Advantage:
- Improved resistance to corrosion thanks to burnishing process

Technical data:
- Drive: 1/2 inch
- Length: 60 mm
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Thickness of cutting edge (mm)	1.2	1.6	2.0	2.5
Width of cutting edge (mm)	8.0	10.0	12.0	14.0
58674... Ident. No.	010	015	030	040
	●	●	●	●

Prod. Gr. 582

ATORN® Screwdriver bits

For Phillips screws

Technical data:
- Drive: 1/2 inch
- Length: 60 mm
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Ident. No. 020–040

Tip size		PH2	PH3	PH4	PZ2	PZ3	PZ4
58678...	Ident. No.	020	030	040	120	130	140
		●	●	●	●	●	●

Prod. Gr. 582

ATORN® Screwdriver bit

For hexagon socket screws, 1/2 inch square drive 12.5 DIN 3120

Application:
Screwdriver bit for hexagon socket screws with 1/2" square drive

Execution:
- Short version
- Burnished drive

Advantage:
- Improved resistance to corrosion thanks to burnishing process

Technical data:
- Drive: 1/2 inch
- Length: 55 mm
- Outer diameter: 25 mm
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



Width across flats		4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm	12 mm	14 mm	17 mm	19 mm
58682...	Ident. No.	040	050	060	070	080	090	100	120	140	170	190
		●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 582

ATORN® Screwdriver insert sets

For hexagon socket screws, 1/2 inch square drive 12.5 DIN 3120

Application:
Ident. No. 300: Selection of various screwdriver bits for hexagon socket screws with 1/2" square drive
Ident. No. 310: Selection of various screwdriver bits for hexagon socket screws and operating tools with 1/2" square drive

Execution:
- Chrome-vanadium steel
- Short version
- **Ident. No. 310:** With reversible lever and 1/2" extension

Delivery:
In metal case with soft foam inlay



Ident. No. 300



Ident. No. 310

Drive		1/2 inch	1/2 inch
Number of pieces in assortment/set (PCS)		9	11
Sockets with socket hexagon-head tip provided		5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 12 mm | 14 mm | 17 mm	5 mm | 6 mm | 7 mm | 8 mm | 9 mm | 10 mm | 12 mm | 14 mm | 17 mm
Ratchets provided		-	1/2-inch square
Extensions provided		-	250 mm
58682...	Ident. No.	300	310
		●	●

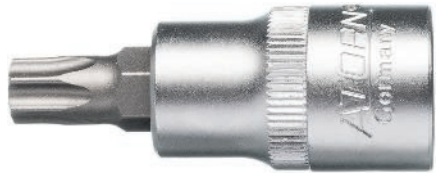
Prod. Gr. 582

ATORN® Screwdriver bit

For internal TORX® screws, 1/2 inch square drive 12.5 DIN 3120

Execution:
- **No. 58755:** Long version

Technical data:
- Drive: 1/2 inch
- Surface: Chrome-plated
- Material: Chrome-vanadium steel



No. 58754



No. 58755

Tip size				TX20	TX25	TX27	TX30	TX40	TX45	TX50	TX55	TX60
Outer Ø (mm)				22.7	22.7	22.7	22.7	22.7	22.7	22.7	23.7	23.7
		Length (mm)										
58754...	Short version	55	Ident. No.	**020** ●	**025** ●	**027** ●	**030** ●	**040** ●	**045** ●	**050** ●	**055** ●	**060** ●
58755...	Long version	110	Ident. No.	**020** ●	**025** ●	**027** ●	**030** ●	**040** ●	**045** ●	**050** ●	**055** ●	**060** ●

Prod. Gr. 582

Adapters (DIN 3123)

1/2" square drive 12.5, DIN 3120

Application:
No. 58782 010, 58784 010, 58788 010, 58792 010: For adapting a 1/2" internal square drive to a 3/8" outside square drive.
No. 58782 020, 58784 020, 58788 020, 58792 020: For adapting a 1/2" internal square drive to a 3/4" outside square drive.
No. 58784 005: For connecting two 1/2" internal squares.

Technical data:
- Drive: 1/2 inch
- Surface: Chrome-plated



No. 58782 010



No. 58784 005



No. 58784 010

Tip size	Material	ATORN® 58782... Ident. No.		GEDORE 58784... Ident. No.		HAZET 58788... Ident. No.		STAHLWILLE 58792... Ident. No.	
3/8 inch	Chrome-vanadium steel	**010**	●	**010**	●	**010**	●	-	-
3/4 inch	Chrome-vanadium steel	**020**	●	**020**	●	**020**	●	-	-
1/2 inch	Chrome-vanadium steel	-	-	**005**	●	-	-	-	-
3/8 inch	Steel, specially hardened	-	-	-	-	-	-	**010**	●
3/4 inch	Steel, specially hardened	-	-	-	-	-	-	**020**	●

GEDORE = Prod. Gr. 530
STAHLWILLE = Prod. Gr. 531
HAZET = Prod. Gr. 569
ATORN® = Prod. Gr. 582

ATORN® Extensions (DIN 3123)

1/2" square drive 12.5, DIN 3120

Application:
Extension for hand-operated socket wrench inserts with 1/2" square drive.



Drive		1/2 inch	1/2 inch	1/2 inch
Tip size		1/2 inch	1/2 inch	1/2 inch
Length (mm)		75	125	250
Outer Ø (mm)		23	23	23
Surface		Chrome-plated	Chrome-plated	Chrome-plated
Material		Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel
58842...	Ident. No.	**010** ●	**020** ●	**030** ●

Prod. Gr. 582

Cardan joints (DIN 3123)

1/2 inch square drive 12.5 DIN 3120

Application:
Cardan joint for screw connections with projecting edges and confined installation areas.



No. 58858

				ATORN		GEDORE		HAZET		STAHLWILLE	
			Length (mm)	75		73.5		70		71	
Drive	Tip size	Surface	Material	58858... Ident. No.		58864... Ident. No.		58868... Ident. No.		58872... Ident. No.	
1/2 inch	1/2 inch	Chrome-plated	Chrome-vanadium steel	010	●	010	●	010	●	010	●

GEDORE = Prod. Gr. 530
STAHLWILLE = Prod. Gr. 531
HAZET = Prod. Gr. 569
ATORN® = Prod. Gr. 582

ATORN® Socket spanner set

Hexagon, 3/4 inch square drive 20 DIN 3120

Execution:
- Chrome-vanadium steel
- Chrome-plated
- Hexagon inserts with knurling
- Reversible ratchet with maximum torque of 2000 Nm

Delivery:
In lacquered metal case



Drive		3/4 inch
Sockets with hexagon-head tip provided		22 mm | 24 mm | 27 mm | 30 mm | 32 mm | 36 mm | 38 mm | 41 mm | 46 mm | 50 mm | 55 mm | 60 mm
Ratchets provided		3/4-inch square
Extensions provided		200 mm | 400 mm
Cross handles provided		500 mm
58902...	Ident. No.	100
		●

Prod. Gr. 582

ATORN® Hexagon angled screwdriver, short design

(Hex keys)

Execution:
- Chrome-vanadium steel

Advantage:
- Better resistance to corrosion



Width across flats			0.7 mm	0.9 mm	1.3 mm	1.5 mm	2 mm	2.5 mm	3 mm
Limb length x limb length 2			33 x 7 mm	33 x 11 mm	41 x 13 mm	46.5 x 15.5 mm	52 x 18 mm	58.5 x 20.5 mm	66 x 23 mm
Surface			Burnished	Burnished	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated
	Version								
52114...	Short	Ident. No.	470	480	490	500	510	520	530
			●	●	●	●	●	●	●

Width across flats			4 mm	5 mm	6 mm	7 mm	8 mm	9 mm	10 mm
Limb length x limb length 2			74 x 29 mm	85 x 33 mm	96 x 38 mm	102 x 41 mm	108 x 44 mm	114 x 47 mm	122 x 50 mm
Surface			Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated
	Version								
52114...	Short	Ident. No.	540	550	560	570	580	590	600
			●	●	●	●	●	●	●

Width across flats			11 mm	12 mm	14 mm	17 mm	19 mm	22 mm	24 mm
Limb length x limb length 2			129 x 53 mm	137 x 57 mm	154 x 70 mm	177 x 80 mm	199 x 89 mm	222 x 102 mm	248 x 114 mm
Surface			Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated
	Version								
52114...	Short	Ident. No.	610	620	630	640	650	660	665
			●	●	●	●	●	●	●

Width across flats			27 mm	30 mm	32 mm	36 mm
Limb length x limb length 2			277 x 127 mm	315 x 142 mm	347 x 157 mm	391 x 176 mm
Surface			Nickel-plated	Nickel-plated	Nickel-plated	Nickel-plated
	Version					
52114...	Short	Ident. No.	670	675	680	685
			●	●	●	●

Prod. Gr. 590

ATORN® Hexagon angled screwdriver, long design
(Hex keys)

Execution:
- Chrome-vanadium steel

Advantage:
- Excellent material strength
- Better resistance to corrosion

Technical data:
- Surface: Nickel-plated



Width across flats			1.5 mm	2 mm	2.5 mm	3 mm	4 mm	5 mm	6 mm
Limb length x limb length 2			91.5 x 15.5 mm	102 x 18 mm	114.5 x 20.5 mm	129 x 23 mm	144 x 29 mm	165 x 33 mm	186 x 38 mm
	Version								
52116...	Long	Ident. No.	500 ●	510 ●	520 ●	530 ●	540 ●	550 ●	560 ●

Width across flats			7 mm	8 mm	9 mm	10 mm	11 mm	12 mm	14 mm
Limb length x limb length 2			197 x 41 mm	208 x 44 mm	219 x 47 mm	234 x 50 mm	247 x 53 mm	262 x 57 mm	294 x 70 mm
	Version								
52116...	Long	Ident. No.	570 ●	580 ●	590 ●	600 ●	610 ●	620 ●	630 ●

Width across flats			17 mm	19 mm	22 mm
Limb length x limb length 2			337 x 80 mm	379 x 89 mm	422 x 102 mm
	Version				
52116...	Long	Ident. No.	640 ●	650 ●	660 ●

Prod. Gr. 590

ATORN® Hexagon offset screwdriver sets
(Hex keys)

Execution:
- Chrome-vanadium steel

Advantage:
- Excellent material strength
- Better resistance to corrosion

Technical data:
- Surface: Nickel-plated



No. 52114 705–52114 725



No. 52114 800, 52116 805



No. 52116 705–52116 715

Width across flats				2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm	2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm | 10 mm	2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm | 10 mm | 12 mm | 14 mm
Number of pieces in assortment/set (PCS)				6	8	10
		Version				
52114...	In plastic bag	Short	Ident. No.	705 ●	715 ●	725 ●
52114...	In long version bag	Short	Ident. No.	-	800 ●	-
52116...	In plastic bag	Long	Ident. No.	705 ●	715 ●	-
52116...	In long version bag	Long	Ident. No.	-	805 ●	-

Prod. Gr. 590

ATORN® Screwdriver sets
In foldaway hand case

Application:
Ident. No. 100–110: For hexagon socket screws.
Ident. No. 120: for internal TX screws.

Execution:
- Screwdriver blades made from chrome-vanadium steel
- Two-component foldaway holder with lifting device
- **Ident. No. 120:** Steel grey

Advantage:
- Better resistance to corrosion



Ident. No. 100



Ident. No. 110



Ident. No. 120

Tip size		-	-	TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40
Width across flats		1.5 mm | 2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm	2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm | 10 mm	-
Surface		Nickel-plated	Nickel-plated	-
Number of pieces in assortment/set		7	7	8
52130...	Ident. No.	100	110	120
		●	●	●

Prod. Gr. 590

ATORN® Hexagonal screwdriver with T-handle
with 2-component handle

Execution:
- Easy-grip soft coating for optimum power transmission
- Hard core for lasting blade/handle connection even under the highest loads
- Blade made of CrV and CrMV (special alloy)
- Optimum performance data up to 100% above the DIN values
- Matt chrome-plated blade with black tip

Technical data:
- Surface: Chrome-plated



Width across flats		2 mm	2.5 mm	3 mm	3 mm	3 mm	3 mm	4 mm	4 mm
Blade length (mm)		100	100	80	100	150	200	100	150
52139...	Ident. No.	700	710	720	722	724	726	730	732
		●	●	●	●	●	●	●	●

Width across flats		4 mm	5 mm	5 mm	5 mm	6 mm	6 mm	6 mm	8 mm
Blade length (mm)		200	100	150	200	100	150	200	100
52139...	Ident. No.	734	740	742	744	750	752	754	760
		●	●	●	●	●	●	●	●

Width across flats		8 mm	8 mm	10 mm	10 mm
Blade length (mm)		150	200	100	200
52139...	Ident. No.	762	764	770	772
		●	●	●	●

Prod. Gr. 590

ATORN® Hexagonal screwdriver set with T-handle
with 2-component handle

Execution:
- Comfortable non-slip soft coating provides for optimal power transmission
- Hard core for lasting blade/handle connection even under the highest loads
- Blade made of special CrV and CrMV alloy
- Optimal performance data up to 100% above DIN values
- Matt chrome-plated blade with Black-Tip
- Blade lengths: 2x100 mm/2.5x100mm/3x100 mm/4x150 mm/5x150 mm/6x200 mm/8x200 mm

Technical data:
- Width across flats: 2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm
- Surface: Chrome-plated



52139...	Ident. No.	810
		●

Prod. Gr. 590

ATORN® Hexagon screwdriver
straight

Execution:
- Blade made of chrome-vanadium steel
- Continuously hardened
- Rounded front edges
- With hanging eyelet

Advantage:
- Ergonomic handle for comfortable handling
- Makes it easier to insert the blade thanks to the rounded front edges
- Better resistance to corrosion

Technical data:
- Surface: Nickel-plated



Width across flats	2 mm	2.5 mm	3 mm	3 mm	3 mm	4 mm	4 mm	4 mm
Blade length (mm)	100	100	100	150	200	100	150	200
Length (mm)	125	125	125	175	225	125	175	225
52139... Ident. No.	500	510	520	530	535	540	550	555
	●	●	●	●	●	●	●	●

Width across flats	5 mm	5 mm	5 mm	6 mm	6 mm	6 mm	8 mm	8 mm
Blade length (mm)	100	150	200	100	150	200	100	150
Length (mm)	132	182	232	132	182	232	132	182
52139... Ident. No.	560	570	575	580	590	595	600	610
	●	●	●	●	●	●	●	●

Width across flats	8 mm	10 mm	10 mm
Blade length (mm)	200	100	200
Length (mm)	232	139	239
52139... Ident. No.	615	620	625
	●	●	●

Prod. Gr. 590

ATORN® Hexagon screwdriver set
Straight, with ergonomic T-handle

Execution:
- Blade made of chrome-vanadium steel
- Continuously hardened
- Rounded front edges
- With hanging eyelet
- Blade lengths: 2x100 mm/2.5x100mm/3x100 mm/4x150 mm/5x150 mm/6x200 mm/8x200 mm

Advantage:
- Ergonomic handle for comfortable handling
- Makes it easier to insert the blade thanks to the rounded front edges
- Better resistance to corrosion



Width across flats	2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm
Surface	Nickel-plated
52139... Ident. No.	800
	●

Prod. Gr. 590

ATORN® Hexagonal angled screwdriver
Long versions, short arms

Execution:
- Hexagonal ball end on the long wrench side
- Shorter arm bent by 100°
- Chrome-vanadium steel
- Hardened
- Chrome-plated

Advantage:
- Ball end enables screws to be tightened at angles of up to 25°
- Bent arm provides better accessibility
- Wrench is easy to remove

Delivery:
In functional plastic holder



Width across flats	1.5 mm | 2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm | 10 mm
Surface	Nickel-plated
Version	
52137... Long Ident. No.	200
	●

Prod. Gr. 590

ATORN® Hexagonal angled screwdriver set

Long version, coloured paint

Execution:
- Hexagonal ball end on the long wrench side
- Coated with wearproof powder paint
- Chrome-vanadium steel
- Hardened

Advantage:
- Ball end enables screws to be tightened at angles of up to 25°
- Colour coating ensures instant identification of the wrench size
- Wrench is easy to remove

Delivery:
In functional plastic holder



Width across flats			1.5 mm | 2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm | 10 mm
Surface			Lacquered
	Version		
52139...	Long	Ident. No.	001
			●

Prod. Gr. 590

ATORN® Hexagonal angled screwdriver

Long version

Execution:
- Hexagonal ball end on the long wrench side
- Chrome-vanadium steel
- Hardened

Advantage:
- Ball end enables screws to be tightened at angles of up to 25°
- Better resistance to corrosion

Technical data:
- Surface: Nickel-plated



Width across flats			1.5 mm	2 mm	2.5 mm	3 mm	4 mm	5 mm	6 mm
Limb length x limb length 2			91.5 x 15.5 mm	102 x 18 mm	114.5 x 20.5 mm	129 x 23 mm	144 x 29 mm	165 x 33 mm	186 x 38 mm
	Version								
52139...	Long	Ident. No.	015	020	025	030	040	050	060
			●	●	●	●	●	●	●

Width across flats			8 mm	10 mm	12 mm
Limb length x limb length 2			208 x 44 mm	234 x 50 mm	162 x 57 mm
	Version				
52139...	Long	Ident. No.	080	100	120
			●	●	●

Prod. Gr. 590

ATORN® Hexagonal angled screwdriver set

Long version

Execution:
- Hexagonal ball end on the long wrench side
- Chrome-vanadium steel
- Hardened

Advantage:
- Ball end enables screws to be tightened at angles of up to 25°
- Better resistance to corrosion
- Wrench is easy to remove

Delivery:
In functional plastic holder



Width across flats			1.5 mm | 2 mm | 2.5 mm | 3 mm | 4 mm | 5 mm | 6 mm | 8 mm | 10 mm
Surface			Nickel-plated
	Version		
52139...	Long	Ident. No.	900
			●

Prod. Gr. 590

ATORN® Hexagon screwdriver with ball head
straight

Execution:
- Hexagon ball end
- Blade made of chrome-vanadium steel
- Hardened
- 3-component power grip, with large soft area

Advantage:
- Ball end enables screws to be tightened at angles of up to 30°
- 3-component power grip with large soft area for comfortable use and fatigue-free working

Technical data:
- Version: Straight
- Surface: Chrome-plated



Width across flats		2 mm	2.5 mm	3 mm	4 mm	5 mm	6 mm	8 mm	10 mm
Blade length (mm)		100	100	100	100	100	125	150	150
Length (mm)		200	200	200	210	210	240	260	270
52134...	Ident. No.	021	026	031	041	051	061	081	101
		●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® Hexagon screwdriver set with ball head
straight

Execution:
- Hexagon ball head
- Blade made of chrome-vanadium steel
- Hardened

Advantage:
- Ball end enables screws to be tightened at angles of up to 30°
- 3-component power grip with large soft area for comfortable use and fatigue-free working



Width across flats		3 mm | 4 mm | 5 mm | 6 mm | 8 mm
Surface		Chrome-plated
52134...	Ident. No.	201
		●

Prod. Gr. 590

ATORN® TX angled screwdriver set
For internal TORX® screws, coloured paint

Execution:
- TX ball head on the long wrench side
- Chrome-vanadium steel
- Coated with wearproof powder paint
- Hardened

Advantage:
- Colour powder coating ensures instant identification of wrench sizes
- Ball end also enables slightly slanted screw connections in hard-to-reach areas

Delivery:
In functional plastic holder



Tip size		TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40
Surface		Lacquered
Number of pieces in assortment/set		8
52146...	Ident. No.	150
		●

Prod. Gr. 590

ATORN® TX angled screwdriver set
For internal TORX® screws

Execution:
- Chrome-vanadium steel
- Hardened
- Steel grey

Delivery:
In plastic slide box



Tip size		TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40
Number of pieces in assortment/set		8
52146...	Ident. No.	200
		●

Prod. Gr. 590

ATORN® TX angled screwdriver set

For internal TORX® screws, extra-long version

Execution:
- Chrome-vanadium steel
- Hardened
- Steel grey

Delivery:
In plastic clip



Tip size		TX5 | TX6 | TX7 | TX8 | TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40 | TX50
Number of pieces in assortment/set		13
52146...	Ident. No.	300
		●

Prod. Gr. 590

ATORN® TX angled screwdriver set

For internal TORX® screws, with hole in the drive tip

Execution:
- Chrome-vanadium steel
- Hardened
- Steel grey

Delivery:
In plastic clip



Tip size		TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40
Number of pieces in assortment/set		8
52146...	Ident. No.	400
		●

Prod. Gr. 590

ATORN® Angled screwdriver

For internal TORX® screws, with ball head

Execution:
- Chrome-vanadium steel
- Hardened
- Steel grey



Tip size		TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
Limb length x limb length 2		67 x 19 mm	76 x 20 mm	86 x 20 mm	98 x 22 mm	100 x 22 mm	111 x 25 mm	125 x 30 mm	139 x 33 mm
52146...	Ident. No.	509	510	515	520	525	527	530	540
		●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® TX angled screwdriver set

For internal TORX ® screws, with ball head

Execution:
- Chrome-vanadium steel
- Hardened
- Steel grey

Delivery:
In plastic clip



Tip size		TX9 | TX10 | TX15 | TX20 | TX25 | TX27 | TX30 | TX40
Number of pieces in assortment/set		8
52146...	Ident. No.	500
		●

Prod. Gr. 590

ATORN® Screwdriver

For TORX® screws

Execution:
- Chrome-vanadium/molybdenum steel
- Continuously hardened
- Blackened tip
- 3-component power grip, with large soft area
- With hole in the drive tip (T10-40)

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working
- Better accuracy of fit with longer service life

Technical data:
- Surface: Chrome-plated



Ident. No. 906–920



Ident. No. 925–940

Tip size		TX6	TX7	TX8	TX9	TX10 + P	TX15 + P	TX20 + P	TX25 + P	TX27 + P	TX30 + P	TX40 + P
Blade length (mm)		60	60	60	60	80	80	100	100	115	115	130
Length (mm)		146	146	146	157	170	180	207	207	234	234	249
52144...	Ident. No.	906	907	908	909	910	915	920	925	927	930	940
		●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 590

Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ICON RIDGE

ATORN® TX screwdriver sets

For TORX® screws, with hole in the drive tip

Application:
For turning safety screws (centre pin in profile).

Execution:
- Chrome-vanadium/molybdenum steel
- Continuously hardened
- Matt chromium-plated
- Blackened tip
- 3-component power grip, with large soft area

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working
- Better accuracy of fit with longer service life

Technical data:
- Surface: Chrome-plated



Tip size		TX10 + P | TX15 + P | TX20 + P	TX6 | TX7 | TX8 | TX9 | TX10 + P	TX10 + P | TX15 + P | TX20 + P | TX25 + P | TX30 + P	TX8 | TX9 | TX10 + P | TX15 + P | TX20 + P | TX25 + P | TX30 + P
Number of pieces in assortment/ set		3	5	5	7
52144...	Ident. No.	900	901	902	904
		●	●	●	●

Prod. Gr. 590

ATORN® TX screwdriver with T-handle

with 2-component handle

Execution:
- easy-grip soft coating for optimum power transmission
- hard core for lasting blade/handle connection even under the highest loads
- blade made of CrV and CrMV (special alloy)
- optimum performance data up to 100% above the DIN values
- matt chrome-plated blade with black tip

Technical data:
- Surface: Chrome-plated



Tip size		TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30
Blade length (mm)		100	100	100	100	100	100	100	100
52147...	Ident. No.	208	209	210	215	220	225	227	230
		●	●	●	●	●	●	●	●

Tip size		TX40	TX45
Blade length (mm)		100	140
52147...	Ident. No.	240	245
		●	●

Prod. Gr. 590

ATORN® TX screwdriver set, with T-handle

with 2-component handle

Execution:
- easy-grip soft coating for optimum power transmission
- hard core for lasting blade/handle connection even under the highest loads
- blade made of CrV and CrMV (special alloy)
- optimum performance data up to 100% above the DIN values
- matt chrome-plated blade with black tip

Technical data:
- Tip size: TX10 | TX15 | TX20 | TX25 | TX30 | TX40
- Surface: Chrome-plated
- Number of pieces in assortment/set: 6



52147...	Ident. No.	300
		●

Prod. Gr. 590

ATORN® Screwdriver with ergonomically shaped T-handle

for internal TORX® screws

Execution:
- Straight
- Ergonomic T-handle
- Blade made of chrome-vanadium steel
- Hardened
- Black tip
- Hanging eyelet

Advantage:
- Ergonomically adjusted to your hand for fatigue-free working

Technical data:
- Surface: Chrome-plated



Tip size		TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40	TX45	TX50
Blade length (mm)		100	100	100	100	100	100	100	100	100	150	150
Length (mm)		125	125	125	125	132	132	132	132	132	189	189
52147...	Ident. No.	108	109	110	115	120	125	127	130	140	145	150
		●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® Screwdrivers

With flag handle, for TORX® screws

Execution:
- Blade made from molybdenum-vanadium steel
- Continuously hardened

Advantage:
- Improved resistance to corrosion thanks to burnishing process

Technical data:
- Surface: Burnished



Tip size		TX5	TX6	TX7	TX8	TX9	TX10	TX15	TX20
Blade length (mm)		19	19	19	19	24	24	28	28
52142...	Ident. No.	005	006	007	008	009	010	015	020
		●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® Screwdrivers

With flag handle, for TORX PLUS® screws

Execution:
- Blade made from molybdenum-vanadium steel
- Continuously hardened

Advantage:
- Improved resistance to corrosion thanks to burnishing process
- TX PLUS with reinforced profile cross-section for up to 25% higher transferable torques compared to standard TX

Technical data:
- Surface: Burnished



Tip size		TXP5	TXP6	TXP7	TXP8	TXP9	TXP10	TXP15	TXP20
Blade length (mm)		19	19	19	19	24	24	28	28
52142...	Ident. No.	105	106	107	108	109	110	115	120
		●	●	●	●	●	●	●	●

Prod. Gr. 590



ATORN® Slot head screwdriver ESD
Precision handle



Execution:
- Precision screwdriver with rotary cap
- 2-component handle technology with comfortable, non-slip soft coating
- "Black Tip" tip for precise fit
- Handle top with roll-off protection
- Blade produced from special chrome molybdenum vanadium alloy with optimal performance data up to 100% above DIN values

Width of cutting edge (mm)		2.5	3.0
Thickness of cutting edge (mm)		0.4	0.5
Blade length		60	60
Length		162	162
Material of the grip handle		2-component plastic	2-component plastic
52689...	Ident. No.	**025**	**030**
		●	●

Prod. Gr. 590

ATORN® ESD Phillips screwdriver
With precision handle



Execution:
- Precision screwdriver with rotary cap
- 2-component handle technology with comfortable, non-slip soft coating
- "Black Tip" tip for precise fit
- Handle top with roll-off protection
- Blade produced from special chrome molybdenum vanadium alloy with optimal performance data up to 100% above DIN values

Tip size		PH0	PH1
Blade length (mm)		60	75
Length (mm)		162	177
Material of the grip handle		2-component plastic	2-component plastic
52689...	Ident. No.	**110**	**120**
		●	●

Prod. Gr. 590

ATORN® ESD hexagonal socket screwdrivers
Precision handle



Execution:
- Precision screwdriver with rotary cap
- 2-component handle technology with comfortable, non-slip soft coating
- Blade produced from special chrome molybdenum vanadium alloy with optimal performance data up to 100% above DIN values
- Handle top with roll-off protection

Width across flats		1.5 mm	2 mm	2.5 mm	3 mm
Blade length (mm)		60	60	75	75
Length (mm)		162	162	177	177
52689...	Ident. No.	**215**	**220**	**225**	**230**
		●	●	●	●

Prod. Gr. 590

ATORN® Slotted screwdrivers with hexagonal blades (DIN 5264)



Execution:
- Chrome-vanadium/molybdenum steel blade
- Continuously hardened
- Matt chromium-plated
- Blackened tip
- Steel blue/black
- **Ident. No. 036–046: Without** hexagonal shoulder for wrenches
- **Ident. No. 056–121: With** hexagonal shoulder for wrenches

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working
- Better accuracy of fit with longer service life

Technical data:
- Material of the grip handle: 3-component plastic

Width of cutting edge (mm)		3.5	4.5	5.5	6.5	8.0	10.0	12.0
Thickness of cutting edge (mm)		0.6	0.8	1	1.2	1.2	1.6	2
Blade length (mm)		75	90	100	125	150	175	200
Length (mm)		186	197	209	245	269	297	320
52751...	Ident. No.	**036**	**046**	**056**	**066**	**081**	**101**	**121**
		●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® Screwdriver with hexagonal blade sets (DIN 5264)

Execution:
- Chrome-vanadium/molybdenum steel blade
- Continuously hardened
- Matt chromium-plated
- Blackened tip
- Steel blue/black
- With hexagonal shoulder for wrenches (from a width of 5.5 mm)

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working
- Better accuracy of fit with longer service life



Ident. No. 361

Composition of set		Supplied blade widths: 3.5 mm/4.5 mm/5.5 mm/6.5 mm/8 mm/10 mm	Supplied blade widths: 4.5 mm/5.5 mm/6.5 mm/8 mm	Supplied blade widths: 55 mm/6.5 mm/8 mm
Number of pieces in assortment/set		6	6	8
Tip size		-	PH1 | PH2	PH1 | PH2 | PH3 | PZ1 | PZ2
52751...	Ident. No.	**351**	**361**	**381**
		●	●	●

Prod. Gr. 590

ATORN® Phillips screwdriver with hexagonal blade (ISO 8764)
with PH and PZ drives

Execution:
- Chrome-vanadium/molybdenum steel blade
- Continuously hardened
- Matt chromium-plated
- Blackened tip
- Steel blue/black
- With hexagonal shoulder for wrenches

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working
- Better accuracy of fit with longer service life

Technical data:
- Material of the grip handle: 3-component plastic



Tip size		PH1	PH2	PH3	PZ1	PZ2	PZ3
Blade length (mm)		80	100	150	80	100	150
Length (mm)		187	219	269	187	219	269
52751...	Ident. No.	**501**	**502**	**503**	**601**	**602**	**603**
		●	●	●	●	●	●

Prod. Gr. 590

ATORN® Phillips screwdriver with hexagonal blade sets (ISO 8764)

Execution:
- Chrome-vanadium/molybdenum steel blade
- Continuously hardened
- Matt chromium-plated
- Blackened tip
- Steel blue/black
- With hexagonal shoulder for wrenches

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working
- Better accuracy of fit with longer service life



Ident. No. 700

Tip size		PH1 | PH2 | PH3	PZ1 | PZ2 | PZ3
52751...	Ident. No.	**700**	**710**
		●	●

Prod. Gr. 590

ATORN® Slotted screwdrivers with circular blade (DIN 5264)

Execution:
- Blade made of chrome-vanadium steel
- Continuously hardened

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working

Technical data:
- Material of the grip handle: 3-component plastic



Ident. No. 350–365

Width of cutting edge (mm)		2.5	3.0	3.5	4.0	4.5	5.0	5.5	5.5	6.0	6.5	8.0	10.0
Thickness of cutting edge (mm)		0.4	0.5	0.5	0.8	0.8	0.9	1	1	1.1	1.2	1.2	1.6
Blade length (mm)		75	80	100	100	100	100	125	200	150	150	175	200
Length (mm)		161	166	197	207	207	207	232	307	269	269	294	319
52752...	Ident. No.	**325**	**330**	**335**	**340**	**345**	**350**	**355**	**357**	**360**	**365**	**380**	**400**
		●	●	●	●	●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® Screwdriver with circular blade sets (DIN 5264)

Execution:
- Chrome-vanadium/molybdenum steel blade
- Continuously hardened
- 3-component power grip, with large soft area

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working



Ident. No. 411

Composition of set		Supplied blade widths: 3 mm/4 mm/5.5 mm/6.5 mm/8 mm/10 mm	Supplied blade widths: 4 mm/5.5 mm/6.5 mm/8 mm	Supplied blade widths: 4 mm/5.5 mm/6.5 mm/8 mm
Tip size		-	PH1 | PH2	PZ1 | PZ2
52752...	Ident. No.	410	411	412
		●	●	●

Prod. Gr. 590

ATORN® Phillips screwdrivers with circular blades (DIN 5264)
with PH and PZ drives

Execution:
- Blade made of chrome-vanadium steel
- Continuously hardened
- 3-component power grip, with large soft area

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working

Technical data:
- Material of the grip handle: 2-component plastic



Tip size		PH0	PH1	PH2	PH3	PZ0	PZ1	PZ2	PZ3
Blade length (mm)		60	80	100	150	60	80	100	150
Length (mm)		146	187	219	269	146	187	219	269
52752...	Ident. No.	500	501	502	503	600	601	602	603
		●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® Phillips screwdriver with circular blade sets (DIN 5264)

Execution:
- Blade made of chrome-vanadium steel
- Continuously hardened

Advantage:
- 3-component power grip with large soft area for comfortable use and fatigue-free working



Ident. No. 700

Tip size		PH1 | PH2 | PH3	PZ1 | PZ2 | PZ3
52752...	Ident. No.	700	710
		●	●

Prod. Gr. 590

ATORN® Slotted screwdriver with wooden handle

Execution:
- Blade made of chrome-vanadium steel
- Chrome-plated
- Wooden handle with leather cap
- Continuous blade with hexagonal shoulder
- Blackened tip

Technical data:
- Material of the grip handle: Wood



Width of cutting edge (mm)		3.5	4.5	5.5	7	9	10	12	14
Thickness of cutting edge (mm)		0.6	0.8	1.0	1.2	1.4	1.6	2.0	2.5
Blade length (mm)		75	90	100	125	150	175	200	250
Length (mm)		175	190	205	230	270	295	325	380
52730...	Ident. No.	510	520	530	540	550	560	570	580
		●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® Slotted and Phillips screwdriver sets
Wooden handle

Execution:
- Blade made of chrome-vanadium steel
- Chrome-plated
- Wooden handle with leather cap
- Continuous blade with hexagonal shoulder
- Blackened tip



Ident. No. 800

Composition of set		Supplied blade widths: 4.5 mm/55 mm/7 mm/9 mm	Supplied blade widths: 3.5 mm/4.5 mm/5.5 mm/7 mm/9 mm/10 mm/12 mm
Number of pieces in assortment/set		6	7
Tip size		PH1 | PH2	-
52730...	Ident. No.	800	810
		●	●

Prod. Gr. 590

ATORN® Phillips screwdriver with wooden handle (ISO 8764)
with PH drive

Execution:
- Blade made of chrome-vanadium steel
- Chrome-plated
- Wooden handle with leather cap
- Continuous blade with hexagonal shoulder
- Blackened tip

Technical data:
- Material of the grip handle: Wood



Tip size		PH1	PH2	PH3	PH4
Blade length (mm)		80	100	150	200
Length (mm)		180	205	270	330
52782...	Ident. No.	540	550	560	570
		●	●	●	●

Prod. Gr. 590

ATORN® Voltage tester screwdriver
For 150-250 V

Application:
Testing equipment for determining alternating voltages according to VDE 0680

Execution:
- Plastic-coated blade made from chrome-vanadium steel
- Ergonomically shaped, transparent handle with light tubes

Advantage:
- Ergonomic handle for comfortable handling
- With practical clip



Width of cutting edge (mm)		3
Thickness of cutting edge (mm)		0.8
Blade length (mm)		70
Length (mm)		143
Material of the grip handle		1-component plastic
52721...	Ident. No.	100
		●

Prod. Gr. 590

ATORN® VDE slotted screwdrivers (DIN 7437)
with slim blade

Application:
For working on live components

Execution:
- Protective insulation (to DIN EN 60900) sprayed directly onto the blade
- Slim design: Insulating layer in the front part flush with the output
- Multi-component handle provides for optimum power transmission
- Screw symbols on the handle cap
- Roll-off protection integrated in the handle

Technical data:
- Material of the grip handle: 3-component plastic

Width of cutting edge (mm)		3.5	4.0	5.5	6.5
Thickness of cutting edge (mm)		0.6	0.8	1.0	1.2
Blade length (mm)		100	100	125	125
Length (mm)		197	207	244	269
52725...	Ident. No.	335	340	355	365
		●	●	●	●

Prod. Gr. 590

ATORN® VDE Phillips screwdrivers (DIN 7438)
with slim blade/PH, PZ and PZS

Application:
For working on live components

Execution:
- Protective insulation (to DIN EN 60900) sprayed directly onto the blade
- Slim design: Insulating layer in the front part flush with the output
- Multi-component handle provides for optimum power transmission
- Screw symbols on the handle cap
- Roll-off protection integrated in the handle

Technical data:
- Material of the grip handle: 3-component plastic

Tip size		PH1	PH2	PZ1	PZ2	PZ1 + slot	PZ2 + slot
Blade length (mm)		80	100	80	100	80	100
Length (mm)		187	219	187	219	187	219
52725...	Ident. No.	401	402	411	412	421	422
		●	●	●	●	●	●

Prod. Gr. 590

ATORN® VDE screwdriver, TX
with slim blade

Application:
for working on live components

Execution:
- protective insulation as per DIN EN 60900 sprayed directly onto the blade
- slim design: insulating layer in the front part is flush with the output
- multi-component handle provides optimum power transmission
- screw symbols on the grip cap
- roll-away protection integrated in the handle

Technical data:
- Material of the grip handle: 3-component plastic

Tip size		TX15	TX20	TX25
Blade length (mm)		100	125	125
Length (mm)		207	244	244
52725...	Ident. No.	515	520	525
		●	●	●

Prod. Gr. 590

ATORN® VDE screwdriver set (DIN 7437)
with slim blade

Application:
For working on live components

Execution:
- Protective insulation (to DIN EN 60900) sprayed directly onto the blade
- Slim design: Insulating layer in the front part flush with the output
- Multi-component handle provides for optimum power transmission
- Screw symbols on the handle cap
- Roll-off protection integrated in the handle

Composition of set		Bade widths supplied: 3.5 mm/4 mm/5.5 mm/6.5 mm	Blade widths supplied: 3.5 mm/4 mm/5.5 mm/6.5 mm
Number of pieces in assortment/set		6	6
Tip size		PH1 | PH2	PZ1 | PZ2
52725...	Ident. No.	600	610
		●	●

Prod. Gr. 590

ATORN® VDE slotted screwdrivers (DIN 7437)

Application:
For working on live components.

Execution:
- Protective insulation according to DIN EN 60900
- Chrome-vanadium/molybdenum steel blade
- Hardened and burnished
- Blade insulation sprayed directly onto the blade
- 3-component power grip, red/yellow
- Individually tested

Advantage:
- Ergonomic handle for comfortable handling
- High degree of torque transmission

Technical data:
- Material of the grip handle: 3-component plastic



Ident. No. 066

Width of cutting edge (mm)		2.5	3	3.5	4	5.5	6.5	8	10
Thickness of cutting edge (mm)		0.4	0.5	0.6	0.8	1	1.2	1.2	1.6
Blade length (mm)		75	100	100	100	125	150	175	200
Length (mm)		161	186	197	207	244	269	294	319
52726...	Ident. No.	026	031	036	041	056	066	081	101
		●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® VDE slotted and Phillips screwdriver sets (DIN 7437)

Application:
For working on live components.

Execution:
- Protective insulation according to DIN EN 60900
- Chrome-vanadium/molybdenum steel blade
- Hardened and burnished
- Blade insulation sprayed directly onto the blade
- 3-component power grip, red/yellow
- Individually tested

Advantage:
- Ergonomic handle for comfortable handling
- High degree of torque transmission



Ident. No. 201

Composition of set		Supplied blade widths: 2.5 mm/3.5 mm/4 mm/5.5 mm	Supplied blade widths: 2.5 mm/3 mm/4 mm/5.5 mm/65 mm	Supplied blade widths: 2.5 mm/4 mm/5.5 mm/6.5 mm/8 mm
Number of pieces in assortment/set		6	7	5
Tip size		PH1 | PH2	PH1 | PH2	-
52726...	Ident. No.	**201**	**202**	**203**
		●	●	●

Prod. Gr. 590

ATORN® VDE Phillips screwdrivers (DIN 7438)

For PH and PZ

Application:
For working on live components.

Execution:
- Protective insulation according to DIN EN 60900
- Chrome-vanadium/molybdenum steel blade
- Hardened and burnished
- Blade insulation sprayed directly onto the blade
- 3-component power grip, red/yellow
- Individually tested

Advantage:
- Ergonomic handle for comfortable handling
- High degree of torque transmission

Technical data:
- Material of the grip handle: 3-component plastic



Ident. No. 302

Tip size		PH0	PH1	PH2	PH3	PZ0	PZ1	PZ2	PZ3
Blade length (mm)		60	80	100	150	60	80	100	150
Length (mm)		146	187	219	269	146	187	219	269
52786...	Ident. No.	**300**	**301**	**302**	**303**	**400**	**401**	**402**	**403**
		●	●	●	●	●	●	●	●

Prod. Gr. 590

ATORN® VDE Phillips screwdriver set (DIN 7438)

Application:
For working on live components.

Execution:
- Protective insulation according to DIN EN 60900
- Chrome-vanadium/molybdenum steel blade
- Hardened and burnished
- Blade insulation sprayed directly onto the blade
- 3-component power grip, red/yellow
- Individually tested

Advantage:
- Ergonomic handle for comfortable handling
- High degree of torque transmission



Ident. No. 310

Tip size		PH1 | PH2 | PH3	PZ1 | PZ2 | PZ3
52786...	Ident. No.	**310**	**410**
		●	●

Prod. Gr. 590

ATORN® Bit box
32 pieces, format C 6.3

Execution:
- High-strength plastic box with opening mechanism
- Cross-head bits with tough torsion zone
- Two-component handle with bit holder mount
- Bit holder for C and E 6.3 bits

Advantage:
- Torsion zone for reduced risk of the bits breaking under high stress
- Resistant to wear
- Special play-free clamping for optimum hold



Ident. No. 010



Ident. No. 020

Drive		1/4 inch	1/4 inch
Composition of set		Supplied slot lengths: 4.5 mm/5.5 mm/6.5 mm	-
Sockets with socket hexagon-head tip provided		4 mm | 5 mm | 6 mm	-
Blade length (mm)		25	25
Tip size		PH1 | PH2 | PH3 | PZ1 | PZ2 | PZ3 | TX10 | TX15 | TX20 | TX25 | TX30 | TX40	PH1 | PH2 | PH3 | PZ1 | PZ2 | PZ3 | TX10 | TX15 | TX20 | TX25 | TX30 | TX40
52841...	Ident. No.	010	020
		●	●

Prod. Gr. 590

ATORN® Bit box
32 and 61 pieces, type C 6.3

Execution:
- High-strength plastic box with opening mechanism
- Cross-head bits with tough torsion zone
- Bit holder for C and E 6.3 bits
- **Ident. No. 040:**
  - Bit ratchet with fine teeth
  - 1/4"-bit direct mount
  - Anti-clockwise/clockwise rotation using reversing lever

Advantage:
- Special play-free clamping for optimum hold
- **Ident. No. 030:**
  - Torsion zone for reduced risk of the bits breaking under high stress
  - Resistant to wear
- **Ident. No. 040:** Bit ratchet good at getting into difficult-to-reach areas



Ident. No. 030



Ident. No. 040

Drive		1/4 inch	1/4 inch
Composition of set		Supplied slot lengths: 4.5 mm/5.5 mm/6.5 mm	Supplied slot lengths: 4.5 mm/5.5 mm/6.5 mm
Sockets with socket hexagon-head tip provided		3 mm | 4 mm | 5 mm | 6 mm	4 mm | 5 mm | 6 mm
Blade length (mm)		25	25
Tip size		PH1 | PH2 | PH3 | PZ1 | PZ2 | PZ3 | TX10 | TX15 | TX20 | TX25 | TX30 | TX40	PH1 | PH2 | PH3 | PZ1 | PZ2 | PZ3 | TX10 | TX15 | TX20 | TX25 | TX30 | TX40
52841...	Ident. No.	030	040
		●	●

Prod. Gr. 590

ATORN® Bit box
17 pieces, format C 6.3

Execution:
- Box made from high-strength plastic
- Transparent cover with opening mechanism
- Quick-change holder with aluminium sleeve and magnet
- Quick-change bit holder for C and E 6.3 bits



Drive		1/4 inch	1/4 inch
Composition of set		Supplied slot lengths: 4.5 mm/6.5 mm	-
Sockets with socket hexagon-head tip provided		3 mm | 4 mm | 5 mm	-
Blade length (mm)		25	25
Tip size		PH1 | PH2 | PH3 | PZ1 | PZ2 | PZ3 | TX10 | TX15 | TX20 | TX25 | TX30	PH1 | PH2 | PH3 | PZ1 | PZ2 | PZ3 | TX10 | TX15 | TX20 | TX25 | TX30 | TX40
52841...	Ident. No.	100	110
		●	●

Prod. Gr. 590

ATORN® Bit holders

Execution:
- **Ident. No. 200:**
  - CentroFix bit holder with special clearance-free clamping for perfect concentricity
  - Type C and E 6.3
- **Ident. No. 210:** Quick-change bit holder for ¼" bits, type C 6.3
- **Ident. No. 220:** 2-component bit handle with hexagon blade 125 mm and magnetic ¼" bit holder
- **Ident. No. 225:** 2-component bit handle with circular blade and magnetic ¼-inch bit holder
- **Ident. No. 230:** 2-component handle for direct mounting of both ¼" bit holders

Technical data:
- Bit holder: 1/4 inch hexagon



Ident. No. 200



Ident. No. 210



Ident. No. 220



Ident. No. 225



Ident. No. 230

Blade length (mm)		-	-	125	100	-
Length (mm)		60	50	200	205	110
52841...	Ident. No.	**200**	**210**	**220**	**225**	**230**
		●	●	●	●	●

Prod. Gr. 590

ATORN® Magazine bit holder



Execution:
- Telescopic bit magazine equipped with 7 bits
- Bit holder with magnetic mount, 1/4"

Advantage:
- Seam-free, smooth cap for minimum friction
- Ergonomic easy-grip soft coating for optimum torques

Slot width (mm)		5.5
Tip size		PH1 | PH2 | PZ1 | PZ2
Blade length (mm)		112
Length (mm)		217
52853...	Ident. No.	**100**
		●

Prod. Gr. 590

ATORN® Hexagonal socket spanners



Ident. No. 100

Execution:
- With 2-component handle
- Hardened and brushed chromium-plated blade

Width across flats		4 mm	5 mm	5.5 mm	6 mm	7 mm	8 mm	9 mm	10 mm
Blade length (mm)		125	125	125	125	125	125	125	125
Length (mm)		217	217	217	217	217	217	217	217
Material of the grip handle		2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic
Surface		Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated
Material		Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel
52159...	Ident. No.	**040**	**050**	**055**	**060**	**070**	**080**	**090**	**100**
		●	●	●	●	●	●	●	●

Width across flats		11 mm	12 mm	13 mm
Blade length (mm)		125	125	125
Length (mm)		227	227	227
Material of the grip handle		2-component plastic	2-component plastic	2-component plastic
Surface		Chrome-plated	Chrome-plated	Chrome-plated
Material		Chrome-vanadium steel	Chrome-vanadium steel	Chrome-vanadium steel
52159...	Ident. No.	**110**	**120**	**130**
		●	●	●

Prod. Gr. 590

ATORN® Hexagonal socket wrench with T-handle
with 2-component handle

Execution:
- Comfortable non-slip soft coating provides for optimal power transmission
- Hard core for lasting blade/handle connection even under the highest loads
- Blade made of special CrV and CrMV alloy
- Optimal performance data up to 100% above DIN values
- Matt chrome-plated blade
- With hole for hanging



Ident. No. 410–444



Ident. No. 450–510

Width across flats		7 mm	8 mm	8 mm	8 mm	9 mm	9 mm	10 mm	10 mm
Blade length (mm)		125	125	230	350	125	230	125	230
Material of the grip handle		2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic
Surface		Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated
52167...	Ident. No.	410	420	422	424	430	432	440	442
		●	●	●	●	●	●	●	●

Width across flats		10 mm	11 mm	11 mm	12 mm	12 mm	13 mm	13 mm	13 mm
Blade length (mm)		350	125	230	125	230	125	230	350
Material of the grip handle		2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic
Surface		Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated
52167...	Ident. No.	444	450	452	460	462	470	472	474
		●	●	●	●	●	●	●	●

Width across flats		14 mm	15 mm	16 mm	17 mm
Blade length (mm)		125	125	125	125
Material of the grip handle		2-component plastic	2-component plastic	2-component plastic	2-component plastic
Surface		Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated
52167...	Ident. No.	480	490	500	510
		●	●	●	●

Prod. Gr. 590

ATORN® Construction and electrical MasterKey

Application:
Suitable for actuating locking systems in the areas of facilities engineering, gas and water supply systems and shut-off systems.

Execution:
- Made from die-cast zinc
- With reversible bit
- Bottle opener function

Technical data:
- Slot width: 7 mm

Tip size		PH2 | Two-way bit 3-5 mm | Square drive, 5 mm | Square drive, 6 mm | Square drive, 8 mm | Square drive, 9 mm	PH2 | Square drive, 5 mm | Square drive, 6 mm | Square drive, 8 mm | Square drive, 9 mm | Conical external square, 6-10 mm
Length x width		75 x 110 mm	75 x 135 mm
52188...	Ident. No.	010	020
		●	●

Prod. Gr. 534



Ident. No. 010



Ident. No. 020

ATORN® Torque screwdriver
For plug-in blades

Execution:
- precise and simple adjustment
- audible and haptic release when the set torque is reached
- ergonomically shaped handle for optimum force transmission
- robust aluminium sealing cap with easily readable adjustment scale

Delivery:
certificate, user manual and adjustment key





Min./max. torque measuring range		0.6-1.5 Nm	1.5-3.0 Nm	3.0-5.4 Nm
Scale value (nm)		0.1	0.1	0.1
Blade Ø		1/4	1/4	1/4
Handle length (mm)		105	105	105
Material of the grip handle		2-component plastic	2-component plastic	2-component plastic
Error limit (%) (%)		6	6	6
Calibration certificate		Yes	Yes	Yes
52200...	Ident. No.	011	021	031
		●	●	●

Prod. Gr. 5HC

ATORN® Torque screwdriver set
For plug-in blades

Execution:
- set of 2 torque screwdriver handles: 0.6 Nm to 1.5 Nm and 1.5 Nm to 3.0 Nm
- complete with adjustment tool, bit retention blade and 10 1/4" bits
- error limit: +/- 6%
- robust aluminium sealing cap with easily readable adjustment scale

Delivery:
with certificate and directions, in impact-resistant plastic box with foam insert



Min./max. torque measuring range		0.6-3.0 Nm
Scale value (nm)		0.1
Tip size		PH1 | PH2 | PZ1 | PZ2 | TX10 | TX15 | TX20 | TX25
Handle length (mm)		105
Material of the grip handle		2-component plastic
Width across flats		2.5 mm | 3 mm
Error limit (%) (%)		6
Calibration certificate		Yes
52200...	Ident. No.	061
		●

ATORN® Blades for slotted screws
For torque screwdrivers no. 52200 010-030

Execution:
- Blade diameter 1/4"

Technical data:
- Blade length: 170 mm
- Blade diameter: 1/4 in



Width of cutting edge (mm)		3.0	3.5	4.0
52200...	Ident. No.	230	235	240
		●	●	●

Prod. Gr. 5HC

Accessories for		52200 230	52200 235	52200 240
52200... torque screwdriver for 1/4" plug-in blades	Ident. No.	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●

ATORN® Blades for Phillips screws
For torque screwdrivers no. 52200 010-030

Application:
For PHILLIPS screws

Technical data:
- Blade length: 170 mm
- Blade diameter: 1/4 in



Execution:
- Blade diameter 1/4"

Tip size		PH0	PH1	PH2	PZ0	PZ1	PZ2
52200...	Ident. No.	300	301	302	310	311	312
		●	●	●	●	●	●

Prod. Gr. 5HC

Accessories for		52200 300	52200 301	52200 302	52200 310	52200 311	52200 312
52200... torque screwdriver for 1/4" plug-in blades	Ident. No.	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●

ATORN® Blades for hexagon socket screws

For torque screwdrivers no. 52200 010-030

Execution:
- Blade diameter 1/4”

Technical data:
- Blade length: 170 mm
- Blade diameter: 1/4 in



Width across flats		1.5 mm	2 mm	2.5 mm	3 mm	4 mm
52200...	Ident. No.	315	320	325	330	340
		●	●	●	●	●

Prod. Gr. 5HC

Accessories for		52200 315	52200 320	52200 325	52200 330	52200 340
52200... torque screwdriver for 1/4” plug-in blades	Ident. No.	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●

ATORN® Blades for TX and TX-Plus® screws

For torque screwdrivers no. 52200 010-030

Application:
Ident. No. 106–125: for TX screws
Ident. No. 206–225: for TX Plus screws.

Execution:
- Blade diameter 1/4”

Technical data:
- Blade length: 170 mm
- Blade diameter: 1/4 in



Tip size		TX6	TX7	TX8	TX9	TX10	TX15	TX20	TX25
52200...	Ident. No.	106	107	108	109	110	115	120	125
		●	●	●	●	●	●	●	●

Tip size		TXP6	TXP7	TXP8	TXP9	TXP10	TXP15	TXP20	TXP25
52200...	Ident. No.	206	207	208	209	210	215	220	225
		●	●	●	●	●	●	●	●

Prod. Gr. 5HC

Accessories for		52200 106	52200 107	52200 108	52200 109	52200 110	52200 115	52200 120
52200... torque screwdriver for 1/4” plug-in blades	Ident. No.	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●

Accessories for		52200 125	52200 206	52200 207	52200 208	52200 209	52200 210	52200 215
52200... torque screwdriver for 1/4” plug-in blades	Ident. No.	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●

Accessories for		52200 220	52200 225
52200... torque screwdriver for 1/4” plug-in blades	Ident. No.	011 ● 021 ● 031 ●	011 ● 021 ● 031 ●

ATORN® Bit holder

For torque screwdrivers no. 52200 010-030

Execution:
- Blade diameter 1/4”



Blade length (mm)		170
Blade Ø		1/4
52200...	Ident. No.	400
		●

Prod. Gr. 5HC

Accessories for		52200 400
52200... torque screwdriver for 1/4” plug-in blades	Ident. No.	011 ● 021 ● 031 ●

ATORN® Torque wrench with ratchet

With calibration certificate according to DIN EN ISO 6789

Execution:
- The torque is set by turning the handle
- With lever ratchet, suitable only for controlled clockwise tightening.
- Haptic and acoustic adjustment aid
- Audible and perceptible release when the set value is reached
- Dual scale with Nm and lbf.ft. display
- Ergonomically shaped handle with comfortable, textured surface
- Rapid securing and opening via the locking ring

Advantage:
- Robust tubular design
- Reversible ratchet with locking push button
- Viewing window protects scale from damage

Delivery:
Secure and safe transport/storage in handy cylindrical package

Technical data:
- With scale: Yes



Ident. No. 060

Tip size		1/4 inch	1/4 inch	3/8 inch	1/2 inch	1/2 inch	1/2 inch
Min./max. torque measuring range		1-6 Nm	2.5-25 Nm	10-60 Nm	20-120 Nm	40-200 Nm	60-320 Nm
Scale value (nm)		0.1	0.25	0.5	1	1	2
Length (mm)		234	274	355	456	551	621
Error limit (%) (%)		4	3	3	3	3	3
52240...	Ident. No.	**006**	**025**	**060**	**120**	**200**	**320**
		●	●	●	●	●	●

Prod. Gr. 5HC

ATORN® Torque wrench with square head

With calibration certificate in line with DIN EN ISO 6789

Execution:
- Adjustable torque wrench
- For holding square plug-in tools
- Haptic and acoustic adjustment aid
- Audible and perceptible release when the set value is reached
- Dual scale with Nm and lbf.ft. display
- Ergonomically shaped handle with comfortable, textured surface
- Rapid securing and opening via the locking ring

Advantage:
- Robust tubular design
- Plug-in square with locking push button
- Viewing window protects scale from damage

Technical data:
- Error limit (%): 3 %
- With scale: Yes



Ident. No. 120

Min./max. torque measuring range		2.5-25 Nm	10-60 Nm	20-120 Nm	40-200 Nm	60-320 Nm
Scale value (nm)		0.25	0.5	1	1	2
Insert shank square		9 x 12 mm	9 x 12 mm	14 x 18 mm	14 x 18 mm	14 x 18 mm
Length (mm)		258	312	393	488	558
52241...	Ident. No.	**025**	**060**	**120**	**200**	**320**
		●	●	●	●	●

Prod. Gr. 5HC

ATORN® Torque wrench

With break-over mechanism

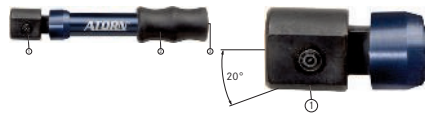
Application:
Suitable for clockwise and anti-clockwise tightening; when the pre-set torque value is reached, the wrench clearly and perceptibly releases and can be instantly used.

Execution:
- Lockable torque wrench without scale
- The torque is adjusted using a torque wrench tester
- Permanent adjustment can be performed in-house by us (if required, specify the Nm value when placing your order), or by the customer using a suitable tester

Advantage:
- The break-over release mechanism makes unintended overtightening unlikely

Delivery:
Incl. adjustment tool, test certificate according to DIN EN 6790

Technical data:
- Insert shank square: 9 x 12 mm
- Length: 105 mm
- Error limit (%): 6 %
- With scale: No



Min./max. torque measuring range		0.4-2 Nm	1-10 Nm
52243...	Ident. No.	**110**	**120**
		●	●

Prod. Gr. 5HC

ATORN® Torque wrench

Safety clutch

Application:
For controlled clockwise tightening; when the pre-set torque value is reached, the wrench releases and can be instantly used.

Execution:
- High-quality, single-armed torque wrench without scale
- High-alloy, stainless steel head
- Anodised aluminium shank
- **Ident. No. 010–220:**
  - The torque is adjusted using a torque wrench tester
  - Permanent adjustment can be performed in-house by us (if required, specify the Nm value when placing your order), or by the customer using a suitable tester
- **Ident. No. 310–320:**
  - Easy-to-read micrometre scale for making adjustments, can be secured against unintentional changes
  - With integrated ratchet function for controlled clockwise rotation

Advantage:
- The patented release system reliably prevents unwanted overtightening of the screw connection

Delivery:
Ident. No. 010–220: Incl. adjustment tool





Ident. No. 210–220



Ident. No. 310–320

Tip size		1/4 inch	3/8 inch	1/2 inch	1/4 inch	1/4 inch	1/4 inch	1/4 inch
Min./max. torque measuring range		3-25 Nm	15-55 Nm	40-125 Nm	1-5 Nm	2-10 Nm	1-5 Nm	2-10 Nm
Length (mm)		216	324	460	185	185	195	195
With scale		No	No	No	No	No	Yes	Yes
Error limit (%) (%)		4	4	4	6	6	6	6
52243...	Ident. No.	010	030	040	210	220	310	320
		●	●	●	●	●	●	●

Prod. Gr. 5HC



ATORN® Side cutter

Application:
For gripping, holding and cutting.

Execution:
- Serrated gripping surfaces, inductively hardened blades
- **Ident. No. 510–730:**
  - Special tool steel for hard and soft wire
  - Oil-hardened
- **Ident. No. 910–930:**
  - Tempered tool steel for hard and soft wire
  - VDE type according to DIN EN 60900

Advantage:
- **Ident. No. 710–730:** Safe, ergonomic and effortless work thanks to 2-component handles with slip guard
- **Ident. No. 910–930:** Safe, ergonomic and fatigue-free working thanks to two-component handles with hand guard

Technical data:
- Max. medium wire diameter cutting capacity: 1.6 mm



Ident. No. 510–530



Ident. No. 710–730



Ident. No. 910–930

Length (mm)		160	180	200	160	180	200	160	180
Surface		Bare	Bare	Bare	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated
VDE certified		No	No	No	No	No	No	Yes	Yes
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	2-component plastic	2-component plastic	2-component plastic	2-component plastic	2-component plastic
53232...	Ident. No.	510	520	530	710	720	730	910	920
		●	●	●	●	●	●	●	●

Length (mm)		200
Surface		Chrome-plated
VDE certified		Yes
Material of the grip handle		2-component plastic
53232...	Ident. No.	930
		●

Prod. Gr. 597

ATORN® Pliers sets
Workshop and VDE

Execution:
- **Ident. No. 805:**
  - Combination pliers 180 mm, 2-component handles, chrome-plated head
  - Side cutters, 160 mm, 2-component handles, chrome-plated head
  - Snipe nose pliers 160 mm, 2-component handles, chrome-plated head
  - Water pump pliers 250 mm, PVC-dipped handles, box joint, quick adjustment, polished surface
- **Ident. No. 805–965:** Serrated gripping surfaces, inductively hardened blades
- **Ident. No. 808:**
  - Combination pliers 200 mm, 2-component handles, chrome-plated head
  - Side cutters, 160 mm, 2-component handles, chrome-plated head
  - Snipe nose pliers, straight, 200 mm, 2-component handles, chrome-plated head
  - Snipe nose pliers, bent, 200 mm, 2-component handles, chrome-plated head
  - Heavy-duty side-cutters 180 mm, 2-component handles, chrome-plated head
  - Water pump pliers 250 mm, quick adjustment, 2-component handles, chrome-plated head
- **Ident. No. 965:**
  - VDE combination pliers, 180 mm, 2-component handles, chrome-plated head
  - VDE side-cutters, 160 mm, 2-component handles, chrome-plated head
  - VDE snipe nose pliers, straight, 200 mm, 2-component handles, chrome-plated head
  - VDE wire-stripping pliers, 160 mm, for 0.5 to 6 mm², 2-component handles, chrome-plated head
- **Ident. No. 970:**
  - serrated gripping surfaces, inductively hardened blades
  - VDE combination pliers, 180 mm, 2-component handles, chrome-plated head
  - VDE side-cutters, 160 mm, 2-component handles, chrome-plated head
  - VDE snipe nose pliers, straight, 160 mm, 2-component handles, chrome-plated head
  - VDE snipe nose pliers, curved, 160 mm, 2-component handles, chrome-plated head
  - VDE wire-stripping pliers, 160 mm, for 0.5 to 6 mm², 2-component handles, chrome-plated head

Delivery:
Ident. No. 805–965: In robust plastic case
Ident. No. 970: in robust plastic case



Ident. No. 805



Ident. No. 808



Ident. No. 965



Ident. No. 970

VDE certified		No	No	Yes	Yes
Number of pieces in assortment/set (PCS)		4	6	4	5
53232...	Ident. No.	805	808	965	970
		●	●	●	●

Prod. Gr. 597

ATORN® Heavy-duty side cutter

Application:
For gripping, holding and cutting.

Execution:
- For hard and soft and piano wire
- Serrated gripping surfaces
- Inductively hardened blades
- **Ident. No. 730:**
  - Tempered tool steel
  - VDE type according to DIN EN 60900

Advantage:
- 35% less force required when cutting piano wire

Technical data:
- Length: 200 mm
- Max. medium wire diameter cutting capacity: 2.2 mm



Ident. No. 520



Ident. No. 720



Ident. No. 730

Surface		Bare	Chrome-plated	Chrome-plated
VDE certified		No	No	Yes
Material of the grip handle		Polyvinyl chloride	2-component plastic	2-component plastic
53236...	Ident. No.	520	720	730
		●	●	●

Prod. Gr. 597

ATORN® Heavy-duty combination pliers

Optimised power joint

Application:
for gripping, holding and cutting.

Execution:
- power joint with up to 30% power saving
- secure retention of workpieces with 4-point involute burner hole
- special tool steel for hard and soft wire
- serrated gripping surfaces, inductively hardened blades
- **Ident. No. 010:** with opening spring for optimal handling (simple to disassemble)
- **Ident. No. 020:** VDE type according to DIN EN 60900

Advantage:
- safe, ergonomic and effortless work thanks to 2-component handles with slip guard

Technical data:
- Length: 180 mm
- Material of the grip handle: 2-component plastic
- Max. medium wire diameter cutting capacity: 3.5 mm



Ident. No. 010



Ident. No. 020

Surface		Chrome-plated	Chrome-plated
VDE certified		No	Yes
53232...	Ident. No.	010	020
		●	●

Prod. Gr. 597

ATORN® Flat nose pliers

Execution:
- Special tool steel, oil-hardened
- Short, flat jaws
- Serrated gripping surface
- Without blade

Advantage:
- **Ident. No. 720:** Safe, ergonomic and fatigue-free working thanks to two-component handles with hand guard

Technical data:
- Surface: Bare
- Version: Short



Ident. No. 510–520



Ident. No. 720

Length (mm)		140	160	160
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride	2-component plastic
53038...	Ident. No.	510	520	720
		●	●	●

Prod. Gr. 597

ATORN® VDE flat-nose pliers

Execution:
- Tempered tool steel
- Short, flat jaws
- Serrated gripping surface
- Without blade
- VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles



Length (mm)		160
Surface		Chrome-plated
VDE certified		Yes
Material of the grip handle		2-component plastic
Version		Short
53040...	Ident. No.	900
		●

Prod. Gr. 597

ATORN® Round-nose pliers (ISO 5745)

Application:
For bending grommets with different radii for wire-shaped materials.

Execution:
- Special tool steel, oil-hardened
- Short, round jaws
- For lugs with a diameter from 2.5 to 7.5 mm

Advantage:
- **Ident. No. 720:** Safe, ergonomic and fatigue-free working thanks to two-component handles with hand guard

Technical data:
- Version: Short



Ident. No. 510–520



Ident. No. 720

Length (mm)		140	160	160
Surface		Bare	Bare	Chrome-plated
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride	2-component plastic
53060...	Ident. No.	510	520	720
		●	●	●

Prod. Gr. 597

ATORN® VDE round pliers (ISO 5745)

Application:
For bending grommets with different radii for wire-shaped materials.

Execution:
- Tempered tool steel
- Short, round jaws
- For lugs with a diameter from 2.5 to 7.5 mm
- VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles



Length (mm)		160
Surface		Chrome-plated
VDE certified		Yes
Material of the grip handle		2-component plastic
Version		Short
53062...	Ident. No.	900
		●

Prod. Gr. 597

ATORN® Snipe nose pliers

Application:
For gripping, holding and cutting.

Execution:
- Serrated gripping surfaces
- Blades inductively hardened for hard and soft wire
- **Ident. No. 500–520, 710–720, 910–920:** Flat, round jaws, type A
- **Ident. No. 500–730:** Special tool steel, oil-hardened
- **Ident. No. 530, 730, 930:** Flat, round jaws, type B, 45°
- **Ident. No. 910–930:**
  - Tempered tool steel
  - VDE type according to DIN EN 60900

Advantage:
- **Ident. No. 710–930:** Safe, ergonomic and fatigue-free working thanks to two-component handles


Ident. No. 500–520


Ident. No. 530


Ident. No. 710, 720


Ident. No. 730


Ident. No. 910, 920


Ident. No. 930

Length (mm)	Surface	VDE certified	Material of the grip handle	Version Straight 53092... Ident. No.		Curved 53092... Ident. No.	
140	Bare	No	Polyvinyl chloride	500	●	-	-
160	Bare	No	Polyvinyl chloride	510	●	-	-
200	Bare	No	Polyvinyl chloride	520	●	530	●
160	Chrome-plated	No	2-component plastic	710	●	715	●
200	Chrome-plated	No	2-component plastic	720	●	730	●
160	Chrome-plated	Yes	2-component plastic	910	●	915	●
200	Chrome-plated	Yes	2-component plastic	920	●	930	●

Prod. Gr. 597

ATORN® Langbeck flat nose-pliers

Application:
For gripping and holding in confined areas.

Execution:
- Special tool steel, oil-hardened

- Long, slim, flat jaws
- Serrated gripping surfaces

Advantage:
- **Ident. No. 710:** Safe, ergonomic and fatigue-free working thanks to two-component handles


Ident. No. 500–510


Ident. No. 710

Length (mm)		140	160	160
Surface		Bare	Bare	Chrome-plated
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride	2-component plastic
53045...	Ident. No.	500	510	710
		●	●	●

Prod. Gr. 597

ATORN® VDE Langbeck flat nose-pliers

Application:
For gripping and holding in confined areas.

Execution:
- Tempered tool steel
- Long, slim, flat jaws

- Serrated gripping surfaces
- VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles



Length (mm)		160
Surface		Chrome-plated
VDE certified		Yes
Material of the grip handle		2-component plastic
53046...	Ident. No.	910
		●

Prod. Gr. 597

ATORN® Snipe nose pliers and spark-plug connector pliers, long version

Application:
Ident. No. 500–520: For gripping and holding in difficult-to-reach areas.
Ident. No. 540: For holding and loosening round, conical and angular objects.

Execution:
- Special tool steel, oil-hardened
- Pulling round materials and handling particularly delicate workpieces
- **Ident. No. 500:** Long, straight, flat, round jaws
- **Ident. No. 500–520:** Finely ribbed with special profile
- **Ident. No. 520:** Long, bent by 35°, flat, round jaws
- **Ident. No. 540:**
  - Long, bent by 90°, flat, round jaws
  - Fine-grooves with burner hole and special tip shape for 15-30-mm diameter

Advantage:
- The optimum position of the centre of rotation guarantees safe and controlled gripping
- **Ident. No. 540:** The hot engine block is not scorched thanks to the long design



Ident. No. 500



Ident. No. 520



Ident. No. 540

			Version	Straight		Curved		Curved gripping ring	
Length (mm)	Surface	Material of the grip handle		53054... Ident. No.		53054... Ident. No.		53054... Ident. No.	
280	Chrome-plated	Polyvinyl chloride		500	●	520	●	540	●

Prod. Gr. 597

ATORN® Long-nose round pliers

Long round jaws

Application:
For bending grommets with different radii for wire-shaped materials.

Execution:
- Special tool steel, oil-hardened
- Long, slim, round jaws
- For bending lugs from 2.5 to 7.5 mm in diameter

Advantage:
- **Ident. No. 710:** Safe, ergonomic and fatigue-free working thanks to two-component handles



Ident. No. 510



Ident. No. 710

Length (mm)		160	160
Surface		Bare	Chrome-plated
Material of the grip handle		Polyvinyl chloride	2-component plastic
Version		Long	Long
53066...	Ident. No.	510	710
		●	●

Prod. Gr. 597

ATORN® VDE Langbeck round-nose pliers

With long, round jaws

Application:
For bending grommets with different radii for wire-shaped materials.

Execution:
- Tempered tool steel
- Long, slim, round jaws
- For bending lugs from 2.5 to 7.5 mm in diameter
- VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles



Length (mm)		160
Surface		Chrome-plated
VDE certified		Yes
Material of the grip handle		2-component plastic
Version		Long
53067...	Ident. No.	900
		●

Prod. Gr. 597

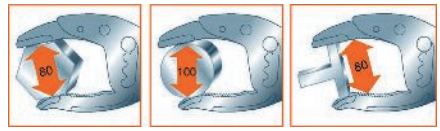
ATORN® Quick-adjustment locking pliers

Application:
For flexible clamping of round and flat material.

Execution:
- Chrome-vanadium alloy
- Jaw width 18 mm

Advantage:
- Optimum flexibility thanks to 4x opening quick-adjustment mechanism
- One-handed adjustment wheel integrated in the handle
- Ergonomic soft opening system





Length (mm)		250
Min./max. clamping width		0-100 mm
Surface		Chrome-plated
53419...	Ident. No.	**010**
		●

Prod. Gr. 597

ATORN® Water pump pliers with large gripping range

With box joint and double guide

Execution:
- 30% larger gripping area
- enhanced self-clamping with optimised jaw design
- fine adjustment graduations owing to quick-snap ratchet principle
- spring-driven sliding block ensures quicker engagement
- opposing toothing at the back of the jaws ensures aggressive gripping
- inductively hardened, serrated jaws



Ident. No. 025



Ident. No. 250

Length (mm)	Max. clamping width (mm)	Surface	Material of the grip handle	**53413...** Ident. No.	
180	42	Bare	Polyvinyl chloride	**018**	●
250	50	Bare	Polyvinyl chloride	**025**	●
300	70	Bare	Polyvinyl chloride	**030**	●
180	42	Chrome-plated	2-component plastic	**180**	●
250	50	Chrome-plated	2-component plastic	**250**	●

Prod. Gr. 597

ATORN® Water pump pliers (ISO 8976)

With groove joint

Application:
For gripping pipes, screws or other workpieces.

Execution:
- Chrome-vanadium steel
- Screwed grooved joint with pinch guard

Technical data:
- Surface: Bare
- Material of the grip handle: Polyvinyl chloride



Length (mm)		250	310
Max. clamping width (mm)		35	45
53415...	Ident. No.	**020**	**030**
		●	●

Prod. Gr. 597

ATORN® Water pump pliers (ISO 8976)
with box joint

Application:
For gripping pipes, screws or other workpieces.

Execution:
- Chrome-vanadium steel, high-quality tempering
- Perforated slip joint, extremely robust thanks to double guide
- Safety pinching guard to prevent crushing injuries
- Painted red
- Corrugated handles with yellow plastic coating

Advantage:
- Self-locking on workpiece, energy-saving and non-slip



Length (mm)		160	250	315
Max. clamping width (mm)		20	35	45
53416...	Ident. No.	490	500	510
		●	●	●

Prod. Gr. 595

ATORN® Water pump pliers
with box joint

Application:
For rapid gripping of pipes, screws or other workpieces.

Execution:
- Chrome-vanadium steel
- With perforated joint and pinch guard in all settings

Advantage:
- Self-clamping on pipes and nuts
- Precision adjustment using the pliers handle directly on workpiece, one-handed operation
- Optimum force distribution thanks to the flexible joint disc



Length (mm)		250
Max. clamping width (mm)		40
Surface		Bare
Material of the grip handle		Polyvinyl chloride
53417...	Ident. No.	110
		●

Prod. Gr. 597

ATORN® Water pump pliers
with box joint

Application:
For rapid gripping of pipes, screws or other workpieces.

Execution:
- Chrome-vanadium steel
- With perforated joint and pinch guard in all settings

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles
- Quick to make adjustments using the fine gradation with 13x notches
- Self-clamping with optimal jaw design



Length (mm)		250
Max. clamping width (mm)		40
Surface		Chrome-plated
Material of the grip handle		2-component plastic
53417...	Ident. No.	120
		●

Prod. Gr. 597

ATORN® Water pump pliers
with box joint

Application:
For rapid gripping of pipes, screws or other workpieces.

Execution:
- Chrome-vanadium steel
- With perforated joint and pinch guard in all settings
- Extra-hardened teeth

Advantage:
- Quick and secure adjustment via pushbutton
- Self-clamping on pipes and nuts



Length (mm)		250
Max. clamping width (mm)		40
Surface		Chrome-plated
Material of the grip handle		Polyvinyl chloride
53417...	Ident. No.	130
		●

Prod. Gr. 597

ATORN® VDE water-pump pliers
with box joint

Application:
For rapid gripping of pipes, screws or other workpieces.

Execution:
- Chrome-vanadium steel
- With perforated joint and pinch guard in all settings
- VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles
- Precision adjustment using the pliers handle directly on workpiece, one-handed operation



Length (mm)		250
Max. clamping width (mm)		40
Surface		Chrome-plated
Material of the grip handle		2-component plastic
VDE certified		Yes
53417...	Ident. No.	150
		●

Prod. Gr. 597

ATORN® Slip joint pliers

Execution:
- Chrome-vanadium steel, drop-forged
- Inductively hardened jaw
- With box joint and 13x notches

Advantage:
- Pinch guard provides added safety
- Self-clamping with optimised jaw design
- Non-slip and gentle to edges due to play-free frictional connection



Length (mm)		260
Width across flats		36 mm
Surface		Chrome-plated
Material of the grip handle		Polyvinyl chloride
53417...	Ident. No.	500
		●

Prod. Gr. 597

ATORN® Pipe wrench (DIN 5234)
Chrome-vanadium steel, Swedish type

Application:
For gripping pipes and pipe collars.

Execution:
- Chrome-vanadium steel, forged, tempered
- Swedish type, head angled by 90°
- Teeth also inductively hardened

Advantage:
- Teeth offset against direction of rotation
- Pinching guard
- Adjustment nut can be locked

Technical data:
- Surface: Cathodic dip painting
- Material of the grip handle: Steel



Size in inches		1	1.5	2
Length (mm)		310	425	540
Max. clamping width (mm)		49	68	94
53430...	Ident. No.	600	610	620
		●	●	●

Prod. Gr. 595

ATORN® Elbow pipe wrench (DIN 5234)
Chromium-vanadium steel, Swedish form

Application:
For gripping pipes and pipe collars.

Execution:
- Forged and tempered
- Swedish type, head angled by 45°
- Teeth also inductively hardened

Advantage:
- Teeth offset against direction of rotation
- Pinching guard
- Adjustment nut can be locked

Technical data:
- Surface: Cathodic dip painting
- Material of the grip handle: Steel



Size in inches		1	1.5	2
Length (mm)		320	445	565
Max. clamping width (mm)		55	81	94
53431...	Ident. No.	600	610	620
		●	●	●

Prod. Gr. 595

ATORN® Elbow pipe wrench (DIN 5234)

Swedish form



Application:
For gripping pipes and pipe collars.

Execution:
- Chrome-vanadium steel, forged, tempered
- Swedish type, S-shaped jaws
- Teeth also inductively hardened

Advantage:
- Teeth offset against direction of rotation
- Pinching guard
- Adjustment nut can be locked

Technical data:
- Surface: Cathodic dip painting
- Material of the grip handle: Steel

Size in inches		1	1.5	2
Length (mm)		320	440	560
Max. clamping width (mm)		55	68	85
53434...	Ident. No.	600	610	620
		●	●	●

Prod. Gr. 595

ATORN® Straight retaining ring pliers

For internal circlips



Application:
For mounting and removing inner retaining rings in drill holes.

Execution:
- Chrome-vanadium steel
- Polished joint
- Burnished tips
- Straight tips according to DIN 5256 C

Advantage:
- Hardened and wearproof tips securely hold the rings

Technical data:
- Head design: Straight
- Surface: Bare
- Material of the grip handle: Polyvinyl chloride

Type		J 0	J 1	J 2	J 3	J 4
Length (mm)		140	140	180	225	310
Suitable for min./max. Ø		8-13 mm	12-25 mm	19-60 mm	40-100 mm	85-140 mm
53136...	Ident. No.	500	510	520	530	540
		●	●	●	●	●

Prod. Gr. 597

ATORN® Circlip pliers, angled

for internal circlips



Application:
For mounting and removing inner retaining rings in drill holes.

Execution:
- Chrome-vanadium steel
- Polished joint
- Burnished tips
- Angled tips according to DIN 5256 D

Advantage:
- Hardened and wearproof tips securely hold the rings

Technical data:
- Head design: Angled 90°
- Surface: Bare
- Material of the grip handle: Polyvinyl chloride

Type		J 01	J 11	J 21	J 31	J 41
Length (mm)		140	140	180	225	310
Suitable for min./max. Ø		8-13 mm	12-25 mm	19-60 mm	40-100 mm	85-140 mm
53137...	Ident. No.	500	510	520	530	540
		●	●	●	●	●

Prod. Gr. 597

ATORN® Circlip pliers, straight

For external circlips



Application:
For mounting and removing outer retaining rings on shafts.

Execution:
- Chrome-vanadium steel
- Polished joint
- Burnished tips
- Straight tips according to DIN 5254 A

Advantage:
- Hardened and wearproof tips securely hold the rings

Technical data:
- Head design: Straight
- Surface: Bare
- Material of the grip handle: Polyvinyl chloride

Type		A 0	A 1	A 2	A 3	A 4
Length (mm)		140	140	180	225	310
Suitable for min./max. Ø		3-10 mm	10-25 mm	19-60 mm	40-100 mm	85-140 mm
53145...	Ident. No.	510	520	530	540	550
		●	●	●	●	●

Prod. Gr. 597

ATORN® Circlip pliers, angled

For external circlips

Application:
For mounting and removing outer retaining rings on shafts.

Execution:
- Chrome-vanadium steel
- Polished joint
- Burnished tips
- Angled tips according to DIN 5254 B

Advantage:
- Hardened and wearproof tips securely hold the rings

Technical data:
- Head design: Angled 90°
- Surface: Bare
- Material of the grip handle: Polyvinyl chloride



Type		A 01	A 11	A 21	A 31	A 41
Length (mm)		140	140	180	225	310
Suitable for min./max. Ø		3-10 mm	10-25 mm	19-60 mm	40-100 mm	85-140 mm
53148...	Ident. No.	510	520	530	540	550
		●	●	●	●	●

Prod. Gr. 597

ATORN® Retaining ring pliers sets

Application:
For mounting and removing inner and outer retaining rings.

Execution:
- Chrome-vanadium steel
- Polished joint
- Burnished tips

Advantage:
- Hardened and wearproof tips securely hold the rings

Delivery:
Ident. No. 010: In box with one of each: J 1, J 2, J 11, J 21, A 1, A 2, A 11, A 21
Ident. No. 020: In roll-up pouch, with 1x: J 2, J 21, A 2, A 21
Ident. No. 030: In roll-up pouch, with 1x: J 1, J 2, J 11, J 21, A 1, A 2, A 11, A 21

Technical data:
- Material of the grip handle: Polyvinyl chloride



Ident. No. 010



Ident. No. 020



Ident. No. 030

Number of pieces in assortment/set (PCS)		8	4	8
Container		Carton	Pocket package	Pocket package
53135...	Ident. No.	010	020	030
		●	●	●

Prod. Gr. 597

ATORN® Pincers (ISO 9243)

Application:
For removing nails or for pinching wire.

Execution:
- Special tool steel, oil-hardened
- Polished head

Technical data:
- Surface of the handle: Black atramentised



Length (mm)		160	180	200	250
53302...	Ident. No.	500	510	520	530
		●	●	●	●

Prod. Gr. 597

ATORN® Pincers (ISO 9243)

Application:
For driving in and removing nails or for pinching wire.

Execution:
- Special tool steel, oil-hardened
- Polished head

Advantage:
- With a striking area for driving in nails

Technical data:
- Material of the grip handle: Polyvinyl chloride



Length (mm)		180	200
53304...	Ident. No.	500	510
		●	●

Prod. Gr. 597

ATORN® Concrete or monier nipper (ISO 9242)

Application:
For twisting and pinching wire or for pulling out nails.

Execution:
- Special tool steel, oil-hardened
- Blackened pliers
- Polished head
- Permanently sharp, inductively hardened precision blades

Advantage:
- Optimum cutting performance with favourable lever ratio

Technical data:
- Material of the grip handle: Polyvinyl chloride



Length (mm)		220	250	280
53299...	Ident. No.	220	250	280
		●	●	●

Prod. Gr. 597

ATORN® Heavy-duty end-cutting nippers (ISO 5748)

Application:
For cutting and pinching off hard and soft piano wire.

Execution:
- Special tool steel, oil-hardened
- Inductively hardened blades
- **Ident. No. 510–520:**
  - Black atramentised pliers
  - Polished head
- **Ident. No. 710–720:** Chrome-plated pliers

Advantage:
- Flat joint and precise blades for energy-saving application
- **Ident. No. 710–720:** Safe, ergonomic and fatigue-free working thanks to two-component handles with hand guard



Ident. No. 510–520



Ident. No. 710–720

Length (mm)		160	200	160	200
Max. medium wire Ø cutting capacity (mm)		2.2	2.5	2.2	2.5
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride	2-component plastic	2-component plastic
53281...	Ident. No.	510	520	710	720
		●	●	●	●

Prod. Gr. 597

ATORN® Side cutters
Swedish form

Execution:
- Swedish design
- Special tool steel, oil-hardened
- Inductively hardened blades

Advantage:
- **Ident. No. 700–730:** Safe, ergonomic and fatigue-free working thanks to two-component handles



Ident. No. 400–530



Ident. No. 700–730

Length (mm)		130	145	165	180	130	145	165	180
Surface		Bare	Bare	Bare	Bare	Chrome-plated	Chrome-plated	Chrome-plated	Chrome-plated
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	2-component plastic	2-component plastic	2-component plastic	2-component plastic
53249...	Ident. No.	400	510	520	530	700	710	720	730
		●	●	●	●	●	●	●	●

Prod. Gr. 597

ATORN® VDE side cutters
Swedish design

Execution:
- Swedish design
- Tempered tool steel
- Inductively hardened blades
- VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles

Technical data:
- Surface: Chrome-plated
- VDE certified: Yes
- Material of the grip handle: 2-component plastic



Length (mm)		130	145	165	180
53250...	Ident. No.	900	910	920	930
		●	●	●	●

Prod. Gr. 597

ATORN® Heavy-duty side cutters
With optimised power joint

Application:
for easy cutting of wires and cables.

Execution:
- power joint with up to 20% power saving
- special tool steel, oil-hardened
- inductively hardened blades
- **Ident. No. 016–020:** with opening spring for optimal handling (simple to disassemble)
- **Ident. No. 160–200:** VDE type according to DIN EN 60900

Advantage:
- safe, ergonomic and effortless work thanks to 2-component handles
- excellent cutting performance with low force required thanks to optimal leverage
- for heavy-duty long-term use

Technical data:
- Surface: Chrome-plated
- Material of the grip handle: 2-component plastic



Ident. No. 018



Ident. No. 180

Length (mm)	VDE certified	Max. medium wire Ø cutting capacity (mm)	53256... Ident. No.	
160	No	3.5	016	●
180	No	3.8	018	●
200	No	4.2	020	●
160	Yes	3.5	160	●
180	Yes	3.8	180	●
200	Yes	4.2	200	●

Prod. Gr. 597

ATORN® Heavy-duty side cutters

Execution:
- Special tool steel, oil-hardened
- Inductively hardened blades

Advantage:
- Excellent cutting rate with low force required thanks to optimal lever transmission
- For heavy-duty long-term use

Technical data:
- Surface: Bare
- Material of the grip handle: Polyvinyl chloride



Length (mm)		160	180	200
53254...	Ident. No.	510	520	530
		●	●	●

Prod. Gr. 597

ATORN® Lever side cutters and lever end cutting nippers

Application:
For easy cutting of hard wires.

Execution:
- Special steel head, polished
- With opening spring

Advantage:
- Up to 40% less force required due to lever ratio
- One-handed operation with integrated spring and lock



Ident. No. 005



Ident. No. 010

Length (mm)		160	160
Surface		Bare	-
Max. medium wire Ø cutting capacity (mm)		2.2	2.4
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride
53096...	Ident. No.	005	010
		●	●

Prod. Gr. 597

ATORN® Heavy-duty cutters

Application:
for effortless cutting of wires

Execution:
- optimised arm position for easy gripping
- integrated heavy-duty rivets for maximum load capacity
- patented joint geometry ensures extremely easy and power-saving cutting of even hard wires
- with opening spring and lock

Technical data:
- Length: 210 mm
- Max. piano wire diameter cutting capacity: 3.6 mm
- Max. soft wire diameter cutting capacity: 5.2 mm
- Surface: Lacquered
- Head design: Angled 20°



Ident. No. 300



Material of the grip handle		Polyvinyl chloride	2-component plastic
53096...	Ident. No.	300	310
		●	●

Prod. Gr. 597

ATORN® Cable shears

Application:
For cutting single and multi-conductor copper and aluminium cables.

Execution:
- Hardened, precision-ground blades
- Polished head
- Narrow, riveted joint
- Not suitable for steel wire and hard-drawn copper wire

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles

Technical data:
- Material of the grip handle: 2-component plastic



Length (mm)		160	210
Max. medium wire Ø cutting capacity (mm)		10	12
53093...	Ident. No.	310	320
		●	●

Prod. Gr. 597

ATORN® VDE cable cutters

Application:
For cutting single and multi-conductor copper and aluminium cables.

Execution:
- Chrome-plated pliers
- Fine blade for smooth and easy cuts
- Ground, bolted precision joint, adjustable
- Not suitable for steel wire and hard-drawn copper wire
- VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles
- One-handed operation with integrated spring and lock
- Angled head relieves strain on the wrist and provides an optimum view

Technical data:
- VDE certified: Yes
- Material of the grip handle: 2-component plastic



Length (mm)		180	220
Max. medium wire Ø cutting capacity (mm)		18	25
53093...	Ident. No.	**410**	**420**
		●	●

Prod. Gr. 597

ATORN® Wire rope cutters

Application:
For cutting finely stranded cords, hard wires and cables.

Execution:
- Extra-strong shearing blade
- Ground, bolted precision joint, adjustable
- **Ident. No. 050:** Steel pipe arms with ergonomic plastic handles

Advantage:
- **Ident. No. 019:**
  - Angled head for improved view of the working area
  - One-handed operation with integrated spring and lock
  - Safe, ergonomic and fatigue-free working thanks to two-component handles

Technical data:
- Surface: Bare



Ident. No. 019



Ident. No. 050

Length (mm)		190	500
Max. medium wire Ø cutting capacity (mm)		7	12
Material of the grip handle		2-component plastic	Polyvinyl chloride
53300...	Ident. No.	**019**	**050**
		●	●

Prod. Gr. 597

ATORN® Precision electronic side cutters ESD

Execution:
- glossy polished steel surface: proven and reliable finish.
- no risk to circuitry or components due to chrome flaking off
- ESD-compatible 2-component handles with wide and non-slip contact surface
- inductively hardened blades facilitate easy and sharp cutting with maximum service life
- inserted double leaf springs and wear-resistance guarantee uniform action
- box joint design for optimal maintenance-free guidance of jaws -
- silky-smooth action, long service life, blade overlap prevented.

Technical data:
- Surface: Bare
- Material of the grip handle: 2-component plastic



Ident. No. 010



Ident. No. 030

Length (mm)		120	125	125	125	140	125	125
Max. soft wire Ø cutting capacity		1.5	1.5	1.5	1.5	2.0	1.5	1.5
Head design		Pointed head | With small grind	Oval | With grind	Oval | With grind and wire clamp	Pointed head | Mini bevel	Oval | With grind	Pointed head | With grind	Pointed head | No grind
53028...	Ident. No.	**010**	**020**	**030**	**040**	**050**	**060**	**070**
		●	●	●	●	●	●	●

Prod. Gr. 597

ATORN® ESD precision electronics angled and pointed cutters

Execution:
- Glossy polished steel surface: proven and reliable finish.
- no risk to circuitry or components due to flaking off of chrome
- ESD-compatible 2-component handles with wide and non-slip contact surface
- inductively hardened blades facilitate easy and sharp cutting with maximum service life
- double leaf springs inserted and wear-resistant guarantee uniform action
- Box joint design for optimal maintenance-free guidance of jaws – silky-smooth action and long service life, overlapping of blades avoided.
- **Ident. No. 080:** angle cutting pliers ideal for horizontal and vertical application
- **Ident. No. 090:** tail angle cutting pliers with slender jaws

Technical data:
- Surface: Bare
- Material of the grip handle: 2-component plastic



Ident. No. 080



Ident. No. 090

Length (mm)		120	130
Max. soft wire Ø cutting capacity		1.2	0.8
Head design		Straight | With small grind	Pointed head | With small grind
53028...	Ident. No.	080	090
		●	●

Prod. Gr. 597

ATORN® ESD precision electronics long-nose, flat and round-nose cutters

Execution:
- glossy polished steel surface: proven and reliable finish.
- no risk to circuitry or components due to chrome flaking off
- ESD-compatible 2-component handles with wide and non-slip contact surface
- box joint design for optimal maintenance-free guidance of jaws -
- silky-smooth action and long service life.
- inserted double leaf springs and wear-resistance guarantee uniform action
- **Ident. No. 100:** pointed pliers with straight, short and smooth jaws
- **Ident. No. 110:** pointed pliers with curved, short and smooth jaws
- **Ident. No. 120:** flat nose pliers with short and smooth jaws
- **Ident. No. 130:** round-nose pliers with short and smooth jaws
- **Ident. No. 140:** pointed pliers with long, straight jaws with cut

Technical data:
- Surface: Bare
- Material of the grip handle: 2-component plastic



Ident. No. 100



Ident. No. 110



Ident. No. 120–130



Ident. No. 140

Length (mm)		130	130	130	130	155
Jaw design		Flat, round | Smooth	Flat, pointed | Smooth	Flat, wide | Smooth	Round | Smooth	Flat, pointed | Fine grooves
53028...	Ident. No.	100	110	120	130	140
		●	●	●	●	●

Prod. Gr. 597

ATORN® Electronics gripping pliers

Application:
Ident. No. 010, 030–040: For highly precise assembly tasks in electronics and precision mechanics fields.
Ident. No. 020: For bending grommets with different radii for wire-shaped materials.

Execution:
- C-45 steel, 44-48 HRC arm hardness

Advantage:
- Anti-glare, phosphatised surface enables safe working
- With low-friction double-opening spring and two-component handles for fatigue-free, ergonomic working

Technical data:
- Length: 125 mm
- Surface: Phosphated
- Material of the grip handle: 2-component plastic



Ident. No. 010



Ident. No. 020



Ident. No. 030



Ident. No. 040

Head design		Flat	Round	Pointed head	Pointed head | Straight
53027...	Ident. No.	010	020	030	040
		●	●	●	●

Prod. Gr. 597

ATORN® Electronics cutters

Execution:
- C-60 steel, blade hardness from 63-65 HRC
- Inductively hardened blades
- Largest cuttable diameter (copper): 0.2-2 mm
- **Ident. No. 140:** taper tap with straight blade, without bevel

Advantage:
- Anti-glare, phosphatised surface enables safe working
- With low-friction double-opening spring and two-component handles for fatigue-free, ergonomic working

Technical data:
- Length: 112 mm
- Surface: Phosphated
- Material of the grip handle: 2-component plastic



Ident. No. 100



Ident. No. 110



Ident. No. 120



Ident. No. 130

Max. soft wire Ø cutting capacity (mm)		1.3	1.3	1.3	1.3	1.5
Head design		With grind	With grind and wire clamp	No grind	Wire clamp	No grind
53027...	Ident. No.	100	110	120	130	140
		●	●	●	●	●

Prod. Gr. 597

ATORN® Electronics pliers and cutter set
In textile bag

Application:
For cutting, holding and gripping.

Execution:
- C-45/C-60 steel
- Consisting of: Flat-nose pliers, round-nose pliers, pointed pliers (straight and bent), side-cutters with and without bevel

Advantage:
- Anti-glare, phosphatised surface enables safe working
- With low-friction double-opening spring and two-component handles for fatigue-free, ergonomic working

Delivery:
Set in zipped case



Number of pieces in assortment/set		6
Surface		Phosphated
Material		Tool steel
53027...	Ident. No.	300
		●

Prod. Gr. 597

ATORN® Wire stripping pliers
With spiral spring

Execution:
- With coiled opening spring
- With adjusting screw and locking nut
- **Ident. No. 650:** Special tool steel, oil-hardened
- **Ident. No. 700:**
  - Tool steel, tempered
  - VDE type according to DIN EN 60900

Advantage:
- Safe, ergonomic and fatigue-free working thanks to two-component handles with hand guard



Ident. No. 650



Ident. No. 700

Length (mm)		160	160
Min./max. stripper size		0.5-6 mm²	0.5-6 mm²
VDE certified		No	Yes
Surface		Chrome-plated	Chrome-plated
Material of the grip handle		2-component plastic	2-component plastic
53572...	Ident. No.	**650**	**700**
		●	●

Prod. Gr. 597

ATORN® Work knives and electrician's knives

Application:
Ident. No. 010: For universal cutting of a wide range of materials.
Ident. No. 020: For cutting and stripping PVC cables.

Execution:
- Non-slip

- **Ident. No. 010:**
  - Rustproof blade with serrated edge
  - Blue plastic grips
  - Blade is locked via pushbutton
  - Blade stopper
- **Ident. No. 020:**
  - Rustproof blade with two stripping notches
  - Red plastic grips
  - Blade with lock



Ident. No. 010



Ident. No. 020

Length (mm)		190	191
53603...	Ident. No.	**010**	**020**
		●	●

Prod. Gr. 582

ATORN® Automatic wire stripping pliers

Application:
For automatic stripping of conductors with PVC insulation.

Execution:
- With cable cutter and length stop
- With three-stage insulation thickness setting

Advantage:
- The blades automatically adjust to the conductor cross-section



Length (mm)		200
Min./max. stripper size		0.08-6 mm²
Material of the grip handle		Plastic
53585...	Ident. No.	**010**
		●

Prod. Gr. 597

ATORN® Pliers for wire end ferrules

Execution:
- Polished head

Advantage:
- Marked semi-circular sections for reliable connection between sheath and conductor
- **Ident. No. 003–004:** Safe, ergonomic and fatigue-free working thanks to two-component handles



Ident. No. 002



Ident. No. 004

Length (mm)		145	180	145	180
Suitable for min./max. Ø		0.25-2.5 mm	0.25-16 mm	0.25-2.5 mm	0.25-16 mm
Material of the grip handle		Polyvinyl chloride	Polyvinyl chloride	2-component plastic	2-component plastic
53145...	Ident. No.	**001**	**002**	**003**	**004**
		●	●	●	●

Prod. Gr. 597

ATORN® Wire end ferrule assortment

Execution:
- With wire end ferrule pliers, 0.5-4 mm²
- With voltage tester
- 100x wire end ferrules 0.5/0.75/1.5/2.5 mm2 and 50x 4 mm2



53125...	Ident. No.	**010**
		●

Prod. Gr. 597

ATORN® Crimping tools

Application:
Ident. No. 010–020: For crimping wire end ferrules with and without insulation.
Ident. No. 100: for crimping insulated cable lugs and connectors

Execution:
- Lever system with unlockable force stop function
- Adjustable crimping pressure
- **Ident. No. 010–020:** Trapezoidal crimping

Advantage:
- Ergonomically shaped plastic handles for fatigue-free working

Technical data:
- Material of the grip handle: Plastic



Length (mm)		205	205	245
Suitable for min./max. Ø		0.5-6 mm	6-16 mm	1.0-6 mm
53508...	Ident. No.	**010**	**020**	**100**
		●	●	●

Prod. Gr. 597

ATORN® 3-C machinist's hammers

Application:
For vibration-free striking that is gentle on joints.

Execution:
- Ergonomic and non-slip application
- Forged protective handle collar and additional protective handle sleeve
- DIN 1041 hammer head, C45 steel, electric-inductively hardened

Advantage:
- With indestructible three-component handle (aluminium core, polyamide and rubber component)

Technical data:
- Material of the handle: Three-component plastic
- Handle fastening: Glued
- Protective handle sleeve available: Yes



Weight of head (kg)		0.3	0.5	1	1.5	2
Length (mm)		300	320	360	360	400
51180...	Ident. No.	**030**	**050**	**100**	**150**	**200**
		●	●	●	●	●

Prod. Gr. 520

ATORN® Machinist's hammers (DIN 1041)

German type

Execution:
- Ergonomic Hickory wooden handle DIN 5111, extremely rigid
- Extended hammer head eye with additional plastic protective handle sheath
- DIN 1041 hammer head, C45 steel, forged, hardened, annealed
- Polished working surface

Advantage:
- Head and handle are connected via a safety ring wedge

Technical data:
- Material of the handle: Hickory
- Handle fastening: Splined
- Protective handle sleeve available: Yes



Weight of head (kg)		0.2	0.3	0.4	0.5	0.6	0.8	1	1.5	2
Length (mm)		280	300	310	320	330	350	360	380	400
51188...	Ident. No.	510	520	530	540	550	560	570	580	590
		●	●	●	●	●	●	●	●	●

Prod. Gr. 520

ATORN® Soft-face hammers

Application:
For controlled position impacts on workpieces in machine vices or during assembly tasks.

Execution:
- High-quality die-cast zinc base
- With impact protection on the handle
- Blue cellulose acetate inserts

Advantage:
- Replaceable individual parts

Technical data:
- Recoil-free: No
- Material of the handle: Ash
- Impact insert, interchangeable: Yes
- Handle fastening: Pinned



Head Ø (mm)		25	30	40	50
Length of head (mm)		86	95	107	115
Length (mm)		270	280	325	340
51206...	Ident. No.	025	030	040	050
		●	●	●	●

Prod. Gr. 520

	Accessories for		Ident. No.	51206 025	51206 030	51206 040
51206...	Spare impact insert		Ident. No.	125 ●	130 ●	140 ●
51206...	Spare ash hammer handle		Ident. No.	525 ●	525 ●	540 ●

	Accessories for		Ident. No.	51206 050
51206...	Spare impact insert		Ident. No.	150 ●
51206...	Spare ash hammer handle		Ident. No.	540 ●

ATORN® Soft-face hammers

recoilless

Application:
Powerful impact action on metal while being gentle on muscles and joints thanks to lack of recoil.

Execution:
- Impact heads made from shatterproof polyurethane, replaceable
- Powder-coated precision steel tube handle

Advantage:
- Ergonomically designed rubber handle
- Hammer body filled with cast iron shot for recoil-free working

Technical data:
- Recoil-free: Yes
- Material of the handle: Steel
- Impact insert, interchangeable: Yes
- Handle fastening: Welded



Head Ø (mm)		30	40	50
Length of head (mm)		116	126	136
Length (mm)		351	376	386
Weight (kg)		0.46	0.58	0.76
51208...	Ident. No.	300	400	500
		●	●	●

Prod. Gr. 520

	Accessories for		Ident. No.	51208 300	51208 400	51208 500
51208...	Spare inserts		Ident. No.	330 ●	440 ●	550 ●

ATORN® Cemented carbide scriber

With replaceable cemented carbide needle and attachment clip

Execution:
- Can be ground and replaced
- Retractable pencil system
- **No. 51330:**
- Shatterproof plastic housing
- Non-slip grip zone
- **No. 51331:**
- Nickel-plated metal housing with attachment clip
- Knurled handle



No. 51330



No. 51331

Length (mm)		150	146
Ø of needle (mm)		2	2
51330...	Ident. No.	500 ●	-
51331...	Ident. No.	-	500 ●

Prod. Gr. 523

ATORN® HSS bimetal bow saw spare blades

Flexible, high-performance saw blade serrated on one side

Application:
For universal sawing tasks including on rustproof sheet steel.

Execution:
- Elastic blade body made from tool steel
- Long service life and excellent heat resistance

Advantage:
- Completely shatterproof
- Particularly high cutting capacity owing to optimally hardened HSS teeth area

Technical data:
- Saw blade length: 300 mm



Number of teeth per inch		18	24	32
51648...	Ident. No.	590 ●	600 ●	610 ●

Prod. Gr. 596

ATORN® Aluminium hacksaw

Execution:
- Die-cast aluminium
- Weighs only 650 g
- Captive pins hold the blade

Advantage:
- Soft, ergonomic rubber handles ensure fatigue-free working
- Quick-action clamping in grip



Suitable for sawblade length (mm)		300
51849...	Ident. No.	020 ●

Prod. Gr. 528

ATORN® Metal saw bow

Execution:
- Bow made from strong rectangular tube, chrome-plated
- Aluminium grip, blue, powder-coated

Advantage:
- Blade can be adjusted eight ways
- Quick-action clamping in grip



Suitable for sawblade length (mm)		300
51848...	Ident. No.	020 ●

Prod. Gr. 528

ATORN® Knives with snap-off blades

Execution:
- **Ident. No. 010:** With pushbutton mechanism and auto-lock mechanism
- **Ident. No. 020:** locking wheel

Advantage:
- Extremely robust and smooth-running thanks to stainless steel blade guide
- Ergonomically shaped full-metal housing



Ident. No. 010



Ident. No. 020

Length (mm)		150	157
Width of knife blade (mm)		9	18
53640...	Ident. No.	010	020
	Price/unit, €	●	●

Prod. Gr. 582

ATORN® Folding knives with blades

Execution:
- For all standard trapezoidal blades
- With steel belt clip

Advantage:
- Ergonomically shaped aluminium handle
- Reliable locking of blade when folded out
- Padded thumb area for highly precise cutting pressure
- Quick-action lever ensures quick changeover of blades without tools
- Blade compartment integrated in the handle with 5 spare blades



Length (mm)		160
Width of knife blade (mm)		18.7
53644...	Ident. No.	200
		●

Prod. Gr. 597

ATORN® Profiled fine scraper

Execution:
- 3-edged hollow-section scraper
- Special tool steel blade
- Entire handle is made from extremely impact-resistant, tough plastic
- With protective cap for the cutters



Blade length (mm)		25
Width of knife blade (mm)		8
Material of the grip handle		Plastic
53695...	Ident. No.	500
		●

Prod. Gr. 596

ATORN® Triangular solid scrapers

Execution:
- Special tool steel
- Enamelled

Technical data:
- Material of the grip handle: Wood



Triangular solid scraper

Blade length (mm)		150	200
Width of knife blade (mm)		10	14
53706...	Ident. No.	510	520
		●	●

Prod. Gr. 596

ATORN® Flat scrapers

Execution:
- Special tool steel
- Enamelled

Technical data:
- Material of the grip handle: Wood



Flat scraper

Blade length (mm)		100	150	200
Width of knife blade (mm)		18	20	20
53710...	Ident. No.	500	510	520
		●	●	●

Prod. Gr. 596

ATORN® Safety tin snips
Leverage transmission

Application:
For safe cutting of steel and plastic strapping.

Execution:
- **Ident. No. 200:** Comfortable handle sleeves with anti-slip protection
- **Ident. No. 510:**
  - Special tool steel cutting head, forged, inductively hardened
  - With plastic handles

Advantage:
- **Ident. No. 200:** Hold-down clamp prevents the packaging strap from springing up and causing a hazard
- **Ident. No. 510:** Solid hold-down clamp prevents the packaging strap from springing up and causing a hazard



Ident. No. 200



Ident. No. 510

Length (mm)		250	600
Knife insert length (mm)		25	50
Max. material thickness for steel (mm)		0.5	1.2
53751...	Ident. No.	200	510
		●	●

Prod. Gr. 597

ATORN® Leather wad punch (DIN 7200)

Drop-forged in special steel

Application:
For punching holes in a range of materials.

Execution:
- Special steel, drop-forged
- Conical relief
- Ground and polished pipes
- Blue enamel paint



Ø (mm)	2	3	4	5	6	7	8	9
Length (mm)	105	105	105	110	110	120	120	120
53815... Ident. No.	502	503	504	505	506	507	508	509
	●	●	●	●	●	●	●	●
Ø (mm)	10	11	12	13	14	15	16	17
Length (mm)	120	130	130	140	140	140	140	145
53815... Ident. No.	510	511	512	513	514	515	516	517
	●	●	●	●	●	●	●	●
Ø (mm)	18	19	20	21	22	23	24	25
Length (mm)	145	145	160	160	170	170	170	170
53815... Ident. No.	518	519	520	521	522	523	524	525
	●	●	●	●	●	●	●	●
Ø (mm)	26	27	28	29	30	31	32	33
Length (mm)	170	175	175	175	190	190	190	193
53815... Ident. No.	526	527	528	529	530	531	532	533
	●	●	●	●	●	●	●	●
Ø (mm)	34	35	36	37	38	39	40	42
Length (mm)	195	195	200	205	205	205	205	220
53815... Ident. No.	534	535	536	537	538	539	540	542
	●	●	●	●	●	●	●	●
Ø (mm)	44	46	48	50	55	60		
Length (mm)	220	220	230	230	240	260		
53815... Ident. No.	544	546	548	551	555	560		
	●	●	●	●	●	●		

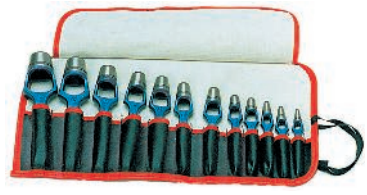
Prod. Gr. 596

ATORN® Set of leather wad punches (DIN 7200)

Diameter 3-20 mm

Application:
For punching holes in a range of materials.

Execution:
- Special steel, drop-forged
- Conical relief
- Ground and polished pipes
- Blue enamel paint
- Set in plastic roll-up pouch



Composition of set	Supplied diameters: 3/6/8/10/16/20 mm	Supplied diameters: 3/6/8/10/12/16/20/25 mm	Supplied diameters: 3/5/6/8/10/12/13/14/16/19/22/25 mm
Number of pieces in assortment/set	6	8	12
53815... Ident. No.	800	810	820
	●	●	●

Prod. Gr. 596

ATORN® HSS bimetal hole saws

Made of HSS bi-metal

Application:
Ident. No. 014–152: For sawing circular holes in unalloyed steel (up to 700 N/mm²), non-ferrous metals, light metals, plastics, plaster, fibre and plywood boards, light-weight building boards and general wood processing.
Ident. No. 160–201: For sawing circular holes in wood and wood-substitute materials.

Execution:
- High degree of concentricity
- Solid base plate with improved stability
- Cutting depth maximum 38 mm
- Drill bit can be replaced with other commercially available mounts
- Excludes mounting shank and drill bit; please order separately!
- In individual packages, with information regarding cutting values

Advantage:
- Lateral slots in the body help to remove cut parts
- More even cut, reduced vibration and heat generation and less force required thanks to variable teeth spacing with 4/6 teeth per inch



Ident. No. 014–105, 111–152
Without drive arbor



Ident. No. 108, 160–201
Without drive arbor



Ø (mm)		14	16	17	19	20	21	22	24
53841...	Ident. No.	014 ●	016 ●	017 ●	019 ●	020 ●	021 ●	022 ●	024 ●
Ø (mm)		25	27	29	30	32	33	35	37
53841...	Ident. No.	025 ●	027 ●	029 ●	030 ●	032 ●	033 ●	035 ●	037 ●
Ø (mm)		38	40	41	43	44	46	48	51
53841...	Ident. No.	038 ●	040 ●	041 ●	043 ●	044 ●	046 ●	048 ●	051 ●
Ø (mm)		52	54	57	59	60	64	65	67
53841...	Ident. No.	052 ●	054 ●	057 ●	059 ●	060 ●	064 ●	065 ●	067 ●
Ø (mm)		68	70	73	74	76	79	83	86
53841...	Ident. No.	068 ●	070 ●	073 ●	074 ●	076 ●	079 ●	083 ●	086 ●
Ø (mm)		89	92	95	98	102	105	108	111
53841...	Ident. No.	089 ●	092 ●	095 ●	098 ●	102 ●	105 ●	108 ●	111 ●
Ø (mm)		114	121	127	140	152	160	168	177
53841...	Ident. No.	114 ●	121 ●	127 ●	140 ●	152 ●	160 ●	168 ●	177 ●

Ø (mm)		210
53841...	Ident. No.	201 ●

Prod. Gr. 528

ATORN® Accessories

For HSS bimetal hole saws

Application:
Ident. No. 230: As mounting shank for keyhole saws from 14-30 mm in diameter
Ident. No. 250: As mounting shank for keyhole saws from 32-210 mm in diameter
Ident. No. 270: As spare centring drill for keyhole saw mounting shanks
Ident. No. 280: For extending the hexagon mounting shanks of keyhole saws
Ident. No. 330: To eject the centre after cutting

Execution:
- **Ident. No. 210–250:** Includes centring drill
- **Ident. No. 230, 250:** Please note that the striking mechanism must be switched off when SDS is used!
- **Ident. No. 270:** HSS centring drill, 6.35 mm



Ident. No. 210, 240



Ident. No. 230, 250



Ident. No. 270



Ident. No. 280

Suitable for min./max. Ø			14-30 mm	32-210 mm	14-210 mm
53841...	Mounting shank with 9.5-mm hexagon drive	Ident. No.	210 ●	-	-
53841...	Mounting shank with 11.1-mm hexagon drive	Ident. No.	-	240 ●	-
53841...	Mounting shank with SDS drive	Ident. No.	230 ●	250 ●	-
53841...	Spare centring drill, 6.35 mm	Ident. No.	-	-	270 ●
53841...	300-mm extension for 9.5 and 11.1-mm hexagon mounting shank	Ident. No.	-	-	280 ●
53841...	Ejector spring	Ident. No.	-	-	330 ●

Prod. Gr. 528

ATORN® Hole saw sets

Application:
For sawing circular holes in unalloyed steel (up to 700 N/mm²), non-ferrous metals, light metals, plastics, plaster, fibre and plywood boards, light-weight building boards and general wood processing.

Execution:
- HSS bi-metal
- Two mounting shanks with hexagon drive
- Includes spare centring drill
- Stored in robust tool case

Advantage:
- Lateral slots in the body help to remove cut parts
- More even cut, reduced vibration and heat generation and less force required thanks to variable teeth spacing with 4/6 teeth per inch



Ident. No. 005



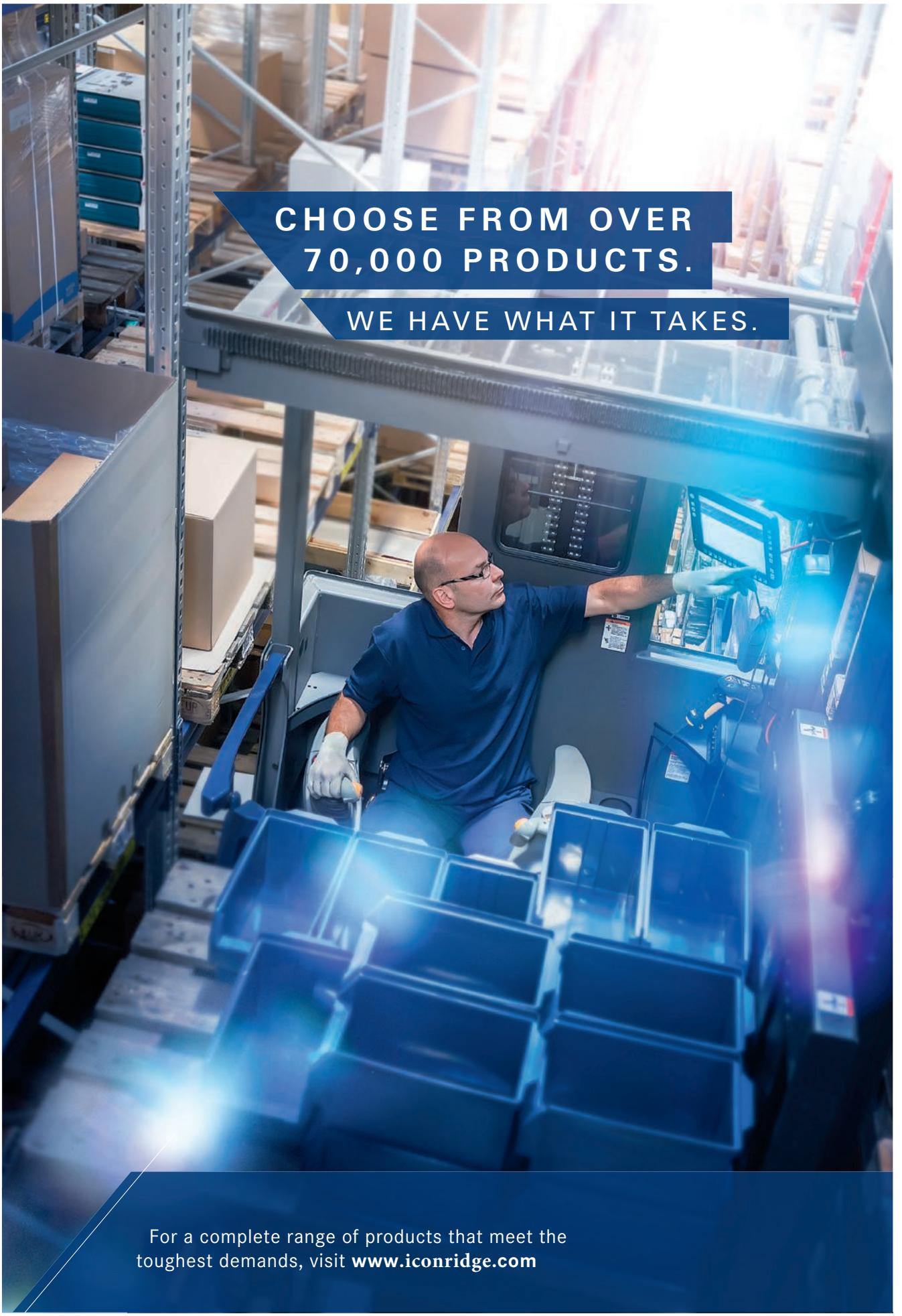
Ident. No. 006



Ident. No. 008

Composition of set		Supplied diameters: 22/29/35/44/51/64/68 mm	Supplied diameters: 16/19/22/29/35/44/52/57/67 mm	supplied diameters: 16/19/22/25/29/32/35/38/44/51/64/76 mm
53841...	Ident. No.	005	006	008
		●	●	●

Prod. Gr. 528



Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

ATORN® LED professional workshop lamp
battery operated

Execution:
- robust, splash-proof housing with rubberised gripping surface
- 2 folding hooks that can be rotated by 360°
- 2 holding magnets on the back, 1 magnet on the bottom
- switch functions: 1. front auxiliary light, 2. 100% main light, 3. 50% main light, 4. off
- lamp base can be rotated by 180° and locked in eight positions
- with battery status and remaining charge indicator
- 3.7-V/2600-mAh Li-ion battery, charged via a 5-V Micro USB socket
- effective lighting duration of 6 hours, charging time of 4 hours








Length (mm)		266
Luminous flux (lm)		440
Length x width x height		266 x 48 x 32 mm
IP protection class		IP 54
56829...	Ident. No.	**025** ●

Prod. Gr. 597

ATORN® LED professional folding lamp
battery operated

Execution:
- robust, splash-proof plastic housing with rubberised gripping surface
- belt clip on the bottom with retractable hook that can be rotated by 360°
- holding magnet on the bottom
- switch functions: 1. 100% main light, 2. 50% main light, 3. off
- flexible joint can be rotated by 340° and locked in 12 positions
- with battery status indicator
- 3.7-V/1550-mAh Li-ion battery, charged via a 5-V Micro USB socket
- effective lighting duration of 10 hours, charging time 4.5 hours

Technical data:
- Length: 131 mm
- Luminous flux: 220 lm
- Length x width x height: 131 x 66 x 28 mm
- IP protection class: IP 54






56829...	Ident. No.	**035** ●

Prod. Gr. 597

ATORN® LED machine and workstation lamp

Voltage 230 V/AC/50 Hz

Execution:
- Voltage 230 V, 50 Hz
- Lamp head and base made from impact-resistant, non-flammable plastic
- Anodised aluminium star-shaped heat dissipator and lens holder
- Switch integrated in the lamp head
- colour temperature 4000 K
- Enormous light output and long LED service life
- 1.6-m connection cable

Advantage:
- Infinitely adjustable focus for spot or wide beam

Delivery:
With extra-strong magnetic clamp and screw clamp with star-shaped grip





Power rating (W)		3
Arm length (mm)		590
IP protection class		IP 40
56870...	Ident. No.	**010**
		●

Prod. Gr. 597

ATORN® High-performance LED hand lamps

batteries or rechargeable batteries

Execution:
- **Ident. No. 005:** Rubberised push-button switch at the lamp end
- **Ident. No. 005–007:**
  - Light beam can be focused with infinite adjustment by moving the lamp head
  - Sturdy aluminium lamp, steel retaining clip
- **Ident. No. 007:**
  - Push button at the lamp end, with simultaneous strong magnetic function
  - 3 switchable light modes
  - The micro-USB charging input is protected by a sliding cover
  - Small LED at the side to indicate the charging status
- **Ident. No. 010:**
  - high-performance Cree LED 5 W
  - Light beam can be focused using one hand
  - Waterproof and dust-proof, protection class IP 66
  - 4 light levels

Delivery:
Ident. No. 005: Including 2 x AAA batteries
Ident. No. 007: Includes battery and USB charging cable
Ident. No. 010: Lamp, 230-V charger, 12/24-V adapter, fabric belt pouch, operating instructions



Ident. No. 005



Ident. No. 007



Ident. No. 010

Length (mm)		140	126	157
Luminous flux (lm)		100	110	230
Lighting range (m)		30	80	150
Material		Aluminium	Aluminium	Aluminium
Colour		Black | Blue	Black | Blue	Blue
Type of rechargeable battery/battery		Alkali	Li-Ion	Li-Ion
Number of rechargeable batteries/batteries		2	-	-
Rechargeable battery/battery designation		1.5 V Micro AAA	-	-
56801...	Ident. No.	**005**	**007**	**010**
		●	●	●

Prod. Gr. 597

ATORN® Head lights

batteries or rechargeable batteries

Execution:

- **Ident. No. 300:**
  - Rubberised push switch at the lamp head
  - 2 switchable light modes, battery compartment in the lamp head
  - Textile headband and additional interchangeable rubber headband for the helmet insert
  - Housing made of robust ABS plastic
- **Ident. No. 310:**
  - Robust aluminium housing, push switch on the lamp head
  - 4 light modes (high, medium, low, strobe)
  - Battery on the back of the head placed in a robust ABS housing with additional red signal lamp
  - Textile headband, adjustable for optimum comfort
  - With battery status display via LEDs and overload protection
  - 3.7 V rechargeable battery with 2600 Ah

Delivery:
Ident. No. 300: Incl. 3 x AAA batteries and 2 head bands
Ident. No. 310: incl. USB charging cable



Ident. No. 300



Ident. No. 310

Luminous flux (lm)		100	350
Lighting range (m)		50	80
Type of rechargeable battery/battery		Alkali	Li-Ion
Number of rechargeable batteries/batteries		3	-
Rechargeable battery/ battery designation		1.5 V Micro AAA	-
56808...	Ident. No.	300	310
		●	●

Prod. Gr. 597

ATORN® LED inspection lamps

batteries or rechargeable batteries

Execution:

- **Ident. No. 205:**
  - Light chip with 120 lumen light output
  - Lateral holding magnet, rubberised push switch
  - Rotatable push-on clip
- **Ident. No. 215:**
  - Light chip with 150 lumens light output, additional LED at the head end
  - Retaining magnet on a rotatable retaining clip at the side
  - Rechargeable 3.7 V Li.Ion battery with USB contact
  - Charge level display

Delivery:
Ident. No. 205: Incl. Including 3 x AAA batteries
Ident. No. 215: incl. battery and USB charging cable



Ident. No. 205



Ident. No. 215

Light source		LED	LED
Length (mm)		160	185
Luminous flux (lm)		120	150
Number of rechargeable batteries/batteries		3	1
Rechargeable battery/ battery designation		1.5 V Micro AAA	3.7 V lithium ion battery
56808...	Ident. No.	205	215
		●	●

Prod. Gr. 597



ATORN® Tool cases and wheeled cases

suitable for air transport, made of ABS plastic, black

Application:
Ident. No. 110: For practical transport of tools

Execution:
- **Ident. No. 020:**
  - Made of ABS plastic, black
  - With solid aluminium frame
  - Castors
  - Ratchet hinge
  - Anti-tilt cylinder locks
  - Tool trays made from Con-Pearl, with 25 pockets
  - 400-mm keep-safe compartment
  - Cover flap with 15 pockets and keep-safe compartment
  - Base tray with cover panel, can be divided as required
- **Ident. No. 110:**
  - Made of ABS plastic
  - Black
  - 4x telescopic drawer, 1050 mm in length
  - Tool panel with 25 pockets and 400-mm keep-safe compartment
  - Cover flap with 15 pockets and 400-mm keep-safe compartment
  - Inner tray can be partitioned as required

Advantage:
- **Ident. No. 110:** Extremely stable and easy to pull/slide thanks to large rollers with large wheelbase

Delivery:
contains no tools



Ident. No. 020
(Contents not included)



Ident. No. 110
(Contents not included)

Internal length x internal width x internal height		470 x 180 x 360 mm	470 x 190 x 360 mm
Material		ABS	ABS
Capable of flying		Yes	Yes
55464...	Ident. No.	**020**	**110**
		●	●

Prod. Gr. 538

ATORN® Mobile wheeled tool case

suitable for air transport,made of ABS plastic

Application:
for practical tool transportation

Execution:
- made from ABS with user-friendly telescopic handle and 2 inline rollers
- robust aluminium frame with impact edge protection protects the tools and the case
- 2 toggle locks and Icode combination lock for security
- robust, comfortable carrying handle
- 4 additional feet prevent the shell from being scratched and improve stability
- hinged cover and security lid holder with catch
- document compartment in A4 format
- detachable tool panel with 23 tool compartments on front and rear
- removable cover panel with 15 tool compartments
- variable base shell (2 aluminium dividers, 4 end caps, 2 middle caps)

Advantage:
- Good handling, massive capacity, modern design









Internal length x internal width x internal height		485 x 375 x 200 mm
Load-carrying capacity (kg)		30
Volume (l)		36
Material		ABS
Capable of flying		Yes
Weight (kg)		6.6
55465...	Ident. No.	**150**
		●

Prod. Gr. 538

ATORN® Leather tool bag with VDE tool assortment, 17 pieces

Execution:
- Robust, lockable leather tool case
- VDE tools according to DIN EN 60900
- Pliers with two-component handle and chrome-plated head
- Screwdriver with protective insulation and ergonomic two-component handle

Advantage:
- Produced to the highest standard of quality and tested individually

Technical data:
- VDE certified: Yes



52560... | Ident. No. 300

Prod. Gr. 582

Hard tool case with tool assortment, 48 pieces

60-piece

Execution:
- Highly impact-resistant ABS plastic
- With solid aluminium frame
- With castors and ratchet hinges
- Lockable anti-tilt cylinder locks
- equipped with high-quality and robust ATORN, ORION and branded tools

Advantage:
- For heavy-duty use

Delivery:

1	folding wooden rule, 2 m
1	aluminium spirit level, 400 mm
1	tape measure, 3 m
12	combination wrenches, size 6/7/8/9/10/11/12/13/14/17/19/22 mm
3	slotted screwdrivers 4.5 x 90/5.5 x 100/6.5 x 125 mm
2	cross-head screwdrivers PH 1/PH 2
4	VDE slotted screwdrivers 2.5 x 75/4 x 100/5.5 x 125/6.5 x 150 mm
2	VDE cross-head screwdrivers PH 1/PH 2
1	voltage tester 3 x 65 mm
1	pair of automatic wire strippers
1	safety knife
1	pair of tweezers, 110 mm
1	pair of multi-purpose shears
1	pair of side-cutters, 165 mm
1	pair of flat-nose round pliers, 160 mm
1	pair of water pump pliers, 240 mm
2	machinist's hammers, 200/500 g
1	pair of combi pliers, 180 mm
1	plastic hammer 32 mm
1	reamer, 100 mm
1	scriber
1	flat chisel, 175 mm
1	set, 6 pcs, (5 drift punches 2-6 mm/1 centre punch)
3	workshop files with grip, 150 mm, C2: flat/round/half-round
8	hex. screwdriver, 2-10 mm
1	metal saw bow with blade, 300 mm
1	screw clamp, 200 mm



52560... | Ident. No. 500

Prod. Gr. 580

ATORN® Hard tool case with tool assortment, 48 pieces

48-piece

Execution:
- Highly impact-resistant ABS plastic
- With solid aluminium frame
- With castors
- Ratchet hinges
- Lockable anti-tilt cylinder locks
- Equipped with high-quality and robust ATORN tools

Advantage:
- For heavy-duty use

Delivery:
9 combination wrenches, size 8/9/10/11/13/14/15/17/19 mm, 2 Phillips screwdrivers PH 1 x 80 mm, PH 2 x 100 mm, 1 hexagon socket wrench insert, long, with ball head size 1.5 to 10, 1 TX wrench set with ball head TX 9 to 40, 3 slotted screwdrivers 4.5 x 90 mm/6.5 x 125 mm/8.0 x 150 mm, 1 machinist's hammer, 500 g, 1 pair of combination pliers, 180 mm, 1 pair of snipe nose pliers, 1 pair of side cutters, 165 mm, 1 pair of water pump pliers, 250 mm, 1 aluminium handsaw bow, 300 mm, 10 saw blades for metal, 1 folding rule, 2 m



52560... | Ident. No. 600

Prod. Gr. 582

ATORN® Roller tool case with 38-piece tool assortment

Execution:
- Highly impact-resistant ABS plastic
- With solid aluminium frame
- With castors and ratchet hinges
- Lockable anti-tilt cylinder locks
- Equipped with high-quality and robust ATORN tools

Delivery:
1 wheeled case 470 x 190 x 360 mm, 1 combination spanner 9 pcs 8–19 mm, 1 hexagonal socket screwdriver 9 piece, 1 TX screwdriver flap holder, 8 piece, 1 screwdriver 4.5 x 90 mm, 1 screwdriver 6.5 x 125 mm, 1 screwdriver 8.0 x 150 mm, 1 screwdriver PH 1 x 80 mm, 1 screwdriver PH 2 x 100 mm, 1 3C machinist's hammer 0.3 kg, 1 combination pliers 180 mm, 2-component handle, 1 pair of snipe nose pliers 200 mm, bent, 2-component handle, 1 pair of water pump pliers 250 mm, chrome plated, 1 pair of side cutters 165 mm, 2-component handle, 1 soft-face hammer, recoil-free, 30 mm, 1 utility knife with 18-mm snap-off blade



52560... | Ident. No. 700

Prod. Gr. 582

ATORN® Tool case with 50-piece tool assortment

Application:
Tool case equipped with wide range of tools, with hard foam inlay – all tools are neatly laid out and held securely.

Execution:
- Robust and durable tools in industrial quality
- Screwdriver, pliers and reversible ratchet with two-component handles with perfect ergonomic functionality
- case external dimensions: H 440 x W 505 x D 130 mm

Advantage:
- Case features sandwich frame construction that affords the case a large carrying capacity
- Fasteners closed with your knees firmly press the case together and give it excellent stability
- Softtouch grip; provides support and comfort when being worn
- Easy to open the case on both sides; tools are held securely in foam and cannot fall out
- Partition panel in the centre of the case also provides optimum protection for tools

Delivery:

1	DIN 3113 A combination wrench set, chrome-plated 8 pcs, size 8-19 mm
1	½" hexagon socket wrench inserts, in size 10 to 24 mm
1	½" hexagon spark plug insert, w. rubber insert wrench 20.8
1	½" reversible ratchet, with quick-release button 255 mm
1	½" handle with slide piece and cardan joint, 70 mm
1	½" extension, 125 mm and 250 mm
1	hexagon ball end L-key set, 9 pcs, long, size 1.5-10 mm
1	workshop screwdriver, slotted 0.8 x 4.5/1.0 x 5.5/1.2 x 6.5 mm,
1	circular blade
1	cross-head screwdriver, PH 1 x 80 and PH 2 x 100 mm
1	machinist's hammer, DIN 1041 with nylon protective handle sleeve, 300 g
1	pair of water pump pliers, 250 mm
1	pair of combination pliers, 180 mm
1	pair of side-cutters, 160 mm
1	VDE single-pin voltage tester, 150–250 volt
1	pocket measuring tape, end hook with magnet, 5 metres
1	pair of flat-nose round pliers, 200 mm
1	universal knife, w. 18-mm snap-off blade
1	LED pen light, incl. battery
1	universal voltage tester, 6–24 volt



52560... | Ident. No. 800

Prod. Gr. 582

ATORN® Tool assortment
For electricians, 18-piece

Delivery:

1	VDE screwdriver, 6 pcs, slotted/PH
1	voltage tester screwdriver
1	control cabinet key
1	pair of VDE combi pliers 180 mm
1	pair of VDE snipe-nose pliers, 200 mm, curved
1	pair of VDE side-cutters, 160 mm
1	pair of automatic wire strippers
1	electrician's knife
1	pair of wire end ferrule pliers, 0.25-16 mm²
1	BENNING DUTEST continuity tester
1	LED pen light with batteries
1	ERSA Multitip soldering iron C 25
1	solder, 250 g



52561... | Ident. No. 030

Prod. Gr. 597

Cabinets



HK drawer cabinets, system 550

Workbenches



Combination workbenches

Installation



Tool trolleys



Tool assortments

Warehouses + factories



Storage shelves

ATORN® Hard foam inserts, equipped with high-quality ATORN tools

Width 293 mm, depth 587 mm, for HK drawer cabinets, system 700 S

Application:
For flexible and modular equipping of drawers from the HK drawer cabinet system 700 S and 700 B.

Execution:
- Two-tone polyethylene (PE) foam inserts equipped with tool assortments
- Closed-cell foam is resistant to most oils and chemicals
- The PE foam is lightweight, resistant, durable, odour-neutral and even food safe
- One tool insert fills half of the usable area of drawers with internal dimensions 600 x 600 mm
- Two tool inserts fill the entire usable area of drawers with internal dimensions 600 x 600 mm
- Three tool inserts fill the entire usable area of drawers with internal dimensions 900 x 600 mm

Advantage:
- Clearly arranged, organised and protected storage of tools in the drawers
- Accurately fitting cut-outs in contrasting blue make it easy to spot when tools are missing and help to prevent loss of tools
- Expensive tools can be stored securely and safely in the insert

Technical data:
- Depth: 587 mm
- Width: 293 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue


Ident. No. 700

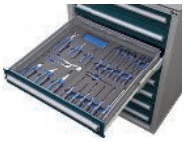

Ident. No. 701


Ident. No. 702


Ident. No. 703


Ident. No. 704


Ident. No. 705



Composition of set	Suitable for drawer	50537... Ident. No.	
1 each of ATORN combination spanner sizes 6/7/8/9/10/11/12/13/14/15/16/17/18/19/20/21/22/24/27/30 mm	90 mm	700	●
1 each of ATORN slotted screwdriver 5.5 x 100/6.5 x 125/8.0 x 150 mm, 1 each of ATORN Phillips screwdriver PH 1/PH 2/PZ 1/PZ 2, 1 each of ATORN screwdriver T 6/T 7/T 8/T 9/T 10/T 15/T 20/T 25/T 27/T 30	60 mm	701	●
1 each of ATORN slotted screwdriver VDE 2.5 x 75/3.5 x 100/4 x 100/5.5 x 125, 1 each of ATORN Phillips screwdriver VDE PH 0/PH 1/PH 2/PZ 0/PZ 1/PZ 2, ATORN wire-stripping tool, WIHA voltage tester	60 mm	702	●
1 each of ATORN round-nose pliers 160 mm, ATORN tripe pliers 160 mm, ATORN side cutters 165 mm, ATORN combination pliers 180 mm, ATORN snipe nose pliers 200 mm, ATORN end cutting nippers 200 mm, ATORN water pump pliers VDE 250 mm	60 mm	703	●
1 each of ATORN round-nose pliers VDE 160 mm, ATORN snipe nose pliers VDE 200 mm straight and curved, ATORN combination pliers VDE 180 mm, ATORN side cutters VDE 160 mm, ATORN water pump pliers VDE 250 mm, ATORN wire stripping pliers VDE 160 mm	60 mm	704	●
1 each of ATORN circlip pliers J0/J1/J2/J11/J21/A0/A1/A2/A11/A21	60 mm	705	●

Prod. Gr. 547

ATORN® Hard foam inserts, equipped with high-quality ATORN tools

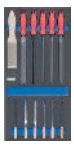
Width 293 mm, depth 587 mm, for HK drawer cabinets, system 700 S

Application:
For flexible and modular equipping of drawers from the HK drawer cabinet system 700 S and 700 B.

Execution:
- Two-tone polyethylene (PE) foam inserts equipped with tool assortments
- Closed-cell foam is resistant to most oils and chemicals
- The PE foam is lightweight, resistant, durable, odour-neutral and even food safe
- One tool insert fills half of the usable area of drawers with internal dimensions 600 x 600 mm
- Two tool inserts fill the entire usable area of drawers with internal dimensions 600 x 600 mm
- Three tool inserts fill the entire usable area of drawers with internal dimensions 900 x 600 mm

Advantage:
- Clearly arranged, organised and protected storage of tools in the drawers
- Accurately fitting cut-outs in contrasting blue make it easy to spot when tools are missing and help to prevent loss of tools
- Expensive tools can be stored securely and safely in the insert

Technical data:
- Depth: 587 mm
- Width: 293 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue


Ident. No. 706

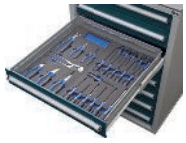

Ident. No. 707


Ident. No. 708


Ident. No. 709


Ident. No. 710


Ident. No. 711



Composition of set	Suitable for drawer	50537... Ident. No.	
ORION key files 100 mm cut 2, 6 pieces, DICK files 200 mm cut 2, 5 pieces, ORION file brush 115 x 40 mm	60 mm	706	●
1 each of: ATORN machinist's hammer 500 g, ATORN recoil-free soft-face hammer 30 mm, ORION 6-piece chisel in holder, ORION 6-piece pin punch set, ATORN cemented carbide scriber 150 mm, ATORN bow saw spare blades 300 mm 24 teeth, ATORN aluminium saw bow 300 mm, ORION knife with snap-off blade 9 mm	90 mm	707	●
1 each of ATORN vernier callipers 150 mm, ATORN pocket tape measure 3 m, ATORN light metal ruler 300 mm, ATORN try square 100 x 70 mm, 9 ATORN hexagonal screwdrivers, ATORN straight edge 125 mm, ORION knife 145 mm, ORION all-purpose shears 180 mm, TICOM white metal marker, Turbo LED hand-held lamp (not including batteries)	60 mm	708	●
1 each of ATORN pocket tape measure 3 m, ATORN triangular hol-low-ground scraper 150 mm, ORION knife 165 mm, ORION all-purpose shears 180 mm, ORION saw bow 255 mm,12 saw blades, TICOM white metal marker, telescopic mirror Ø 50 mm, telescopic pick-up magnet with 3 kg retention force, Turbo LED hand-held lamp (not including batteries)	60 mm	709	●
1 each of ATORN vernier callipers 150 mm, ATORN micrometer 0-25 mm, ATORN straight edge 125 mm, ATORN try square 100 x 70 mm, ATORN knife-edge square 75 x 50 mm, ATORN spirit level length 400 mm, ORION spring divider 125 mm, ORION feeler gauges 20 blades 0.05-1.00 mm, ORION spring steel ruler 300 mm, ORION protractor 120 x 150 mm, ORION scriber 160 x 5 mm	90 mm	710	●
ATORN 1/2" and 1/4" socket wrench set, 35 pieces, ATORN bit box, 32 pieces	60 mm	711	●

Prod. Gr. 547



Hard foam insert

A perfectly organised workplace increases productivity and safety in every process. For optimal performance, this perfect organisation must be maintained down to the last detail. Hard foam inserts can help: Already equipped with high-quality tools or individually planned, the inserts maintain order down to the tiniest screw. High-quality materials and the latest technology allow detailed outlines and a wide range of different cavities to be cut – always near to the surface for easy removal. Each part has its dedicated space. Hard foam inserts also secure the contents during storage and transport. The two-tone material lets you see at a glance if an item is missing.

A strong material



PE-foam is lightweight yet resilient.



Furthermore it is oil-resistant and water-resistant.



It also has shock-absorbing properties.



The hard foam is durable, odour-free and even suitable for use with foodstuffs.



ESD foam is available for electronic parts.

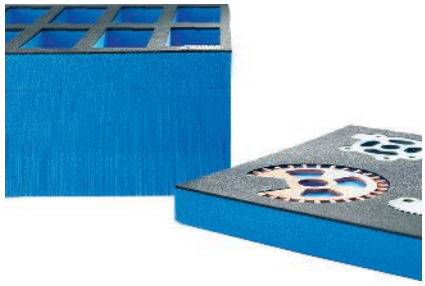


Use the laser engraver to add your personal signature and give the hard foam insert an individual finish.

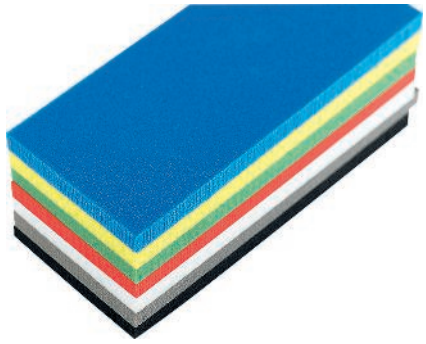
Versatile applications – many possibilities



The largest available hard foam insert is 1500 mm long and 1000 mm wide. Almost all dimensions and shapes smaller than this are possible.



Standard versions of the material are 30 mm, 60 mm or 90 mm thick. Individual versions are possible with smaller and larger thicknesses up to a maximum of 210 mm.



There are many colour options available. The black surface layer can be combined with the following contrasting colours: Standard blue, as well as the optional colours red, green, yellow, white or grey.

ATORN® Hard foam inserts, equipped with high-quality ATORN tools

Width 490 mm, depth 265 mm, for ANKE V series combination workbenches

Application:
For flexible and modular equipping of drawers from the ANKE workbenches series V (no. 50201; 50202; 50203; 50236; 50284).

Execution:
- Two-tone foam inserts made of polyethylene (PE) equipped with tool assortments
- Closed cells provide resistance against most oils and chemicals
- The PE foam is lightweight, resistant, durable, odour-neutral and safe for foodstuffs
- One tool insert fills half of the useful area of a drawer with internal dimensions 500 x 540 mm
- Two tool inserts fill the entire useful area of a drawer with internal dimensions 500 x 540 mm

Advantage:
- For clear order and protected storage of tools in the drawers
- Precisely dimensioned cut-outs and a contrast colour (blue) means that missing tools can be spotted at a glance, avoiding any loss of tools
- Expensive tools will be kept safe and protected in the insert

Technical data:
- Depth: 265 mm
- Width: 490 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue


Ident. No. 405


Ident. No. 420


Ident. No. 425


Ident. No. 430


Ident. No. 435


Ident. No. 440

Composition of set	Suitable for drawer	50537... Ident. No.	
1 ATORN combination spanner width a.f. 6/7/8/9/10/11/12/13/14/15/16/17/18/19/20/21/22/24 mm	90 mm	405	●
ATORN hexagonal angle screwdriver 9 pieces, 1 ATORN slotted screwdriver 5.5 x 100/6.5 x 125/8 x 150 mm, 1 ATORN Phillips screwdriver PH 1/PH 2/PH 3/PZ 1/PZ 2	60 mm	420	●
1 ATORN slotted screwdriver VDE 2.5 x 75/3.5 x 100/4 x 100/5.5 x 125, 1 ATORN Phillips screwdriver VDE PH 0/PH 1/PH 2/PZ 0/PZ 1/PZ 2, ATORN wire-stripping tool, WIHA voltage tester	60 mm	425	●
1 ATORN TORX screwdriver T 6/T 7/T 8/T 9/T 10/T 15/T 20/T 25/T 27/T 30/T 40, ATORN angled screwdriver 8 pieces T 9-T 40 with ball head	60 mm	430	●
1 ATORN round-nose pliers 160 mm ATORN triple pliers 160 mm, ATORN side-cutters 165 mm, ATORN combination pliers 180 mm, ATORN snipe nose pliers 200 mm, ATORN end cutting nippers 200 mm, ATORN water pump pliers VDE 250 mm	60 mm	435	●
1 ATORN round-nose pliers VDE 160 mm, ATORN snipe nose pliers VDE 200 mm straight and bent, ATORN combination pliers VDE 180 mm, ATORN side cutters VDE 160 mm, ATORN water pump pliers VDE 250 mm, ATORN wire stripping pliers VDE 160 mm	60 mm	440	●

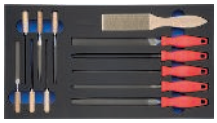
Prod. Gr. 547

ATORN® Hard foam inserts, equipped with high-quality ATORN tools

Width 490 mm, depth 265 mm, for ANKE V series combination workbenches

Technical data:
- Depth: 265 mm
- Width: 490 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue


Ident. No. 445


Ident. No. 450


Ident. No. 460


Ident. No. 470


Ident. No. 475


Ident. No. 490

Composition of set	Suitable for drawer	50537... Ident. No.	
1 ATORN circlip pliers J0/J1/J2/J11/J21/A0/A1/A2/A11/A21	60 mm	445	●
ORION key files 100 mm cut 2, 6 pieces, DICK files 200 mm cut 2, 5 pieces, ORION file brush 115 x 40 mm	60 mm	450	●
1 ATORN machinist's hammer 500 g, ATORN carbide marking needle 150 mm, ORION flat chisel 200 mm, ORION chisel set 6 pcs., ORION pin punch set 6 pcs., ORION drift punch 1-5 mm, ORION centre punch 120 x 10 mm, GEDORE protective cover for 0.5 kg hammer	90 mm	460	●
1 ATORN pocket tape measure 3 m, ATORN triangular hollow-ground scraper 150 mm, ORION knife 165 mm, ORION all-purpose shears 180 mm, ORION saw bow 255 mm, saw blades 12 pieces, TICOM metal marker white, telescopic mirror Ø 50 mm, telescopic pick-up magnet retention force 3 kg, LED hand-held lamp Turbo (without batteries)	60 mm	470	●
ATORN vernier calliper 150 mm, ATORN external micrometer 0-25 mm, ATORN straight edge 125 mm, ATORN back square 100 x 70 mm, ATORN knife-edge square 75 x 50 mm, ATORN spirit level length 400 mm, ORION spring divider 125 mm, ORION Feeler gauges 20 sheets 0.05-1.00 mm, ORION scale spring steel 300 mm, ORION protractor 120 x 150 mm, ORION marking needle 160 x 5 mm	90 mm	475	●
ATORN socket wrench set 1/2" and 1/4", 35 pieces, ATORN Bitbox 32 pieces	60 mm	490	●

Prod. Gr. 547

ATORN® Tool trolley with metal shutters

Width 625 mm, with 4 drawers that extend on both sides

Execution:
- Sturdy sheet steel construction with large table top made of plastic with integrated storage compartments and spacious base container
- 4 drawers which can be extended on both sides, protected against falling out and with smooth-running ball bearing guides
- Securely welded partitions in the drawers
- Drawer 1 + 2 = 3 longitudinal partitions each, drawer 3 = 1 cross-partition, drawer 4 = no partitions
- Lockable with metal shutters, central locking with padlock possible (not included in scope of delivery, see padlock with shackle diameter 6.5, no. 50025 010 or 040)
- 4 ball-bearing wheels, 1 lockable steering roller
- Tool assortments, see from no. 52561 010-030, 38170 013, 52560 010-020, 50276 032-035

Notes:
To order customised hard foam inserts suitable for these drawers, please use the following clear inside measurements: Width 466 mm, depth 310 mm

Technical data:
- Pullout type: Pull-out to both sides
- With single pull-out safety brake: No
- With single-locking drawers: No
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 300 kg
- Central locking: Yes
- Lock type: Padlock
- Punched-hole, sidewall: No
- With edge protection: No
- With sliding handle: No
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated



Number of drawers (PCS)				4
Drawer front height				4 x 75 mm
Draw width (inner dimension) (mm)				476
Drawer depth (inner dimension) (mm)				320
Load-carrying capacity per drawer (kg)				20
Height (mm)				930
Width (mm)				625
Depth (mm)				400
	Body colour	Colour of front		
50278...	Light grey RAL 7035	Light grey RAL 7035	Ident. No.	500 ●

Prod. Gr. 5BA

Accessories for		50278 500
50025... TITALIUM™ series 54TI padlocks With hardened steel shackle	Ident. No.	010 ●
50025... Padlock series 45 Precision cylinder lock with key cylinder	Ident. No.	040 ●

ATORN® Tool trolleys

Width 605 mm, with 6 drawers that extend on both sides

Execution:
- Sturdy sheet steel construction with large table top made of plastic with integrated storage compartments
- 6 drawers which can be extended on both sides, protected against falling out
- Drawers with slotted strips for partitioning with separating plates, see accessories no. 50278 515 or with non-slip mats, no. 50278 512
- 4 ball-bearing wheels, 1 lockable steering roller
- Lockable with padlock (not included in scope of delivery, see padlock with shackle diameter 6.5 no. 50025 010 or 040)
- Additional accessories: Padlock with shackle diameter 6.5, see no. 50025 010 or 040, AQURADO textured mat for drawer, see no. 50540 610
- Tool assortments, see from no. 52561 010-030, 38170 013, 52560 010-020, 50276 032-035

Notes:
To order customised hard foam inserts suitable for these drawers, please use the following clear inside measurements: Width 472 mm, depth 302 mm

Technical data:
- Pullout type: Pull-out to both sides
- With single pull-out safety brake: No
- With single-locking drawers: No
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 300 kg
- Central locking: Yes
- Lock type: Padlock
- Punched-hole, sidewall: No
- With edge protection: No
- With sliding handle: No
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated



Number of drawers (PCS)				6
Drawer front height				4 x 45 mm | 1 x 120 mm | 1 x 210 mm
Draw width (inner dimension) (mm)				480
Drawer depth (inner dimension) (mm)				325
Load-carrying capacity per drawer (kg)				25
Height (mm)				930
Width (mm)				605
Depth (mm)				375
	Body colour	Colour of front		
50278...	Light grey RAL 7035	Light grey RAL 7035	Ident. No.	510 ●

Prod. Gr. 5BA

	Accessories for		50278 510
50025...	TITALIUM™ series 54TI padlocks With hardened steel shackle	Ident. No.	010 ●
50025...	Padlock series 45 Precision cylinder lock with key cylinder	Ident. No.	040 ●
50278...	Non-slip mat set 5 pieces, for ATORN tool trolley no. 50278	Ident. No.	512 ●
50278...	Divider strip For ATORN tool trolley no. 50278 510	Ident. No.	515 ●
50540...	AQURADO textured mat HK tool trolley no. 50278 510 and 50278 800	Ident. No.	610 ●

ATORN® Tool trolleys

Width 650 mm, with swing columns, lowerable intermediate boxes

Execution:

- Sturdy sheet-steel construction with large floor tray, table surface with rubber mat
- 2 intermediate boxes each with 4 sheet metal dividers for versatile partitioning
- Useful area of intermediate boxes W x D 480 x 315 mm, load capacity per intermediate box 15 kg
- With swivel columns for space-saving transport, can be folded down to the lowest height of the tool trolley in order to save space and act as handles
- The intermediate boxes can be lowered using the fold-down columns, total lowered height 500 mm
- Table top and intermediate boxes with rubber protection strips to protect against damage
- Lockable with padlock (not included in scope of delivery, see padlock with shackle diameter 6.5 no. 50025 010 or 040)
- Tool assortments, see from no. 52561 010-030, 38170 013, 52560 010-020, 50276 032-035

Technical data:

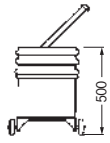
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 300 kg
- Central locking: No
- Lock type: Padlock
- Punched-hole, sidewall: No
- With edge protection: No
- With sliding handle: No
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated

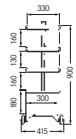


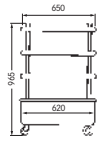
With tilting poles for space-saving transport



Without tools







Number of drawers (PCS)				0
Height (mm)				965
Width (mm)				650
Depth (mm)				415
	Body colour	Colour of front		
50277...	Light grey RAL 7035	Light grey RAL 7035	Ident. No.	001 ●

Prod. Gr. 5BA

	Accessories for		50277 001
50025...	TITALIUM™ series 54TI padlocks With hardened steel shackle	Ident. No.	010 ●
50025...	Padlock series 45 Precision cylinder lock with key cylinder	Ident. No.	040 ●

ATORN® Tool trolleys

Width 778 mm, with fully extending drawers

Execution:
- Sturdy sheet steel construction with solvent-resistant plastic worktop and 2 integrated storage compartments
- Plastic-coated metal sliding handle attached directly to the frame
- Central locking with cylinder lock secures all drawers, incl. 2 keys
- 4 abrasion-proof transport wheels, 100 mm diameter, 2 of which can be steered, 1 lockable steering roller
- For accessories such as can holder, document holder, suspended bins, waste basket see no. 50278 578-590, holder for cable box, see no. 50278 813, retaining frame incl. 12 transparent tilting containers, see no. 50278 815, tool hooks for attachment to rectangular hole grid on sidewalls, see no. 50638 300-650
- Our ATORN hard foam inserts with tool assortments are suitable for equipping drawers, see no. 50537 505-591 or AQURADO textured mat for drawers see no. 50540 620, boxes from no. 50540 150

Advantage:
- Indented side walls protect additional add-on parts from damage since they are located within the overall trolley dimensions
- Rectangular hole grid on the sidewalls for individual attachment options using e.g. hooks for tools or other add-on parts, e.g. can holder, waste basket etc.

Delivery:
Incl. 1 sheet metal divider per drawer

Notes:
To order customised hard foam inserts suitable for these drawers, please use the following clear inside measurements: Width 520 mm, depth 345 mm.

Technical data:
- Pullout type: Full extension
- With single pull-out safety brake: No
- With single-locking drawers: Yes
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 300 kg
- Central locking: Yes
- Lock type: Cylinder lock
- Punched-hole, sidewall: Yes
- Punched-hole: 10 x 10 mm
- With edge protection: No
- With sliding handle: Yes
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Wheel diameter: 100 mm
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated



Ident. No. 560



Ident. No. 570–571



Individual locking of drawers



4 rubber-coated wheels, Ø 100 mm



Central locking with cylinder lock, incl. 2 keys



Fully extending drawers

Number of drawers (PCS)				6	7	8
Drawer front height				4 x 80 mm | 2 x 165 mm	6 x 80 mm | 1 x 165 mm	8 x 80 mm
Draw width (inner dimension) (mm)				527	527	527
Drawer depth (inner dimension) (mm)				348	348	348
Load-carrying capacity per drawer (kg)				20	20	20
Height (mm)				915	915	915
Width (mm)				778	778	778
Depth (mm)				496	496	496
	Body colour	Colour of front				
50278...	Light grey RAL 7035	Gentian blue RAL 5010	Ident. No.	560	570	571
				●	●	●

Prod. Gr. 5BA



ATORN® Tool trolley incl. 151 pcs Tool assortment in 7 hard foam inserts

Width 778 mm, with 7 fully extending drawers

Execution:
- Sturdy sheet steel construction with solvent-resistant plastic worktop and 2 integrated storage compartments
- Plastic-coated metal sliding handle attached directly to the frame
- Central locking with cylinder lock secures all drawers, incl. 2 keys
- 4 abrasion-proof transport wheels, 100 mm diameter, 2 of which can be steered, 1 lockable steering roller
- 7 ATORN hard foam inserts fitted with 151 ATORN tools fill 4 drawers of the tool trolley
- Additional ATORN hard foam inserts equipped with tools for the versatile equipping of drawers, see no. 50537 505-591, additional accessories such as can holders, document holders, suspended boxes, waste baskets, see no. 50278 578-590, cable box holders, see no. 50278 813, holder frame incl. 12 transparent tilting bins, see no. 50278 815

Advantage:
- Clearly-arranged and safe storage of tools in the drawers
- Precisely dimensioned cut-outs in the inserts and the use of a contrast colour (blue) means that missing tools can be detected at a glance
- Expensive tools can be stored securely and safely in the insert
- Indented side walls protect additional add-on parts from damage since they are located within the overall trolley dimensions
- Rectangular hole grid on the sidewalls for individual attachment options using e.g. hooks for tools or other add-on parts, e.g. can holder, waste basket etc.

Delivery:
Incl. 1 sheet metal divider per drawer, incl. 7 ATORN hard foam inserts equipped with 151 ATORN tools

Notes:
To order customised hard foam inserts suitable for these drawers, please use the following clear internal dimensions: Width 520 mm, depth 345 mm.

Technical data:
- Pullout type: Full extension
- With single pull-out safety brake: No
- With single-locking drawers: Yes
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 300 kg
- Central locking: Yes
- Lock type: Cylinder lock
- Punched-hole, sidewall: Yes
- Punched-hole: 10 x 10 mm
- With edge protection: No
- With sliding handle: Yes
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Wheel diameter: 100 mm
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated



Trolley incl. 7 hard foam inserts equipped with 151-piece tool assortment:



For contents, see nos. 50537 530 and 509



For contents, see nos. 50537 516 and 515



For contents, see nos. 50537 526 and 517



For contents, see no. 50537 591

Number of drawers (PCS)				7
Drawer front height				6 x 80 mm | 1 x 165 mm
Draw width (inner dimension) (mm)				527
Drawer depth (inner dimension) (mm)				348
Load-carrying capacity per drawer (kg)				20
Height (mm)				913
Width (mm)				778
Depth (mm)				496
	Body colour	Colour of front		
50278...	Light grey RAL 7035	Gentian blue RAL 5010	Ident. No.	575 ●

Prod. Gr. 586

ATORN® Tool trolley with individual drawer pull-out locking

Width 817 mm, with fully extending drawers

Execution:
- Sturdy sheet steel construction with solvent-resistant plastic worktop, 2 integrated storage compartments and 2 can holders
- Full-height edge protection on all 4 corners of the trolley, plastic-coated metal sliding handle attached directly to the frame
- Drawers with labelling space for individual identification with pictogram stickers
- Central locking with cylinder lock secures all drawers, incl. 2 articulated wrenches
- 2 ball-bearing fixed castors and 2 125-mm diameter steering rollers for transportation, steering rollers with parking brake
- For additional accessories such as can holder, document holder, suspended bins, waste basket see no. 50278 578-590, holder for cable box, see no. 50278 813, retaining frame incl. 12 transparent tilting containers, see no. 50278 815, tool hooks for attachment to rectangular hole grid on sidewalls, see no. 50638 300-650
- Our ATORN hard foam inserts with tool assortments are suitable for equipping drawers, see no. 50537 505-591 or AQURADO textured mat for drawers see no. 50540 620, boxes from no. 50540 150

Advantage:
- With individual drawer pull-out locking which means that only one drawer can be opened, protecting the trolley against tipping
- Indented side walls protect additional add-on parts from damage since they are located within the overall trolley dimensions
- Rectangular hole grid on the sidewalls for individual attachment options using e.g. hooks for tools or other add-on parts, e.g. can holder, waste basket etc.

Delivery:
Incl. 1 sheet metal divider per drawer and pictogram label for drawer marking

Notes:
To order customised hard foam inserts suitable for these drawers, please use the following clear inside measurements: Width 520 mm, depth 345 mm.

Technical data:
- Pullout type: Full extension
- With single pull-out safety brake: Yes
- With single-locking drawers: Yes
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 440 kg
- Central locking: Yes
- Lock type: Cylinder lock
- Punched-hole, sidewall: Yes
- Punched-hole: 10 x 10 mm
- With edge protection: Yes
- With sliding handle: Yes
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Wheel diameter: 125 mm
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated





Incl. pictogram stickers for labelling drawers



ATORN hard foam inserts, with tools, for flexible equipping of drawers, see no. 50537 505-591

Number of drawers (PCS)				6	7	8
Drawer front height				3 x 75 mm | 3 x 160 mm	5 x 75 mm | 2 x 160 mm	7 x 75 mm | 1 x 160 mm
Draw width (inner dimension) (mm)				527	527	527
Drawer depth (inner dimension) (mm)				348	348	348
Load-carrying capacity per drawer (kg)				25	25	25
Height (mm)				1042	1042	1042
Width (mm)				817	817	817
Depth (mm)				502	502	502
	Body colour	Colour of front				
50278...	Light grey RAL 7035	Gentian blue RAL 5010	Ident. No.	572	573	574
				●	●	●

Prod. Gr. 5BA

ATORN® Tool trolley with individual drawer pull-out locking

Width 817 mm, with 5 fully extending drawers and 1 door

Execution:
- Sturdy sheet steel construction with solvent-resistant plastic worktop, 2 integrated storage compartments and 2 can holders
- Full-height edge protection on all 4 corners of the trolley, plastic-coated metal sliding handle attached directly to the frame
- Drawers with labelling space for individual identification with pictogram stickers
- With front door, height 337 mm, can be locked separately with 2 articulated wrenches, dimensions internal compartment H x W x D 340 x 553 x 450 mm
- Central locking with cylinder lock secures all drawers, incl. 2 articulated wrenches
- 2 ball-bearing fixed castors and 2 125-mm diameter steering rollers for transportation, steering rollers with parking brake
- For additional accessories such as can holder, document holder, suspended bins, waste basket see no. 50278 578-590, holder for cable box, see no. 50278 813, retaining frame incl. 12 transparent tilting containers, see no. 50278 815, tool hooks for attachment to rectangular hole grid on sidewalls, see no. 50638 300-650
- Our ATORN hard foam inserts with tool assortments are suitable for equipping drawers, see no. 50537 505-591 or AQURADO textured mat for drawers see no. 50540 620, boxes from no. 50540 150

Advantage:
- With individual drawer pull-out locking, which means that only one drawer can be opened, protecting the trolley against tipping
- The compartment behind the doors provides a large storage area for bulky, large tools, parts and cases
- Indented side walls protect additional add-on parts from damage since they are located within the overall trolley dimensions
- Rectangular hole grid on the sidewalls for individual attachment options using e.g. hooks for tools or other add-on parts, e.g. can holder, waste basket etc.

Delivery:
Incl. 1 sheet metal divider per drawer and pictogram label for drawer marking

Notes:
To order customised hard foam inserts suitable for these drawers, please use the following clear inside measurements: Width 520 mm, depth 345 mm.

Technical data:
- Pullout type: Full extension
- With single pull-out safety brake: Yes
- With single-locking drawers: Yes
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 440 kg
- Central locking: Yes
- Lock type: Cylinder lock
- Punched-hole, sidewall: Yes
- Punched-hole: 10 x 10 mm
- With edge protection: Yes
- With sliding handle: Yes
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Wheel diameter: 125 mm
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated





Large storage space behind the doors



Tool assortment stored in hard foam, see no. 50537 505-591



With individual drawer locking

Number of drawers (PCS)				5
Drawer front height				5 x 75 mm
Draw width (inner dimension) (mm)				527
Drawer depth (inner dimension) (mm)				348
Load-carrying capacity per drawer (kg)				25
Height (mm)				1042
Width (mm)				817
Depth (mm)				502
	Body colour	Colour of front		
50278...	Light grey RAL 7035	Gentian blue RAL 5010	Ident. No.	576 ●

Prod. Gr. 5BA



ATORN® Tool trolley incl. 74 pcs Tool assortment in 4 hard foam inserts

Width 817 mm, with 5 fully extending drawers and 1 door, with drawer individual extension lock

Execution:
- Sturdy sheet steel construction with solvent-resistant plastic worktop, 2 integrated storage compartments and 2 can holders
- Full-height edge protection on all 4 corners of the trolley, plastic-coated metal sliding handle attached directly to the frame
- Drawers with labelling space for individual identification with pictogram stickers
- With front door, height 337 mm, can be locked separately with 2 articulated wrenches, dimensions internal compartment H x W x D 340 x 553 x 450 mm
- Rectangular hole grid on the sidewalls for individual attachment options using e.g. hooks for tools or other add-on parts, e.g. can holder, waste basket etc.
- Central locking with cylinder lock secures all drawers, incl. 2 articulated wrenches
- Transportable thanks to 2 ball-bearing fixed wheels and 2 guide rollers, diameter 125 mm, with parking brake
- 4 ATORN hard foam inserts fitted with 74 ATORN tools fill 2 drawers of the tool trolley
- Additional ATORN hard foam inserts equipped with tools for the versatile equipping of drawers, see no. 50537 505-591, AQURADO textured mat for drawers, see no. 50540 620, additional accessories such as can holders, document holders, suspended boxes, waste baskets, see no. 50278 578-590, cable box holders, see no. 50278 813, holder frame incl. 12 transparent tilting bins, see no. 50278

Advantage:
- With individual drawer pull-out locking which means that only one drawer can be opened, protecting the trolley against tipping
- The compartment behind the doors provides a large storage area for bulky, large tools, parts and cases
- Clearly-arranged and safe storage of tools in the drawers
- Precisely dimensioned cut-outs in the inserts and the use of a contrast colour (blue) means that missing tools can be detected at a glance
- Indented side walls protect additional add-on parts from damage since they are located within the overall trolley dimensions

Delivery:
Incl. 4 ATORN hard foam inserts no. 50537 509/515/517/530, made from black/blue two-tone polyethylene (PE), closed cell foam resistant to most oils and chemicals, equipped with 74 ATORN tools and 1 sheet metal divider per drawer and pictogram label for drawer marking

Notes:
To order customised hard foam inserts suitable for these drawers, please use the following clear inside measurements: Width 520 mm, depth 345 mm.

Technical data:
- Pullout type: Full extension
- With single pull-out safety brake: Yes
- With single-locking drawers: Yes
- With SOFT-CLOSE closing function: No
- Load-carrying capacity: 440 kg
- Central locking: Yes
- Lock type: Cylinder lock
- Punched-hole, sidewall: Yes
- Punched-hole: 10 x 10 mm
- With edge protection: Yes
- With sliding handle: Yes
- Number of fixed rollers: 2 PCS
- Number of steering rollers: 2 PCS
- With wheel lock: Yes
- Material of the wheel: Solid rubber
- Wheel diameter: 125 mm
- Material of the worktop: Plastic
- Material: Sheet steel
- Surface: Powder-coated





Large storage space behind the doors



Tool assortment stored in hard foam, see no. 50537 505-591



With individual drawer locking









Number of drawers (PCS)				2
Drawer front height				5 x 75 mm
Draw width (inner dimension) (mm)				527
Drawer depth (inner dimension) (mm)				348
Load-carrying capacity per drawer (kg)				25
Height (mm)				1042
Width (mm)				817
Depth (mm)				502
	Body colour	Colour of front		
50278...	Light grey RAL 7035	Gentian blue RAL 5010	Ident. No.	595 ●

Prod. Gr. 5BA

ATORN® Accessories for ATORN tool trolley

Application:
Ident. No. 584: For A4 documents and work papers, for inserting in the 10 x 10 mm perforated sidewall of the trolley
Ident. No. 586: For holding 3 cans, holder for inserting in the 10 x 10 mm perforated sidewall of the trolley
Ident. No. 588: As a storage compartment, for inserting in the 10 x 10 mm perforated sidewall of the trolley
Ident. No. 590: For disposing of solid waste such as waste paper, for inserting in the 10 x 10 mm perforated sidewall of the trolley

Execution:
- **Ident. No. 578:**
  - Dimensions W x D x T 520 x 345 x 2 mm, colour black
  - Reinforced fabric mat with textured structure made of adhesive plastic
- **Ident. No. 579:**
  - Dimensions W x D x T 520 x 345 x 3 mm, colour black
  - Surface made of fine groove profile, grooved in longitudinal direction, oil-resistant
- **Ident. No. 580:**
  - For drawer front height 75/80 mm
  - 5 pieces, sheet metal partitions, height x depth 60 x 347 mm
- **Ident. No. 582:**
  - For drawer front height 160/165 mm
  - 5 pieces, sheet metal partitions, height x depth 120 x 347 mm
- **Ident. No. 586:**
  - Dimensions L x W x H 260 x 80 x 102 mm
  - Incl. assembly kit
- **Ident. No. 588:** Dimensions L x W x H 300 x 75 x 78 mm



Ident. No. 584



Ident. No. 586
(Without cans)



Ident. No. 588
(Without cans)



Ident. No. 590

50278...	Anti-slip mat for drawer	Ident. No.	578 ●
50278...	Ribbed rubber mat for drawer	Ident. No.	579 ●
50278...	Separating plates, 5 pieces for height 75/80 mm	Ident. No.	580 ●
50278...	Separating plates, 5 pieces for height 160/165 mm	Ident. No.	582 ●
50278...	Document holder	Ident. No.	584 ●
50278...	Can holder	Ident. No.	586 ●
50278...	Suspended box	Ident. No.	588 ●
50278...	Waste paper basket	Ident. No.	590 ●

Prod. Gr. 5BA

ATORN® Hard foam inserts equipped with high-quality ATORN tools

Width 260 mm, depth 345 mm, for ATORN tool trolley

Application:
Ident. No. 505–511, 513: For the flexible fitting of drawers of ATORN tool trolley no. 50278 560-595.
Ident. No. 512: For the flexible fitting of drawers of ATORN tool trolley no. 50278 560-595

Execution:
- Two-tone foam inserts made of polyethylene (PE) equipped with tool assortments
- Closed cells provide resistance against most oils and chemicals
- The PE foam is lightweight, resistant, durable, odour-neutral and safe for foodstuffs
- One tool insert fills half of the useful area of a drawer with internal dimensions 527 x 348 mm
- Two tool inserts fill the entire useful area of a drawer with internal dimensions 527 x 348 mm

Advantage:
- For clear order and protected storage of tools in the drawers
- Precisely dimensioned cut-outs and a contrast colour (blue) means that missing tools can be spotted at a glance, avoiding any loss of tools
- Expensive tools will be kept safe and protected in the insert

Technical data:
- Depth: 345 mm
- Width: 260 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue
- Suitable for drawer: 60 mm



Ident. No. 505



Ident. No. 507



Ident. No. 509



Ident. No. 511



Ident. No. 512



Ident. No. 513

Composition of set	50537... Ident. No.	
1 ATORN double ring wrench width a.f. 6 x 7/8 x 9/10 x 11/12 x 13/14 x 15/16 x 17/18 x 19/20 x 22 mm	505	●
1 ATORN double open-end wrench width a.f. 6 x 7/8 x 9/10 x 11/12 x 13/14 x 15/16 x 17/18 x 19/20 x 22/21 x 23/24 x 27/30 x 32 mm	507	●
1 ATORN combination spanner width a.f. 6/7/8/9/10/11/12/13/14/15/16/17/18/19/21/22/24 mm	509	●
1 ATORN ratchet combination spanner width a.f. 8/9/10/11/12/13/14/15/16/17/18/19/21/22 mm, 1 ATORN adapter for 1/4" bits, for 1/4", 3/8", 1/2" square head	511	●
1 ATORN combination spanner, depressed centre design width a.f. 6/7/8/9/10/11/12/13/14/15/16/17/18/19/21/22/24 mm	512	●
1 ATORN electronic vernier calipers 150 mm, ATORN micrometer 0-25 mm, ORION spring divider 125 mm, ATORN pocket tape measure 3 m, ORION spring steel strip ruler 200 mm, ATORN straight edge 100 mm, ATORN flat square 100 x 70 mm, ORION protractor 120 x 150 mm	513	●

Prod. Gr. 547

ATORN® Hard foam inserts equipped with high-quality ATORN tools

Width 260 mm, depth 345 mm, for ATORN tool trolley

Technical data:
- Depth: 345 mm
- Width: 260 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue
- Suitable for drawer: 60 mm



Ident. No. 514



Ident. No. 515



Ident. No. 516



Ident. No. 517



Ident. No. 518



Ident. No. 519

Composition of set	50537... Ident. No.	
1 ATORN hexagon head screwdriver width a.f. 2/2,5/3/4/5/6/8/10, ATORN angled screwdriver 13 pieces T5-T50 long design	514	●
ATORN hexagonal Allen key 9 pieces, 1 slotted screwdriver 5.5 x 100/6.5 x 125/8 x 150 mm, 1 ATORN Phillips screwdriver PH 1/PH 2/PH 3/PZ 1/PZ 2	515	●
1 ATORN TORX screwdriver T 6/T 7/T 8/T 9/T 10/T 15/T 20/T 25/T 27/T 30/T 40	516	●
1 ATORN flat-round pliers 200 mm, ATORN combination pliers 180 mm, ATORN water pump pliers 250 mm, ATORN side cutters 165 mm, ATORN round-nose pliers 160 mm	517	●
1 ATORN circlip pliers J1/J2/J11/J21/A1/A2/A11/A21	518	●
1 ATORN slotted screwdriver VDE 2.5/3.5/4/5.5/10, 1 ATORN Phillips screwdriver VDE PH 1/PH 2/PZ 0/PZ 1/PZ 2, WIHA voltage tester	519	●

Prod. Gr. 547

ATORN® Hard foam inserts equipped with high-quality ATORN tools

Width 260 mm, depth 345 mm, for ATORN tool trolley

Technical data:
- Depth: 345 mm
- Width: 260 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue
- Suitable for drawer: 60 mm



Ident. No. 521



Ident. No. 522



Ident. No. 523



Ident. No. 524



Ident. No. 525



Ident. No. 526

Composition of set	50537... Ident. No.	
1 ATORN round-nose pliers VDE 160 mm, ATORN snipe nose pliers VDE 200 mm straight and bent, ATORN combination pliers VDE 180 mm, ATORN side cutters VDE 160 mm, ATORN wire stripping pliers VDE 160 mm	521	●
1 ATORN hexagonal screwdriver with t-handle width a.f. 2/2,5/3/4/5/6/8/10 mm	522	●
1 ATORN TORX screwdriver with t-handle T 8/T 10/T 15/T 20/T 25/T 27/T 30/T 40/T 45	523	●
1 ATORN pocket tape measure 3 m, ATORN triangular hollow-ground scraper 150 mm, ORION all-purpose shears 180 mm, ORION knife 165 mm, telescopic mirror Ø 50 mm, telescopic pick-up magnet retention force 6 kg, LED hand-held lamp Turbo (without batteries)	524	●
1 ATORN vernier calipers 150 mm, ATORN micrometer 0-25 mm, ATORN knife-edge square 75 x 50 mm, ATORN straight edge 125 mm, ATORN try square 100 x 70 mm, ORION spring steel strip ruler 300 mm, ORION scriber 160 x 5 mm, ORION spring divider 125 mm, ORION feeler gauges 20-sheet 0.05-1.00 mm	525	●
1 ATORN vernier calipers 150 mm, ATORN pocket tape measure 3 m, ATORN try square 100 x 70 mm, ATORN bitbox 32 pieces, ORION knife 165 mm, ORION all-purpose shears 180 mm, ORION spring steel strip ruler 300 mm, LED hand-held lamp Turbo (without batteries)	526	●

Prod. Gr. 547

ATORN® Hard foam inserts equipped with high-quality ATORN tools

Width 260 mm, depth 345 mm, for ATORN tool trolley

Technical data:
- Depth: 345 mm
- Width: 260 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue
- Suitable for drawer: 60 mm


Ident. No. 527


Ident. No. 529


Ident. No. 530


Ident. No. 531


Ident. No. 532


Ident. No. 534

Composition of set	50537... Ident. No.	
1 ATORN machinist's hammer 500 g, ATORN carbide scriber 150 mm, ORION chisel set 6 pieces, ORION pin punch set 6 pieces, GEDORE protective cover for hammer	527	●
ORION key files 100 mm cut 2, 6 pieces, DICK files 200 mm cut 2, 5 pieces	529	●
ATORN socket wrench set 1/4" and 1/2", 35 pieces equipped in the same way as 101 (but without box)	530	●
ATORN socket wrench set 3/8", 49 pieces	531	●
ATORN socket wrench set 1/4", 45 pieces, ATORN bitbox 32 pieces	532	●
ATORN socket wrench set 1/2", 35 pieces	534	●

Prod. Gr. 547

ATORN® Hard foam inserts equipped with high-quality ATORN tools

Width 260 mm, depth 345 mm, for ATORN tool trolley

Technical data:
- Depth: 345 mm
- Width: 260 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue
- Suitable for drawer: 60 mm


Ident. No. 550


Ident. No. 560


Ident. No. 565


Ident. No. 570


Ident. No. 580

Composition of set	50537... Ident. No.	
1 ERDI ideal scissors 260 mm, ERDI ideal scissors straight 180 mm, weaver's scissors straight length 110 mm, all-purpose shears 250 mm, revolving punch pliers length 220 mm, ATORN utility knife	550	●
1 ATORN electronic flat nose pliers 125 mm, ATORN electronic round-nose pliers 125 mm, ATORN electronic pointed pliers 125 mm bent and straight, ATORN electronic side cutters 112 mm with and without bevel, ATORN electronic end cutting nippers 112 mm without bevel, ATORN cable-end sleeve pliers 180 mm	560	●
1 ATORN cable cutters 160 mm, ATORN crimping tool, ATORN wire-stripping tool VDE, ATORN tripe pliers 160 mm, ATORN voltage tester, ORION cable knife	565	●
1 ATORN torque screwdriver 0.6-1.5/1.5-3/3-5.4 Nm, 1 ATORN socket wrench 1/4" 4/4.5/5/5.5/6/7/8/9/10/11/12/13/14, ATORN bit holder for blades 170 mm, 1/4" bit holder, ATORN bit adapter for cordless drill 1/4", ATORN Bitbox Collector Universal 61 pieces	570	●
METABO cordless drill screwdriver PowerMaxx BS Basic 10.8 V/1.5 Ah incl. 2 x batteries (10.8 V/1.5 Ah), 1 x charger, ATORN Bitbox 32 pieces	580	●

50537 550 = Prod. Gr. 547, 50537 560 = Prod. Gr. 547, 50537 565 = Prod. Gr. 547, 50537 570 = Prod. Gr. 547, 50537 580 = Prod. Gr. 745

ATORN® Hard foam insert equipped with tools, hammer, saw, chisel set

Width 520 mm, depth 345 mm, for ATORN tool trolley

Application:
For the flexible fitting of drawers of ATORN tool trolley no. 50278 560-595.

Execution:
- Two-tone foam inserts made of polyethylene (PE) equipped with tool assortments
- Closed cells provide resistance against most oils and chemicals
- The PE foam is lightweight, resistant, durable, odour-neutral and safe for foodstuffs
- The tool insert fills the entire useful area of a drawer with internal dimensions 527 x 348 mm

Advantage:
- For clear order and protected storage of tools in the drawers
- Precisely dimensioned cut-outs and a contrast colour (blue) means that missing tools can be spotted at a glance, avoiding any loss of tools
- Expensive tools will be kept safe and protected in the insert

Technical data:
- Composition of set: 1 ATORN machinist's hammer 500 g, ATORN aluminium saw bow 300 mm with blade, ATORN bow saw spare blades 300 mm, 10 pieces, ATORN carbide scriber 150 mm, ORION soft-face hammer diameter 30 mm, ORION chisel set 6 pieces, ORION pin punch set 6 pieces, ORION knife 145 m
- Depth: 345 mm
- Width: 520 mm
- Height: 30 mm
- Material: PE - Polyethylene
- Colour of top hard foam inlay: Black
- Colour of bottom hard foam inlay: Blue
- Suitable for drawer: 60 mm



50537...	Ident. No.	591
		●

Prod. Gr. 547

ATORN® Tool assortment

For electricians, 18-piece

Delivery:
1 VDE screwdriver, 6 pcs, slotted/PH
1 voltage tester screwdriver
1 control cabinet key
1 pair of VDE combi pliers 180 mm
1 pair of VDE snipe-nose pliers, 200 mm, curved
1 pair of VDE side-cutters, 160 mm
1 pair of automatic wire strippers
1 electrician's knife
1 pair of wire end ferrule pliers, 0.25-16 mm²
1 BENNING DUTEST continuity tester
1 LED pen light with batteries
1 ERSA Multitip soldering iron C 25
1 solder, 250 g



52561...	Ident. No.	030
		●

Prod. Gr. 597

ATORN® Parallel vice

With a rear opening action, made of grey cast iron

Execution:
- High-quality grey cast iron with pearlitic texture
- Changeable and reversible jaws with smooth and ribbed clamping surface
- Smooth-running spindle with trapezoidal thread
- Cast-on pipe clamping jaws
- Plain anvil face

Advantage:
- Excellent clamping precision thanks to long, prismatic precision guide
- Spindle protected from dirt and damage by covering

Technical data:
- Jaws width: 100 mm
- Min./max. clamping width: 0-140 mm
- Clamp in depth: 75 mm
- Weight: 13 kg
- Colour: Blue
- Material: Grey cast iron



51028...	Ident. No.	001
		●

Prod. Gr. 5HA

Accessories for			51028 001
51028...	Rotary base	Ident. No.	021 ●
51028...	Steel jaws	Ident. No.	041 ●

ATORN® Tool boxes

made from sheet steel

Execution:
- Fold-down tubular carry handle
- Hammered, blue
- Accessories: For padlocks, see no. 50025 010
- **Ident. No. 500:**
  - Extremely stable tool box
  - Lid with projecting edges and end-to-end rod hinge, lockable with a padlock (not included in scope of delivery)
- **Ident. No. 510–530:**
  - Extremely sturdy design
  - Lid with projecting edges and end-to-end rod hinge, lockable with a padlock (not included in scope of delivery).

Technical data:
- With handle: Yes
- Lock type: Optional with padlock
- Material: Sheet steel
- Colour: Blue



Version		Three-piece	Five-piece	Five-piece	Five-piece
Width x height x depth		430 x 150 x 200 mm	430 x 200 x 200 mm	530 x 200 x 200 mm	600 x 200 x 200 mm
50010...	Ident. No.	500 ●	510 ●	520 ●	530 ●

Prod. Gr. 505

ATORN® Shelf for plug-in rack, load capacity per bay 100 kg

Single-row, with preassembled frame

Application:
Universal shelving system for all storage applications, quick set-up or conversion through simple plugging of the shelves, can be assembled without tools.

Execution:
- Galvanised plug-in rack, pre-assembled frames, simple and quick set-up and conversion without tools
- Shelves height-adjustable in increments of 25 mm
- Shelves with a 50 mm perforation grid to accommodate accessories
- Rear diagonal strut for longitudinal stiffening
- Comprehensive accessories including compartment dividers, partition grid available on request
- Planning dimensions: Basic shelf = nominal length + 56 mm, nominal depth + 36 mm

Advantage:
- Quick plug-in assembly without tools

Delivery:
Scope of delivery: 2 frames, 4 shelves

Notes:
- **Secure shelves with a height/depth ratio of ≥ 5: 1 against tipping (anchor to wall or base).**
- **The loads indicated per shelf and per bay apply for evenly distributed loads**
- **Bay load indications apply to shelving rows with 3 or more bays**
- Top shelf load-bearing capacity max. 200 kg



Ref. no. 001 in combination with 002

Height (mm)	Nominal depth (mm)	Nominal length (mm)	Number of shelves (PCS)	Load-carrying capacity per shelf (kg)	Load-carrying capacity per field (kg)	Surface: Galvanised, Version: Shelving unit, 50164... Ident. No.		Surface: Galvanised, Version: Add-on shelving, 50164... Ident. No.	
2000	400	1000	4	100	900	001	●	002	●

Prod. Gr. 587

ATORN® Set of two shelves for ATORN plug-in rack, load capacity 100 kg

Execution:
- With a 50 mm perforation grid to accommodate accessories
- Edge height 40 mm
- Incl. shelf holders

Depth (mm)	Length (mm)	Load-carrying capacity (kg)	Surface: Galvanised, 50164... Ident. No.	
400	1000	100	003	●

Prod. Gr. 587

ATORN® Safety tin snips

Leverage transmission

Application:
For safe cutting of steel and plastic strapping.

Execution:
- **Ident. No. 200:** Comfortable handle sleeves with anti-slip protection
- **Ident. No. 510:**
  - Special tool steel cutting head, forged, inductively hardened
  - With plastic handles

Advantage:
- **Ident. No. 200:** Hold-down clamp prevents the packaging strap from springing up and causing a hazard
- **Ident. No. 510:** Solid hold-down clamp prevents the packaging strap from springing up and causing a hazard



Ident. No. 200



Ident. No. 510

Length (mm)		250	600
Knife insert length (mm)		25	50
Max. material thickness for steel (mm)		0.5	1.2
53751...	Ident. No.	200	510
		●	●

Prod. Gr. 597

Roughing and cutting



Rough grinding and sanding discs



Cutting discs

Deburring and cleaning



Milling bits



Power brushes and internal cleaning brushes

Sanding



Abrasive flap discs

Precision grinding and dressing



Diamond and CBN (cubic boron nitride) cup wheels

2174

ATORN® Rough grinding discs for steel/cast iron

Type A 24 Q-BF 725

Application:
For deburring, chamfering, fettling and for preparatory and finishing work on weld seams.

Advantage:
- Hard version - ideal for grinding edges
- High removal rate with long service life

Technical data:
- Washer thickness: 7.0 mm
- Bore diameter: 22.23 mm
- Version: Hard
- Form: Cranked
- Free from iron and sulphur: No



Ident. No. 125

Washer Ø (mm)		115	125	180	230
Max. rotation speed (U/min(rpm))		13285	12200	8600	6600
Number of pieces per packet (PCS)		25	25	10	10
76100...	Ident. No.	115	125	180	230
		●	●	●	●

Prod. Gr. 6CH

ATORN® Cutting discs for stainless steel – extra thin

Type A 46 U9 BF 725

Application:
For burr-free cutting of thin-walled pipes, sheet steel and profiles.

Advantage:
- Very hard cutting disc for extremely short cutting times

Technical data:
- Bore diameter: 22.23 mm
- Version: Very hard
- Free from iron and sulphur: Yes



Ident. No. 125

		Form	Straight
Washer Ø (mm)	Washer thickness (mm)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)	76116... Ident. No.	
115	1.0	13300	50	115	●
115	1.5	13300	50	116	●
125	1.0	12250	50	125	●
125	1.5	12250	50	126	●
180	1.5	8500	25	180	●
230	1.9	6650	25	230	●

Prod. Gr. 6CH

ATORN® Cutting discs for stainless steel – ultra thin

Type 41 A60R BF

Application:
Ideal for cutting of thin-walled metal plates, profiles, tubes, rods and solid material.

Advantage:
- Maximum cost-effectiveness due to longer life span and improved cutting ability
- Reduced working hours since subsequent cleaning or deburring is no longer necessary
- 30% less dust production as well as additional noise and vibration damping ensure maximum working comfort

Technical data:
- Washer thickness: 0.75 mm
- Bore diameter: 22.23 mm
- Version: Very hard
- Free from iron and sulphur: Yes
- Number of pieces per packet: 25



		Form	Straight	Cranked
Washer Ø (mm)	Max. rotation speed (U/min(rpm))	76116... Ident. No.		76116... Ident. No.	
115	13300	315	●	415	●
125	12250	325	●	425	●

Prod. Gr. 6CH

ATORN® Cutting discs for steel – extra thin

type – 74 A30 T11-BF 725

Application:
For burr-free cutting of thin-walled pipes, sheet steel and profiles.

Advantage:
- Very hard cutting disc for extremely short cutting times

Technical data:
- Bore diameter: 22.23 mm
- Version: Very hard
- Free from iron and sulphur: No



Ident. No. 126

Washer Ø (mm)	Washer thickness (mm)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)	Form Straight 76109... Ident. No.	
115	1.0	13300	50	115	●
115	1.5	13300	50	116	●
125	1.0	12250	50	125	●
125	1.5	12250	50	126	●
180	1.5	8500	25	180	●
230	1.9	6650	25	230	●

Prod. Gr. 6CH





Source: Hahn+Kolb Werkzeuge GmbH
Technical data subject to change.
Availability subject to country specific rules and regulations.

HSS and cemented carbide milling bits
For electric and compressed air operated machines and systems with flexible shafts

Recommendations for use:

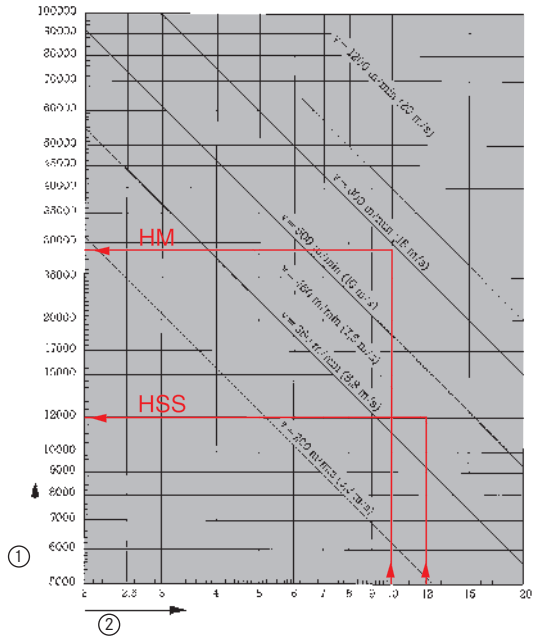
Optimal rotation speed and performance of the tool drive (compressed air, electrics, flexible shaft) are crucial for efficient use of cemented carbide milling bits.

- Use the highest possible rotation speeds within the recommended ranges of rotation speed/cutting speed.
- Pay particular attention to the rotation speed recommendations when working with materials with poor thermal conductivity, such as stainless steel, titanium alloys etc. so that you do not damage the tool. Blue colouration of the shaft and tool should be avoided.
- Only use clamping systems/drives without play; knocking and rattling of the tools results in premature wear.
- Do not choose a milling bit clamping length that is too small. Rule: Minimum clamping length is 2/3 of the shaft length.

When selecting the milling bits, take into account the material to be processed and the rotation speed.

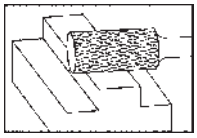
To determine the correct rotation speed range for the particular HSS or cemented carbide milling bit in your application, please note the following:

- Choose the toothing you want based on the material that will be processed and the resulting cutting speed.
- Find your required cutting diameter and the calculated cutting speed for the chosen toothing in the diagram on the right. The point where the lines cross gives you the required rotation speed range.

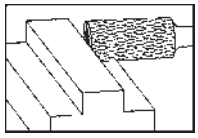


① Rotation speed (rpm), ② Cutting diameter (mm)

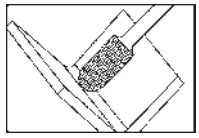
Milling bit shapes and their applications:



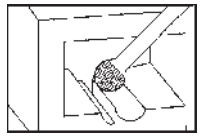
Shape: Cylindrical without end cut (ZYA)



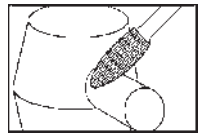
Shape: Cylindrical with end cut (ZYAS)



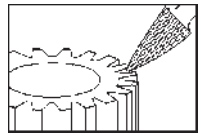
Shape: Cylindrical with radius end (WRC)



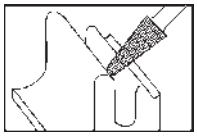
Shape: Ball (KUD)



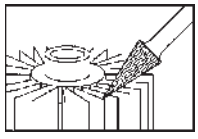
Shape: Flame (SH)



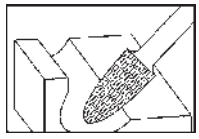
Shape: Pointed tree shape (SPG)



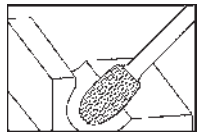
Shape: Conical shape with radius end (KEL)



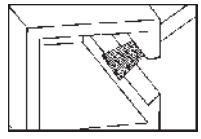
Shape: Pointed tree shape (SPG)



Shape: Tree shape with radius end (RBF)



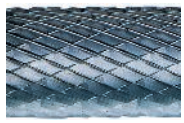
Shape: Oval (TRE)



Shape: Inverted cone (WKN)

Carbide burrs
Shank diameter: 3 mm

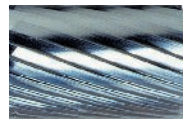
Application:
For deburring and finishing work on cast parts, roughly machined work-pieces or welding seams - can be used in hand-guided or on stationary machines.



TOOTHING 6
Staggered tooth system, universal application

Cutting speed:
450-900 m/min

Material: brass, copper, cast iron, bronze, unhardened and hardened steel, stainless steel, titanium



TOOTHING 2
Standard tooth system, universal application

Cutting speed:
400-800 m/min

Material: brass, copper, cast iron, bronze, unhardened steel, hardened steel, stainless steel, titanium

ATORN® Cemented carbide milling bit (DIN Similar to 8033)
Shank diameter: 3 mm

	Form	Cutting edge Ø x cutting edge length	Length (mm)	Serration type 6 — 76003... Ident. No.		2 — 76003... Ident. No.	
	Cylindrical	3 x 14.0 mm	38	021	●	024	●
	Cylindrical	6 x 12.0 mm	45	041	●	044	●
	Cylindrical shape with spur cut	3 x 14.0 mm	38	061	●	064	●
	Cylindrical shape with spur cut	6 x 12.0 mm	45	081	●	084	●
	Cylindrical shape	2 x 11.0 mm	38	101	●	104	●
	Cylindrical shape	3 x 12.0 mm	38	111	●	114	●
	Cylindrical shape	6 x 12.0 mm	45	121	●	124	●
	Ball shape	3 x 2.0 mm	38	141	●	144	●
	Ball shape	6 x 4.0 mm	38	151	●	154	●
	Flame configuration	3 x 6.0 mm	38	201	●	204	●
	Drop shape	3 x 6.0 mm	38	211	●	214	●
	Drop shape	6 x 10.0 mm	42	221	●	224	●
	Semicircular shape	3 x 12.0 mm	38	231	●	234	●
	Semicircular shape	6 x 12.0 mm	45	241	●	244	●
	Ogive shape	3 x 12.0 mm	38	261	●	264	●
	Ogive shape	6 x 12.0 mm	45	271	●	274	●
	Conical pointed	3 x 11.0 mm	38	281	●	284	●
	Conical pointed	6 x 12.0 mm	48	291	●	294	●
	Angle milling cutter shape	3 x 4.0 mm	38	321	●	324	●
	Cone	3 x 15.0 mm	38	371	●	374	●
	Cone	6 x 16.0 mm	48	381	●	384	●

Prod. Gr. 6CG

ATORN® Cemented carbide milling bit set (DIN Similar to 8033)
10-piece, shaft diameter 3 mm, toothing 2

Application:
For deburring and finishing work on cast parts, roughly machined workpieces or welding seams - can be used in hand-guided or on stationary machines.

Execution:
- For use with steel, stainless steel, cast iron
- Cutting speed: 450-900 m/min
- Precise spindle bearing with high concentricity required

Delivery:
1x ZYA 0313, ZYAS 0313, SKM 0311, WRC 0313, KEL 0308, SPH 0308, TRE 0306, SPG 0313, KUD 0302, RBF 0313 each, in plastic stand

Technical data:
- Number of pieces in assortment/set: 10 PCS

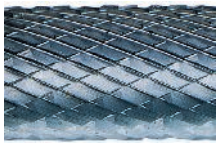


76003...	Ident. No.	921
		●

Prod. Gr. 6CG

Carbide burrs
Shank diameter 6 mm

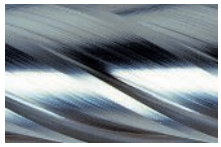
Application:
For deburring and finishing work on cast parts, roughly machined work-pieces or welding seams - can be used in hand-guided or on stationary machines.



TOOTHING 6
Staggered tooth system, universal application

Cutting speed:
450-900 m/min

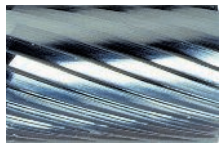
Material: brass, copper, cast iron, bronze, unhardened and hardened steel, stainless steel, titanium



ALU TOOTHING

Cutting speed:
600-960 rpm

Material: aluminium, plastics, non-ferrous metals, light metals



TOOTHING 2
Standard tooth system, universal application

Cutting speed:
400-800 m/min

Material: brass, copper, cast iron, bronze, unhardened steel, hardened steel, stainless steel, titanium

ATORN® Cemented carbide milling bit (DIN Similar to 8033)
Shank diameter 6 mm

	Form	Cutting edge Ø x cutting edge length	Length (mm)	Serration type 6 — 76006... Ident. No.		Aluminium — 76006... Ident. No.		2 — 76006... Ident. No.	
	Cylindrical shape with spur cut	6 x 18.0 mm	50	011	●	-	-	-	-
	Cylindrical shape with spur cut	8 x 20.0 mm	64	021	●	-	-	-	-
	Cylindrical shape with spur cut	10 x 20.0 mm	64	061	●	060	●	-	-
	Cylindrical shape with spur cut	12 x 25.0 mm	70	081	●	080	●	-	-
	Cylindrical	6 x 18.0 mm	50	101	●	-	-	-	-
	Cylindrical	8 x 20.0 mm	64	111	●	-	-	-	-
	Cylindrical	10 x 20.0 mm	64	121	●	120	●	-	-
	Cylindrical	12 x 25.0 mm	70	131	●	130	●	134	●
	Cylindrical shape	6 x 18.0 mm	50	201	●	-	-	-	-
	Cylindrical shape	8 x 20.0 mm	64	211	●	-	-	214	●
	Cylindrical shape	10 x 20.0 mm	64	221	●	220	●	-	-
	Cylindrical shape	12 x 25.0 mm	70	231	●	230	●	234	●
	Ball shape	6 x 5.0 mm	50	321	●	-	-	-	-
	Ball shape	8 x 7.0 mm	52	331	●	-	-	-	-
	Ball shape	10 x 9.0 mm	54	341	●	340	●	-	-
	Ball shape	12 x 10.0 mm	56	351	●	350	●	354	●
	Ball shape	15 x 14.0 mm	59	361	●	-	-	-	-
	Drop shape	6 x 1.0 mm	50	371	●	-	-	-	-
	Drop shape	10 x 15.0 mm	60	381	●	-	-	-	-
	Drop shape	12 x 20.0 mm	67	391	●	-	-	-	-
	Semicircular shape	6 x 18.0 mm	50	421	●	-	-	-	-
	Semicircular shape	8 x 20.0 mm	65	431	●	-	-	-	-
	Semicircular shape	10 x 20.0 mm	64	441	●	440	●	-	-
	Semicircular shape	12 x 25.0 mm	70	451	●	450	●	-	-
	Ogive shape	6 x 18.0 mm	50	611	●	-	-	-	-
	Ogive shape	8 x 20.0 mm	64	621	●	-	-	-	-
	Ogive shape	10 x 20.0 mm	64	631	●	-	-	-	-
	Ogive shape	12 x 25.0 mm	70	641	●	-	-	644	●
	Flame configuration	8 x 20.0 mm	64	651	●	-	-	-	-
	Flame configuration	12 x 30.0 mm	77	661	●	-	-	-	-
	Conical pointed	6 x 20.0 mm	50	711	●	-	-	-	-
	Conical pointed	10 x 20.0 mm	64	731	●	-	-	-	-
	Conical pointed	12 x 25.0 mm	71	741	●	-	-	-	-
	Cone	6 x 18.0 mm	50	761	●	-	-	-	-
	Cone	10 x 26.0 mm	76	771	●	770	●	-	-
	Cone	12 x 28.0 mm	77	781	●	780	●	-	-

Prod. Gr. 6CG

ATORN® Cemented carbide milling bit sets (DIN Similar to 8033)

Shaft diameter 6 mm, teeth 6

Application:
For deburring and finishing work on cast parts, roughly machined workpieces or welding seams - can be used in hand-guided or on stationary machines.

Execution:
- Cutting speed: 450-900 m/min
- Precise spindle bearing with high concentricity required
- **Ident. No. 920:** For use with cast iron, unhardened steel, tool steel and alloyed stainless steel
- **Ident. No. 931:** Universal application for metals of all kinds (excl. aluminium)

Advantage:
- **Ident. No. 920:** With TiAlN coating for longer service life, strength and effective manufacture

Delivery:
Ident. No. 920: 1x ZYA-S 1020, WRC 1225, RBF 1225, SPG 1020, KEL 1228 each, in plastic box
Ident. No. 931: 1x ZYA 1020, ZYA 1225, WRC 1020, WRC 1225, KEL 1230, TRE 1016, SPG 1020, SPG 1225, KUD 1210, RBF 1225 each, in plastic box



Ident. No. 920



Ident. No. 931

Number of pieces in assortment/set (PCS)		5	10
76006...	Ident. No.	920	931
		●	●

Prod. Gr. 6CG

ATORN HSS milling bits

Shank diameter 6 mm

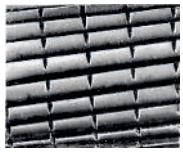
Application:
For deburring, chamfering, milling, contour milling, fettling and for welding seam machining.



TOOTHING 1:
Very rough toothing for soft materials, without chip breaker groove

Cutting speed:
200-300 m/min

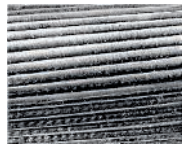
Material: Aluminium (long-chipping), light metal alloys, lead, tin, plastic materials (thermoplastics and duroplastics) fibre, rubber, wood



TOOTHING 2:
Robust plain toothing, with chip breaker groove

Cutting speed:
150-300 m/min

Material: Light metal (short-chipping), brass, copper, electrolyte, red bronze, bronze, zinc, magnesium alloy



TOOTHING 3:
Medium plain toothing, with chip breaker groove

Cutting speed:
60-180 m/min

Material: steel and steel casting, alloyed and unalloyed

ATORN® HSS milling bit

Shaft diameter 6 mm

	Form	Cutting edge Ø x cutting edge length	Length (mm)	Serration type 2		3		1	
				76001... Ident. No.		76001... Ident. No.		76001... Ident. No.	
	Ball shape	4.5 x 4.0 mm	60	222	●	223	●	-	-
	Ball shape	6.0 x 5.0 mm	60	-	-	226	●	-	-
	Ball shape	8.0 x 7.0 mm	60	232	●	233	●	231	●
	Ball shape	12.0 x 10.0 mm	60	242	●	243	●	241	●
	Ball shape	16.0 x 14.0 mm	60	252	●	253	●	251	●
	Cone with rounded end	16.0 x 30.0 mm	70	362	●	363	●	361	●
	Conical	12.0 x 30.0 mm	70	292	●	-	-	-	-
	Conical pointed	10.0 x 20.0 mm	60	152	●	153	●	-	-
	Conical pointed	6.0 x 18.0 mm	58	192	●	193	●	-	-
	Conical pointed	12.0 x 30.0 mm	70	312	●	313	●	311	●
	Cylindrical shape	6.0 x 20.0 mm	60	172	●	173	●	171	●
	Cylindrical shape	12.0 x 25.0 mm	65	322	●	323	●	321	●
	Cylindrical	10.0 x 13.0 mm	53	112	●	113	●	-	-
	Cylindrical	6.0 x 16.0 mm	56	162	●	163	●	161	●
	Cylindrical	12.0 x 25.0 mm	65	332	●	333	●	331	●
	Cylindrical	16.0 x 25.0 mm	65	342	●	343	●	341	●
	Drop shape	12.0 x 20.0 mm	60	262	●	263	●	-	-
	Ogive shape	6.0 x 18.0 mm	58	182	●	183	●	181	●
	Ogive shape	12.0 x 20.0 mm	60	272	●	273	●	-	-
	Ogive shape	12.0 x 30.0 mm	70	302	●	303	●	-	-
	Ogive shape	16.0 x 30.0 mm	70	352	●	353	●	351	●

Prod. Gr. 6CF

ATORN® Cylinder wire brushes with braided wire

For use on all commercially available angle grinders and angle polishers

Application:
For preparatory and finishing work on weld seams, for removing rust, scale, varnish, slag, rubber residues and for deburring. Ideal for use in hard-to-reach places.

Advantage:
- Long life, even with diagonal application



Ident. No. 021–061, 121–161

Version								Braided		Braided	
Edging material								Steel		Stainless steel	
Material to be processed								Steel | Cast steel		Steel | Non-ferrous metal | Aluminium	
Head Ø (mm)	Width of head (mm)	Wire Ø (mm)	Number of braids (PCS)	Connection thread	Bore Ø (mm)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)	76089... Ident. No.		76089... Ident. No.	
115	12	0.5	20	M14	-	12500	1	011	●	111	●
115	12	0.5	20	-	22.2	12500	1	021	●	121	●
125	13	0.5	20	-	22.2	12500	1	031	●	-	-
178	13	0.5	30	-	22.2	12000	1	061	●	161	●

Prod. Gr. 6CM

ATORN® Wire cup brushes with crimped or braided wire

For use on all commercially available angle grinders and angle polishers

Application:
No. 76085: For light to medium cleaning work on large surfaces and welding seams.

No. 76088: For heavy-duty cleaning work on large surfaces and welding seams.



No. 76085 007



No. 76088 066

Version						Corrugated		Braided	
Edging material						Steel		Steel	
Material to be processed						Steel | Cast steel | Softwood | Hardwood		Steel | Cast steel | Softwood | Hardwood	
Head Ø (mm)	Number of braids (PCS)	Connection thread	Wire Ø (mm)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)	76085... Ident. No.		76088... Ident. No.	
60	0	M14	0.3	12500	1	007	●	-	-
100	0	M14	0.3	8500	1	011	●	-	-
65	18	M14	0.5	12500	1	-	-	066	●
80	22	M14	0.5	8500	1	-	-	111	●
100	26	M14	0.5	8500	1	-	-	121	●

Prod. Gr. 6CM

ATORN® Conical brushes with wire braided anti-clockwise

For use on all commercially available angle grinders and angle polishers

Application:
For use in hard-to-reach places. For preparatory and finishing work on weld seams, for removing rust, scale, varnish, slag, rubber residues and for deburring.

Advantage:
- Long life, even with diagonal application

Technical data:
- Number of braids: 18 PCS
- Connection thread: M14
- Wire diameter: 0.5 mm
- Max. rotation speed: 12500 U/min(rpm)
- Number of pieces per packet: 1 PCS



Ident. No. 081–091, 191

Version		Braided		Braided	
Edging material		Steel		Stainless steel	
Material to be processed		Steel | Cast steel | Softwood | Hardwood		Stainless steel | Non-ferrous metal | Aluminium	
Head Ø (mm)	Width of head (mm)	76089... Ident. No.		76089... Ident. No.	
100	13	081	●	181	●
115	15	091	●	191	●

Prod. Gr. 6CM

ATORN® Cylinder wire brushes with braided or crimped wire

For bench grinder

Application:
No. 76092–76093: For removing rust and scale and for grinding.
No. 76094: For heavy demands and heavy-duty brush work, for removing rust and scale, for grinding and roughing, for removing varnish and for machining weld seams and stone.

Execution:
- **No. 76092–76093:**
  - Steel pipe body with pressed ring and outer flange
  - With particularly dense material filling

Notes:
No. 76092–76093: Art. 76092 with 32 mm drill hole includes 7-piece adapter set: reduction to drill hole: 13 / 15 / 16 / 19 / 20 mm or 7/8" / 1



No. 76092–76093



No. 76094

Version						Corrugated		Corrugated		Braided	
Edging material						Steel		Stainless steel		Steel	
Material to be processed						Steel | Cast steel | Softwood | Hardwood		Stainless steel | Non-ferrous metal | Aluminium		Steel | Cast steel | Softwood | Hardwood	
Head Ø (mm)	Wire Ø (mm)	Number of braids (PCS)	Bore Ø (mm)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)	76092... Ident. No.		76093... Ident. No.		76094... Ident. No.	
80	0.3	0	10	10000	1	081	●	081	●	-	-
100	0.3	0	10	8000	1	101	●	101	●	-	-
150	0.3	0	32	6000	1	151	●	-	-	-	-
178	0.3	0	32	6000	1	176	●	-	-	-	-
200	0.3	0	32	4500	1	201	●	-	-	-	-
150	0.3	0	14	6000	1	-	-	151	●	-	-
178	0.3	0	14	6000	1	-	-	176	●	-	-
200	0.3	0	20	4500	1	-	-	201	●	-	-
100	0.5	40	20	11000	1	-	-	-	-	101	●
200	0.5	102	25.4	8500	1	-	-	-	-	201	●

Prod. Gr. 6CM

ATORN® Shaft-mounted cylinder wire brushes with crimped wire

Shaft diameter 6 mm, for use on fast-running machines

Application:
For roughing, deburring, paint stripping, de-scaling, matting and cleaning.

Technical data:
- Number of braids: 0 PCS
- Number of pieces per packet: 5 PCS



Ident. No. 011–041, 061–171



Ident. No. 051

Version				Corrugated		Corrugated		Corrugated	
Edging material				Steel		Brass		Stainless steel	
Material to be processed				Steel | Cast steel | Softwood | Hardwood		Brass | Softwood		Stainless steel | Non-ferrous metal | Aluminium	
Head Ø (mm)	Width of head (mm)	Wire Ø (mm)	Max. rotation speed (U/min(rpm))	76090... Ident. No.		76090... Ident. No.		76090... Ident. No.	
20	4	0.15	20000	011	●	021	●	-	-
30	6	0.15	20000	031	●	-	-	-	-
40	11	0.20	18000	041	●	051	●	141	●
50	17	0.20	15000	061	●	-	-	-	-
70	18	0.30	15000	071	●	081	●	171	●
20	4	0.20	20000	-	-	-	-	111	●
30	9	0.20	20000	-	-	-	-	131	●
50	10	0.30	15000	-	-	-	-	161	●

Prod. Gr. 6CM

ATORN® Shaft-mounted cylinder wire brushes with braided wire

Shaft diameter 6 mm, for use on fast-running machines

Application:
For machining weld seams, removing hard scale, slag, underbody sealing, sand residues and for deburring.

Execution:
- With plaited wire (number of plaits: 15)

Technical data:
- Head diameter: 75 mm
- Wire diameter: 0.50 mm
- Number of braids: 15
- Max. rotation speed: 20000 U/min(rpm)
- Number of pieces per packet: 5 PCS



Ident. No. 091



Ident. No. 181

Version	Braided		Braided	
Edging material	Steel		Stainless steel	
vvMaterial to be processed	Steel | Cast steel | Softwood | Hardwood		Stainless steel | Non-ferrous metal | Aluminium	
Width of head (mm)	76090... Ident. No.		76090... Ident. No.	
13	091	●	-	-
12	-	-	181	●

Prod. Gr. 6CM

ATORN® Shaft-mounted cylinder wire brushes with silicon carbide sanding bristles

Shaft diameter 6 mm, for use on fast-running machines



Application:
For deburring, rounding edges and surface finishing, and for processing stamped, turned, milled and drilled tool parts.

Advantage:
- Optimal adaptation to irregular surfaces due to nylon fibres
- High elasticity without risk of breakage paired with a long service life

Notes:
Due to the effect of heat on the plastic brushes, the speed is limited to a cutting speed of 18 m/sec.

Technical data:
- Number of braids: 0 PCS
- Max. rotation speed: 15000 U/min(rpm)
- Number of pieces per packet: 5 PCS

		Version	Corrugated		Corrugated	
		Edging material	Nylon with SiC grain 180		Nylon with SiC grain 320	
		Material to be processed	Steel | Stainless steel | Non-ferrous metal | Aluminium | Wood		Stainless steel | Non-ferrous metal | Steel | Wood	
Head Ø (mm)	Width of head (mm)	Wire Ø (mm)	76091... Ident. No.		76091... Ident. No.	
50	15	0.90	011	●	-	-
70	18	0.90	021	●	-	-
50	15	0.55	-	-	031	●
70	18	0.55	-	-	041	●

Prod. Gr. 6CM



ATORN® Wire end brushes with crimped wire

Shaft diameter 6 mm, for use on fast-running machines

Application:
For removing burrs, rust, slag, scale, rubber residues, incineration residues and other impurities from places that are difficult to access and from inner surfaces.



Ident. No. 201



Ident. No. 111

						Edging material	Steel		Stainless steel	
						Material to be processed	Steel | Cast steel | Softwood | Hardwood		Stainless steel | Non-ferrous metal | Aluminium	
Head Ø (mm)	Length of bristles (mm)	Length (mm)	Wire Ø (mm)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)		76095... Ident. No.		76095... Ident. No.	
10	20	40	0.50	20000	5		201	●	-	-
10	20	100	0.30	20000	5		211	●	-	-
17	25	45	0.50	18000	5		221	●	-	-
25	25	50	0.50	18000	5		231	●	-	-
30	25	45	0.50	15000	5		241	●	-	-
10	20	40	0.30	20000	5		-	-	101	●
11	20	100	0.30	9000	5		-	-	111	●

Prod. Gr. 6CM

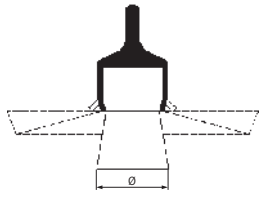
ATORN® Wire end brushes with braided wire

Shaft diameter 6 mm, for use on fast-running machines

Application:
For precise machining in hard-to-reach places and on inner surfaces, also particularly suitable for cleaning the inside of cylindrical bores.

Advantage:
- Variable outer diameter: due to the centrifugal force produced, the brush opens or closes as the working speed changes
- High flexibility and high cleaning efficiency





							Edging material	Steel		Stainless steel	
							Material to be processed	Steel | Cast steel		Stainless steel | Non-ferrous metal | Aluminium	
Head Ø (mm)	Length of bristles (mm)	Length (mm)	Wire Ø (mm)	Number of braids (PCS)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)		76096... Ident. No.		76096... Ident. No.	
20	29	44	0.25	6	20000	5		111	●	011	●
23	29	44	0.35	8	20000	5		121	●	021	●
30	29	44	0.35	12	20000	5		131	●	031	●

Prod. Gr. 6CM

ATORN® Wire end brushes with crimped stranded wire

Shaft diameter 6 mm, for use on fast-running machines

Application:
For roughening, deburring, stripping paint or removing burrs, rust and combustion residues in hard-to-reach places in steel machining.

Execution:
- 3-4 brass-plated steel wires with single wire diameters of 0.2 mm twisted into rope construction
- Spring hard and tough

Notes:
Not suitable for VA machining.



					Edging material		Steel	
					Material to be processed		Steel | Wood	
Head Ø (mm)	Length of bristles (mm)	Length (mm)	Wire Ø (mm)	Number of braids (PCS)	Max. rotation speed (U/min(rpm))	Number of pieces per packet (PCS)	76097... Ident. No.	
11	20	40	0.20	0	20000	5	121	●
16	25	45	0.20	0	20000	5	171	●
22	25	45	0.20	0	18000	5	241	●
28	30	45	0.20	0	15000	5	301	●

Prod. Gr. 6CM

ATORN® Abrasive flap disc – high-quality and suitable for universal use

with zirconia alumina, tool carrier made of fibre glass, for steel/stainless steel

Application:
Ident. No. 541, 561, 581, 641, 651, 661, 681: for deburring, removing rust, fettling and for preparatory and finishing work on weld seams.
Ident. No. 546, 566, 586, 646, 656, 666, 686: for smoothing, removing rust, grinding and similar surface applications.

Execution:
- free from iron and sulphur

Advantage:
- high cutting performance for more material removal
- with OSA approval – greater safety due to regular independent product tests

Technical data:
- Bore diameter: 22.23 mm
- Number of pieces per packet: 10 PCS



Ident. No. 541, 561, 581, 641, 651, 661, 681

Washer Ø (mm)			115	115	115	125	125	125	125
Max. rotation speed (U/min(rpm))			13285	13285	13285	13285	12250	12250	12250
Grain size			40	60	80	40	50	60	80
	Form								
76084...	Diagonal	Ident. No.	541	561	581	641	651	661	681
			●	●	●	●	●	●	●
76084...	Straight	Ident. No.	546	566	586	646	656	666	686
			●	●	●	●	●	●	●

Prod. Gr. 6CH

ATORN® Abrasive flap disc – for extreme sanding work

With self-sharpening ceramic abrasive grain, tool carrier made of fibre glass

Application:
Ideal for extreme sanding work or special processing tasks on high-alloy steels, titanium alloys, nickel-based alloys, chrome steel and chrome-nickel steel, brass or bronze.

Execution:
- Cool grinding on surfaces and edges

Advantage:
- Self-sharpening ceramic abrasive grain for permanently high material removal
- Full synthetic resin bond with grinding additives for high wear resistance
- With OSA approval - greater safety due to regular independent product tests

Technical data:
- Bore diameter: 22.23 mm
- Number of pieces per packet: 10 PCS



Washer Ø (mm)			115	115	115	125	125	125
Max. rotation speed (U/min(rpm))			13300	13300	13300	12200	12200	12200
Grain size			40	60	80	40	60	80
	Form							
76084...	Diagonal	Ident. No.	205	210	215	305	310	315
			●	●	●	●	●	●

Prod. Gr. 6CH

ATORN® High-performance abrasive flap disc with easy-to-trim plastic backing

With zirconia alumina, for stainless steel/steel/cast iron

Application:
For universal use for steel, cast iron and stainless steel For surface and edge sanding, coarse and intermediate sanding, processing fillet welds, derusting, deburring and dressing cast parts

Advantage:
- Food-safe ABS special plastic backing for vibration-dampened work
- Backing can also be machined - no glass dust particles produced

Technical data:
- Bore diameter: 22.23 mm
- Number of pieces per packet: 10 PCS



Washer Ø (mm)			115	115	115	115	125	125	125	125
Max. rotation speed (U/min(rpm))			13200	13200	13200	13200	11800	11800	11800	11800
Grain size			40	60	80	120	40	60	80	120
	Form									
76084...	Diagonal	Ident. No.	704	706	708	712	724	726	728	732
			●	●	●	●	●	●	●	●

Prod. Gr. 6CH

ATORN® Abrasive flap disc – for universal sanding work on steel and VA steel

With high-tech zirconia fabric, tool carrier made from high-tech natural fibre

Application:
For deburring, removing rust, fettling and for preparatory and finishing work on weld seams.

Execution:
- Backing disc can be fully trimmed; fully usable disc

Advantage:
- Natural fibre backing disc for flexible, low-vibration work
- Fibre glass and resin-free - self-trimming
- Backing disc made from natural fibre compound protects the environment and the user (CO2 neutral)

Technical data:
- Bore diameter: 22.23 mm
- Number of pieces per packet: 10 PCS



Washer Ø (mm)			115	115	115	115	125	125	125	125
Max. rotation speed (U/min(rpm))			13200	13200	13200	13200	12200	12200	12200	12200
Grain size			40	60	80	120	40	60	80	120
	Form									
76084...	Diagonal	Ident. No.	600	601	602	603	604	605	606	607
			●	●	●	●	●	●	●	●

Prod. Gr. 6CH

ATORN® Abrasive fleece hand pads and rolls

for smoothing, matting, roughing, removal of dirt, corrosion and other impurities

Application:
Ident. No. 005–010: For smoothing, roughing, light sanding, de-greasing and cleaning surfaces, light deburring and removal of dirt and corrosion.
Ident. No. 105–110: For smoothing, dulling, roughening, de-greasing and cleaning surfaces, light deburring and removal of dirt and corrosion.

Execution:
- Accessories: Hand block with integrated barbed hooks no. 69296 090

Advantage:
- Smooth cutting with high flexibility
- Long service life and optimal grinding results thanks to the uniform fibre structure



Ident. No. 005–010



Ident. No. 105–110
Fleece abrasive roller

					Hand pads		Abrasive roll	
				Type description	Abraflex		Abraflex	
				Length x width	210 x 150 mm		10000 x 115 mm	
Material of abrasive medium	Surface structure	Grid size	Colour	Number of pieces per packet (PCS)	69297... Ident. No.		69297... Ident. No.	
Aluminium oxide	Rough	280	Blue	10	005	●	-	-
Silicon carbide	Fine	1200	Grey	10	010	●	-	-
Aluminium oxide	Rough	280	Blue	1	-	-	105	●
Silicon carbide	Fine	1200	Grey	1	-	-	110	●

Prod. Gr. 6CH

ATORN® Diamond and CBN (cubic boron nitride) cup wheels

Grain 126, for use on all standard grinding machines

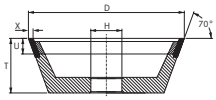
Application:
For grinding cemented carbide and Cermet as well as materials made of stone, glass, porcelain, graphite, GFP, etc.

Execution:
- With vibration-reducing body
- In synthetic resin bonding

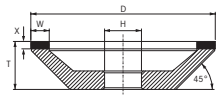
Advantage:
- Maximum service life with consistently high removal rate

Notes:
Wet grinding is always preferable with regard to tool life, heat generation and performance.

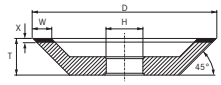




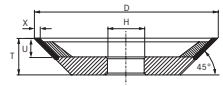
Ident. No. 010
Type 11V9



Ident. No. 020
Type 12A2



Ident. No. 030
Type 12V2



Ident. No. 040
Type 12V9

						Material of abrasive medium		Diamond	
Form	Washer Ø (mm)	Bore Ø (mm)	Washer thickness (mm)	Wall thickness (mm)	Lining thickness (mm)	Min./max. recommended peripheral surface speed for dry sanding	Min./max. recommended peripheral surface speed for wet sanding	60197... Ident. No.	
11V9	100	20	35	10	3	15-20 m/s	25-30 m/s	010	●
12A2	100	20	26	10	4	15-20 m/s	25-30 m/s	020	●
12V2	100	20	20	10	2	15-20 m/s	25-30 m/s	030	●
12V9	100	20	20	10	3	15-20 m/s	25-30 m/s	040	●

Prod. Gr. 696

Mains-operated power tools



Sabre saws and sabre saw blades

Pneumatic tools and accessories



Blowing spray guns and cleaning guns

ATORN® Sabre saw blades for metal and wood

for the following brands BOSCH, AEG, FEIN, METABO (for FLEX all models except SR 602 VV)

Advantage:
- For extremely heavy loads
- Highly flexible
- Long service life

Delivery:
1 pack of 5

Technical data:
- Cutting material: Bimetal
- Included in delivery: 5 pcs.

Corresponds to BOSCH type		S 922 BF	S 922 EF	S 922 AF	S 1122 BF	S 1122 EF	S 1022 VF	S 1211 H	-
Saw blade design		Restricted | Milled	Corrugated | Milled	Corrugated | Milled	Restricted | Milled	Corrugated | Milled	Restricted | Milled	Restricted | Milled	Restricted | Milled
Length (mm)		150	150	150	200	200	200	300	300
Teeth spacing (mm)		1.8	1.4	1.0	1.8	1.4	-	2.5	-
Min./max teeth spacing		-	-	-	-	-	1.8-2.4 mm	-	1.8-2.4 mm
Cut		Fast, straight cut	Straight cut	Fine cut	Fast, flush cut	Flush cut	-	-	-
Applications		Sheet metals (3-8 mm) | Solid pipes (Ø 10-100 mm) | Solid profiles (Ø 10-100 mm)	Sheet metals (1.5-4 mm) | Pipes (Ø 5-100 mm) | Profiles (Ø 5-100 mm)	Sheet metals (0.7-3 mm) | Fine pipes (Ø 5-10 mm) | Fine profiles (Ø 5-10 mm)	Sheet metals (3-8 mm) | Solid pipes (Ø 10-175 mm) | Solid profiles (Ø 10-175 mm)	Sheet metals (1.5-4 mm) | Pipes (Ø 5-175 mm) | Profiles (Ø 5-175 mm)	St 37 | Non-ferrous metals | Stainless steel | Steel tubes | V2A | Cast iron (3-8 mm)	St 37 | Non-ferrous metals | Profiles | Steel tubes | Steel tubes | Insulating material (3-10 mm)	St 37 | Non-ferrous metals | Cast-iron pipes (Ø 3-8 mm) | Steel pipes (Ø 3-8 mm) | Pallet construction
71134...	Ident. No.	**010**	**020**	**030**	**040**	**050**	**060**	**070**	**080**
		●	●	●	●	●	●	●	●

Prod. Gr. 793

ATORN® Jigsaw blades for metal, aluminium, wood and plastic

for the following brands BOSCH, Makita, Metabo, AEG, DeWALT, FESTOOL, FLEX, HOLZ-HER, Milwaukee

Delivery:
1 pack of 20 pieces

Technical data:
- Included in delivery: 20 pcs.



Corresponds to BOSCH type		T 101 B	T 118 A	T 118 B	T 127 D	T 118 AF
Cutting material		HCS	HSS	HSS	HSS	Bimetal
Teeth spacing (mm)		2.5	1.2	2.0	3.0	1.2
Length (mm)		75	50	50	75	50
Saw blade design		Ground (HCS)	Corrugated (HSS)	Corrugated (HSS)	Straight-set (HSS)	Corrugated (bimetal)
Cut		-	Straight cut	Straight cut	Straight, fast cut	Straight cut
Applications		Softwood | Chipboard (3-30 mm) | Core boards (3-30 mm) | Fibreboard (3-30 mm) | Plastics (Ø < 30 mm) | Epoxy (Ø < 30 mm)	Sheet metals (1-3 mm)	Sheet metals (2.5-6 mm)	Sheet metals (3-15 mm) | Pipes (Ø < 30 mm) | Profiles (Ø < 30 mm)	Sheet metals (1-3 mm)
71130...	Ident. No.	**010**	**110**	**120**	**130**	**210**
		●	●	●	●	●

Prod. Gr. 793

ATORN® Jigsaw blades sets for metal and wood

for the following brands BOSCH, Makita, Metabo, AEG, DeWALT, FESTOOL, FLEX, HOLZ-HER, Milwaukee

Execution:
- **Ident. No. 410:** Consisting of: 8 x coarse and fast (T 144 D), 8 x fine and clean (T 101 B), 4 x curve (T 119 BO)
- **Ident. No. 510:** Consisting of: 8 x fine (T 118 A), 8 x medium (T 118 B), 4 x coarse (T 127 D)

Advantage:
- HCS hard carbon steel for extreme cutting stability

Suitable for		Metal	Wood
Saw blade design		Straight-set (HSS) | Milled	Ground (HCS) | Restricted
Number of pieces in assortment/set (PCS)		20	20
71130...	Ident. No.	**510**	**410**
		●	●

Prod. Gr. 793



Ident. No. 410



Ident. No. 510

ATORN® Pneumatic blow-out guns - compressed air connection at the bottom

Forged aluminium, silver anodised

Application:
For cleaning workpieces, machine parts and the like.

Execution:
- Airflow can be regulated roughly by actuation lever
- Valve head made of oil-resistant special rubber
- Air jacket nozzle for eye protection with 8 laterally exiting nozzle bores
- Safety nozzle for noise reduction by approx. 25 dB

Delivery:
In box

Notes:
Standard nozzle (ref. no. 060-200): nozzle can be extended up to 5 mm

Technical data:
- Connection thread: G 1/4 inch
- Nozzle connection thread: M12 x 1.25



No. 75175 060–75175 200
Image with standard nozzle



No. 75175 210–75177 130
Image: straight version



Image with air jacket nozzle



Image with safety nozzle

			Hose nozzle		Hose nozzle		Hose nozzle		Plug-in nipple	
		Nozzle design	With normal nozzle		With safety nozzle		With air sheathed air nozzle		With normal nozzle	
Max. working pressure (bar)	Inner hose Ø (mm)	Nozzle size (mm)	75175... Ident. No.		75177... Ident. No.		75176... Ident. No.		75175... Ident. No.	
-	6	1.5	060	●	060	●	060	●	-	-
-	9	1.5	090	●	090	●	090	●	-	-
-	13	1.5	130	●	130	●	-	-	-	-
10	-	1.5	-	-	-	-	-	-	200	●
8	-	2.0	-	-	-	-	-	-	210	●

Prod. Gr. 790

ATORN® Pneumatic blow-out guns - compressed air connection at the top

Forged aluminium, silver anodised

Application:
For cleaning workpieces, machine parts and similar.

Execution:
- Continuously variable flow of air (via lever)
- Standard nozzle
- Compressed air connection on top (coupling connector DN 7.2)

Advantage:
- Compressed air connection possible via a suspended power supply unit

Technical data:
- Max. working pressure: 10 bar
- Connection thread: G 1/4 inch
- Nozzle size: 1.5 mm
- Nozzle connection thread: M12 x 1.25



Connection on top

75178...	Ident. No.	300 ●

Prod. Gr. 790

ATORN® Nozzles for blow-out guns

Connecting thread: M12 x 1.25

Application:
No. 75177 140: For pneumatic blow-out gun no. 75177
No. 75177 145: For noise reduction and safe handling of compressed air
No. 75177 200: As a replacement for pneumatic blow-out gun no. 75175
No. 75178: For pneumatic blow-out gun no. 75174-75177

Execution:
- **No. 75177 140:** With sintered insert
- **No. 75177 145:**
  - Satisfies OSHA requirements
  - In line with TRLV-LÄRM (German occupational safety directive on noise and vibration)
  - Conforms to EC machine directive
- **No. 75178 020:** Low noise

Technical data:
- Nozzle connection thread: M12 x 1.25



No. 75177 140



No. 75177 145



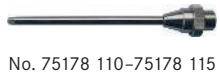
No. 75177 200



No. 75178 015



No. 75178 020



No. 75178 110–75178 115

	Type	Form	Length (mm)		
75177...	Noise control nozzle			Ident. No.	140 ●
75177...	Safety nozzle			Ident. No.	145 ●
75177...	Aluminium standard nozzle			Ident. No.	200 ●
75178...	Extension nozzle	Curved	160	Ident. No.	015 ●

	Type	Form	Length (mm)		
75178...	Extension nozzle	Straight	115	Ident. No.	110 ●
75178...	Extension nozzle	Straight	165	Ident. No.	115 ●
75178...	Safety extension nozzle	Curved	110	Ident. No.	020 ●

Prod. Gr. 790

ATORN® Compressed air spray gun

With pivoting nozzle

Application:
For spraying low-viscosity media such as oils.

Execution:
- Matte translucent plastic cup (container volume approx. 0.7 l)
- Jet adjustable with nozzle

Technical data:
- Max. working pressure: 6 bar
- Nozzle size: 3 mm
- Weight: 0 kg



75201...	Ident. No.	010 ●

Prod. Gr. 790

ATORN® Safety clutch

With push-button actuation

Application:
For connecting hoses to pneumatic tools and pneumatic machines with push-button actuation.

Execution:
- **Material:**
- - Connection piece galvanised steel
- - Housing: Anodised aluminium
- - plug: Hardened and galvanised steel
- - seals: NBR
- - springs/balls: stainless steel
- silicone-free
- REACH and RoHs compliant
- Level 1: By pressing the push-button once, the coupling is bled while the plug remains secured in the sleeve.
- Level 2: If the push-button is pressed a second time, the plug is unlocked and can be removed hazard-free.

Advantage:
- Particularly characterised by strength and compatibility
- High flow values with DN 7.4
- Reliably prevents whiplash effect when decoupling and provides increased safety in the workplace

Technical data:
- DN nominal width: DN 7,4
- Flow capacity: 1800 l/min
- Max. working pressure: 16 bar
- Min. working pressure: 1 bar
- Min./max. temperature resistance: -20 to +100 °C



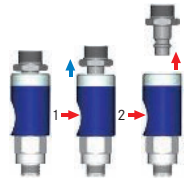
Ident. No. 026, 431–436



Ident. No. 406, 421



Ident. No. 441–461



Actuation steps

Type	male thread	male thread	male thread	internal thread	internal thread	internal thread	hose connection	hose connection
Connection thread	G 1/4 inch	G 3/8 inch	G 1/2 inch	G 1/4 inch	G 3/8 inch	G 1/2 inch	-	-
Inner hose Ø (mm)	-	-	-	-	-	-	6	8
Thread length (mm)	8	8	10	8	10	10	-	-
Length (mm)	70.5	70.5	74.5	68	68	71	86.5	86.5
Width across flats	21 mm	21 mm	24 mm	21 mm	21 mm	24 mm	19 mm	19 mm
75424... Ident. No.	406 ●	416 ●	421 ●	026 ●	431 ●	436 ●	441 ●	446 ●

Type	hose connection	hose connection	hose connection
Connection thread	-	-	-
Inner hose Ø (mm)	9	10	13
Thread length (mm)	-	-	-
Length (mm)	86.5	86.5	86.5
Width across flats	19 mm	19 mm	19 mm
75424... Ident. No.	451 ●	456 ●	461 ●

Prod. Gr. 790