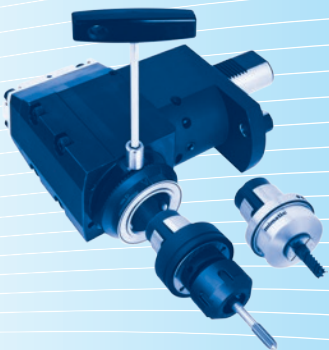


# mimatic®

T o o l S y s t e m s

2014/2015



Manufacturer of Precision Tools since 1974

INNOVATION · PRECISION · INDIVIDUALITY · QUALITY · SERVICE



# mimatic®

T o o l   S y s t e m s

## mimatic® GmbH

Westendstraße 3

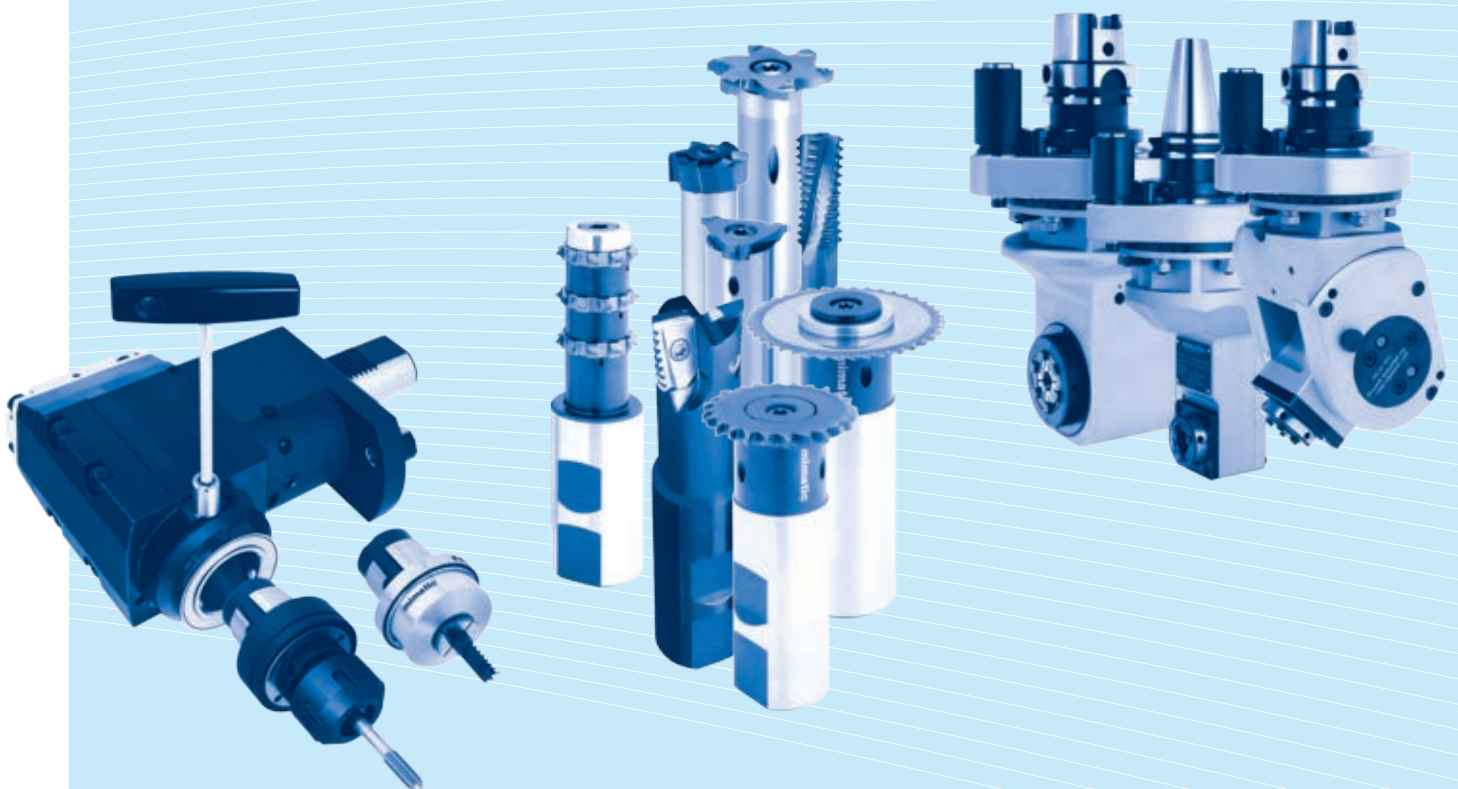
D-87488 Betzigau

☎ +49 (0) 831 / 57444-0

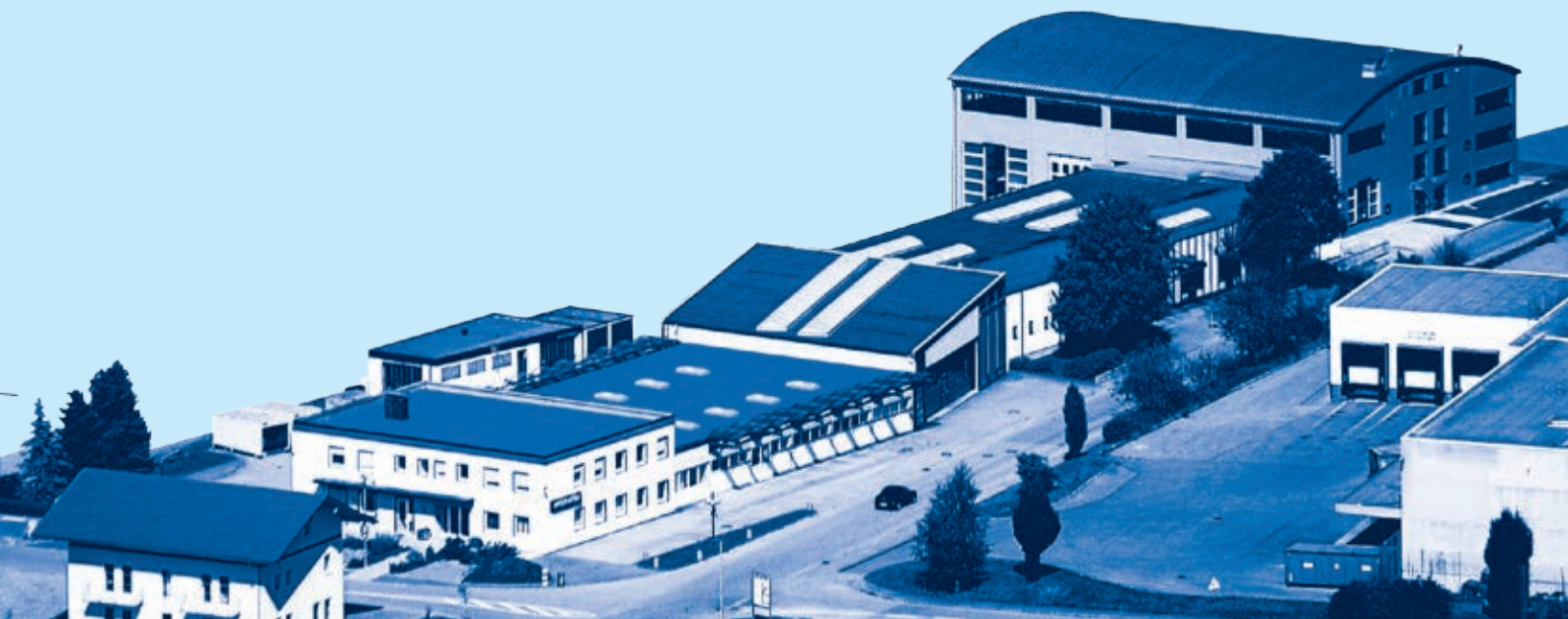
📠 +49 (0) 831 / 57444-90

✉ info@mimatic.de

🌐 www.mimatic.de



## Our Company



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

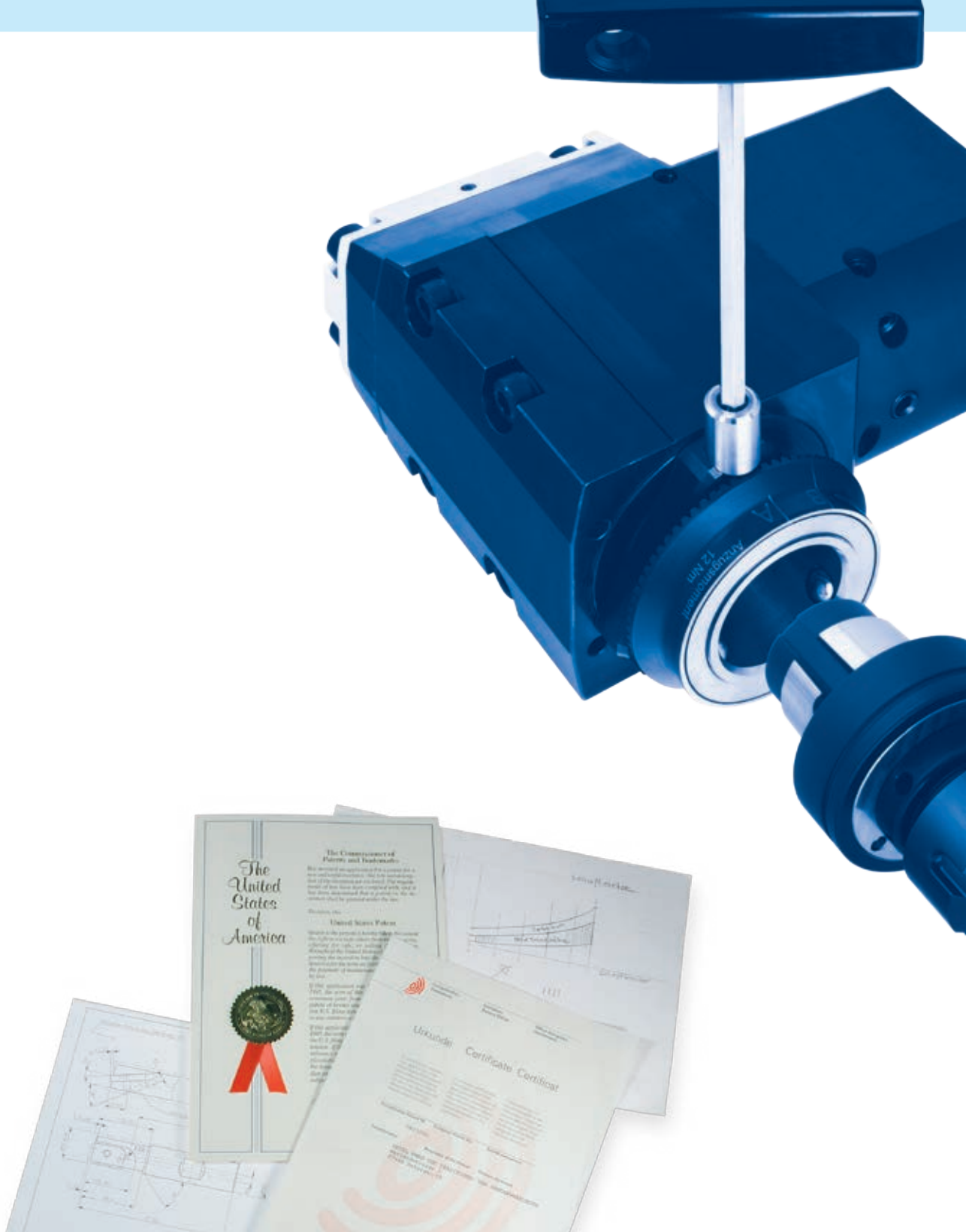
## DRIVEN TOOLS

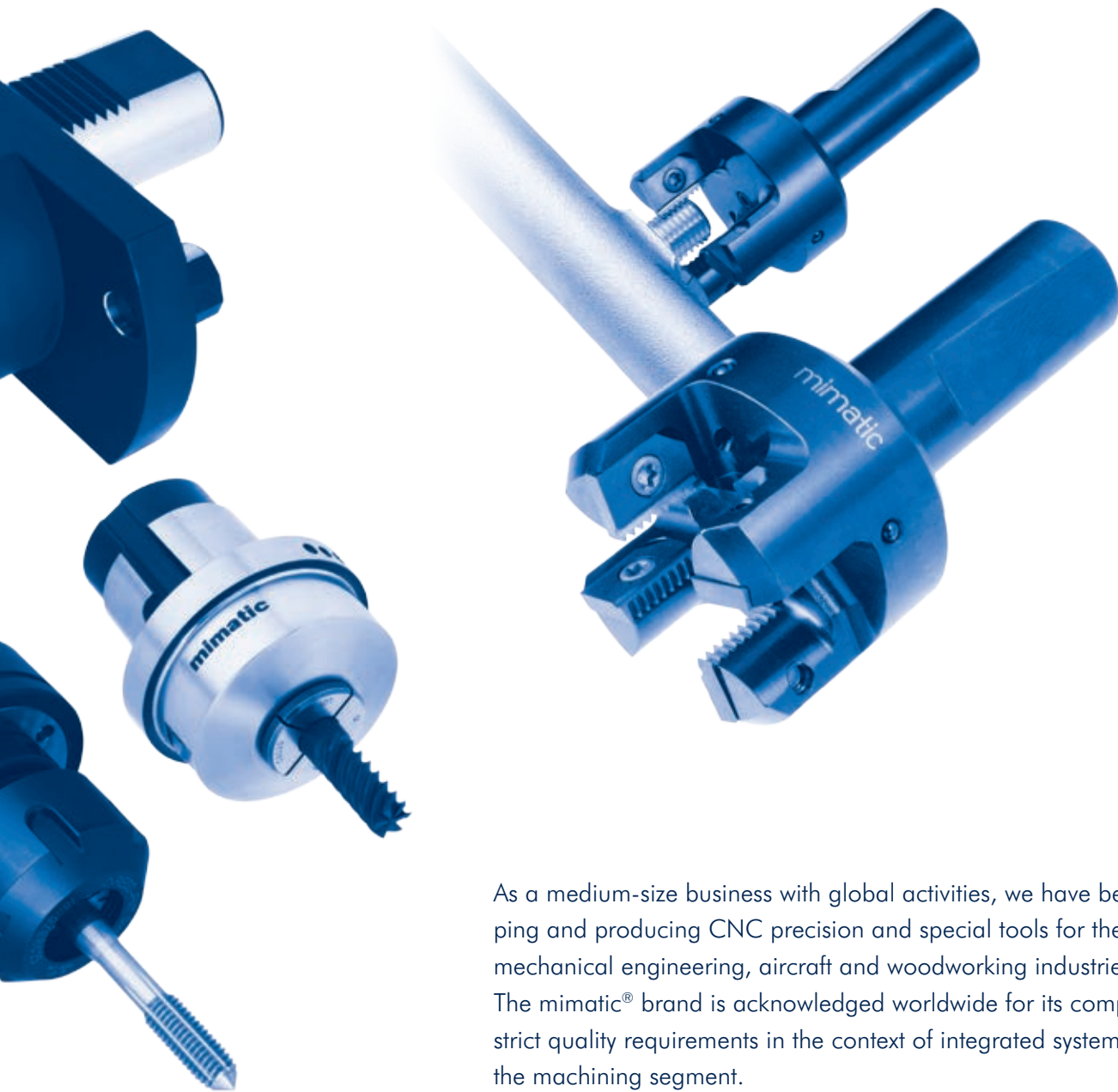
<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

# Innovation





As a medium-size business with global activities, we have been developing and producing CNC precision and special tools for the automotive, mechanical engineering, aircraft and woodworking industries since 1974. The mimitic<sup>®</sup> brand is acknowledged worldwide for its compliance with strict quality requirements in the context of integrated system solutions for the machining segment.

Every day the highly qualified and motivated labor force accepts the challenges engendered by customized production needs. Our own quality objectives are met by the exclusive use of state-of-the-art technology, CAD/CAM and computerized logistics.

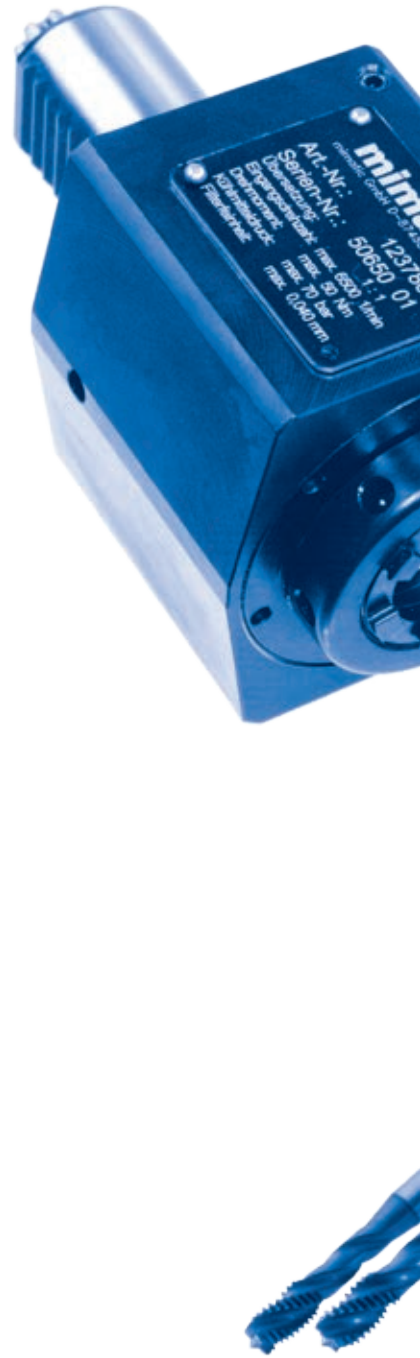
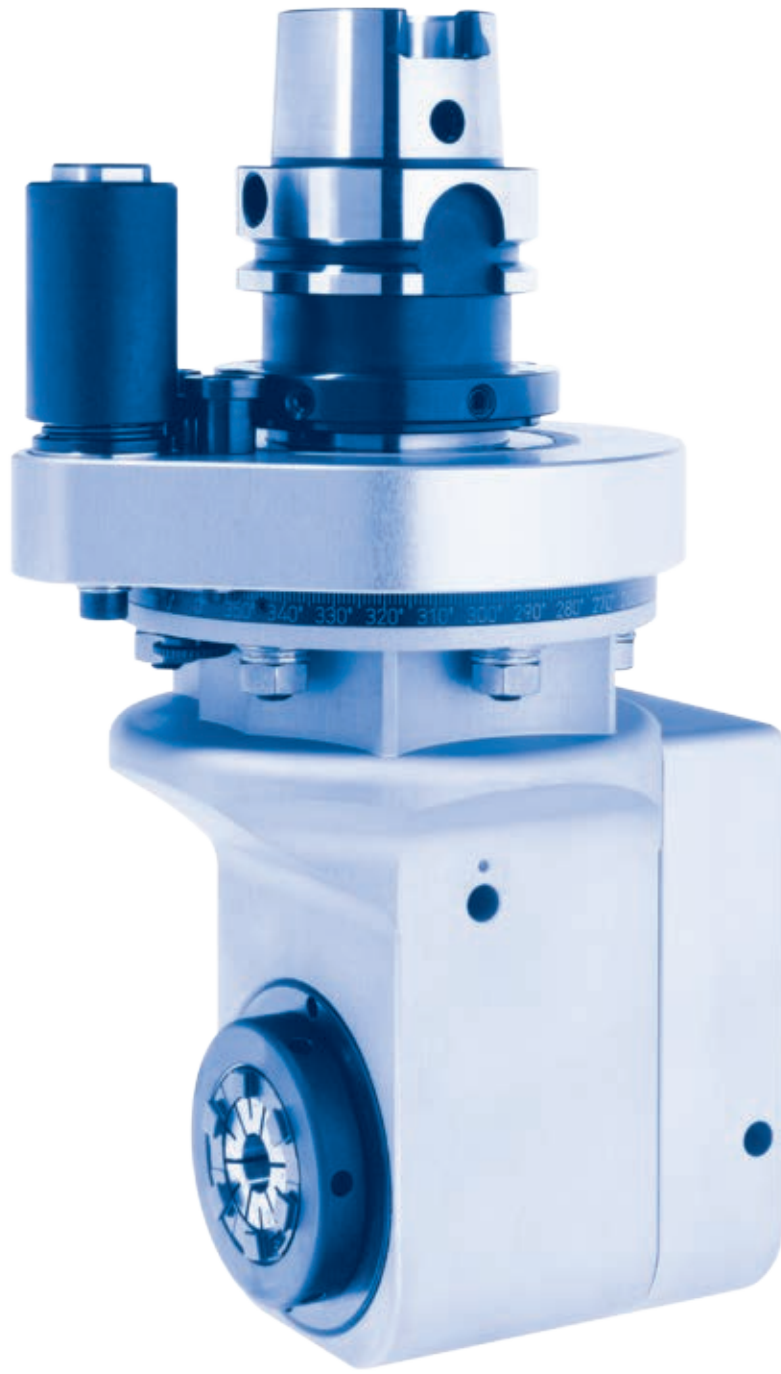


mimatic Inc. (USA)



mimatic (China)

# Productivity





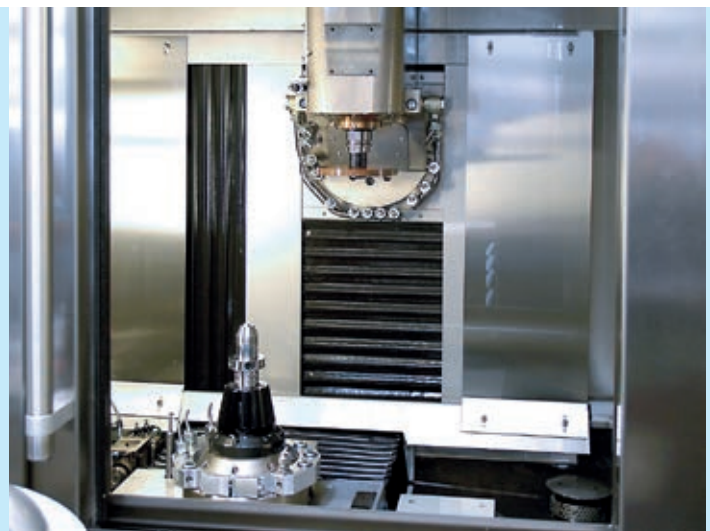
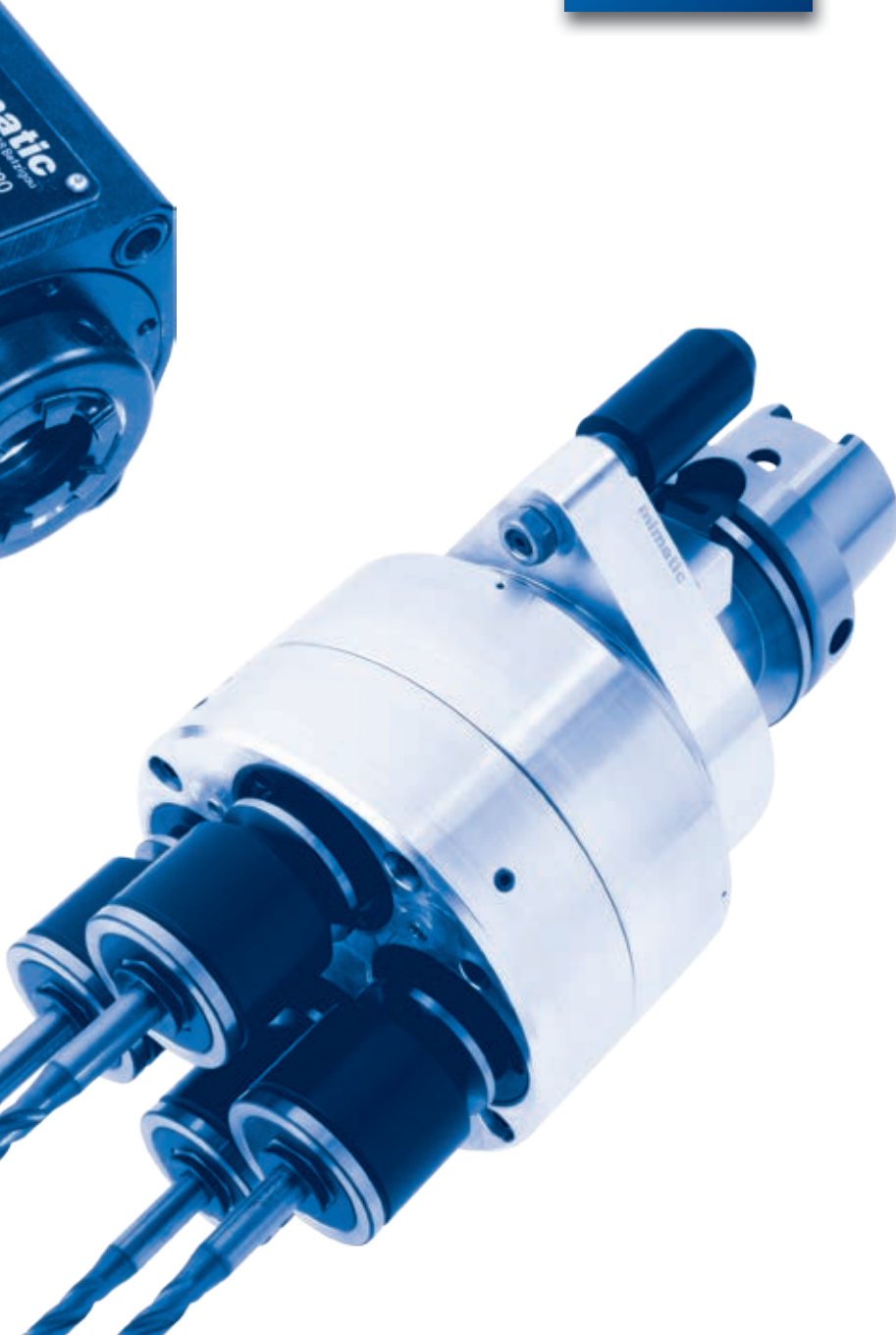
**Allgäu**<sup>®</sup>

The Allgäu Region of Bavaria reputation reaches beyond its borders, because of its natural beauty, undisturbed nature and idyllic landscapes. It is also well known for its Industrial Power and Innovative thinking.

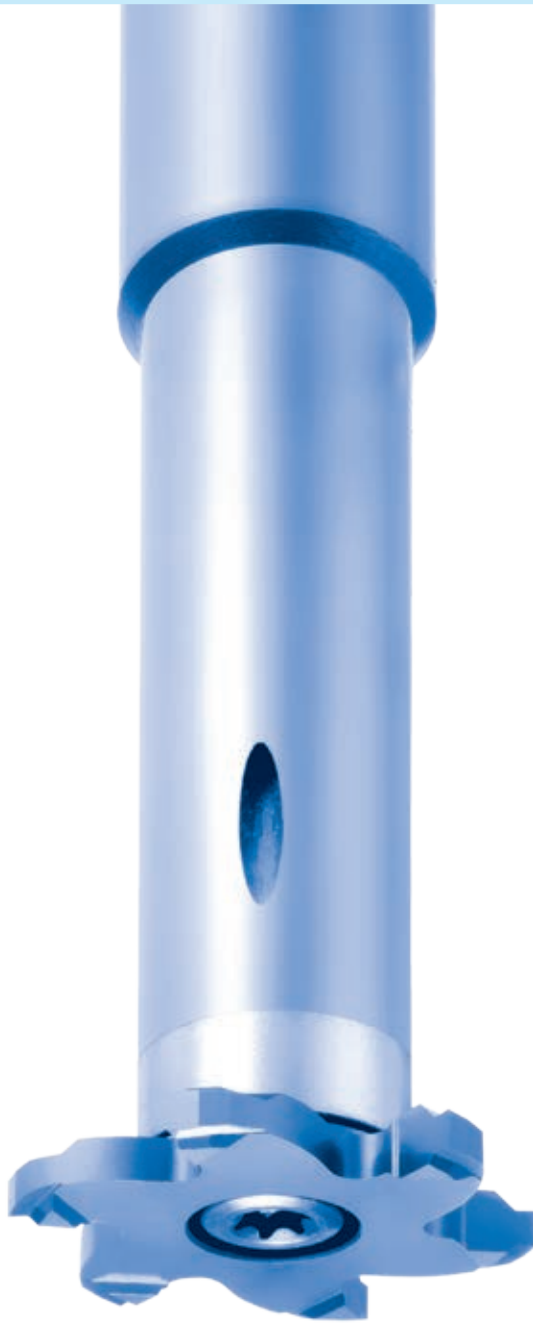
The newly launched, „Allgäu“ Brand, is a quality standard given to Companies that have a high Innovative Development with continued high standards.

mimatic has achieved these quality standards and is one of the first Companies to be presented with the „Allgäu“ Brand.

mimatic is one of the largest industrial companies located in the Allgäu region with one of the most modern production facilities.



# Individuality



The unique design principle of the mimatic<sup>®</sup> circular and thread milling cutters gives rise to efficient machining.

They allow the simple production of exact recesses for O-rings and circlip grooves to DIN standards, true-to-gauge internal and external threads, as well as ring grooves and T-slots.



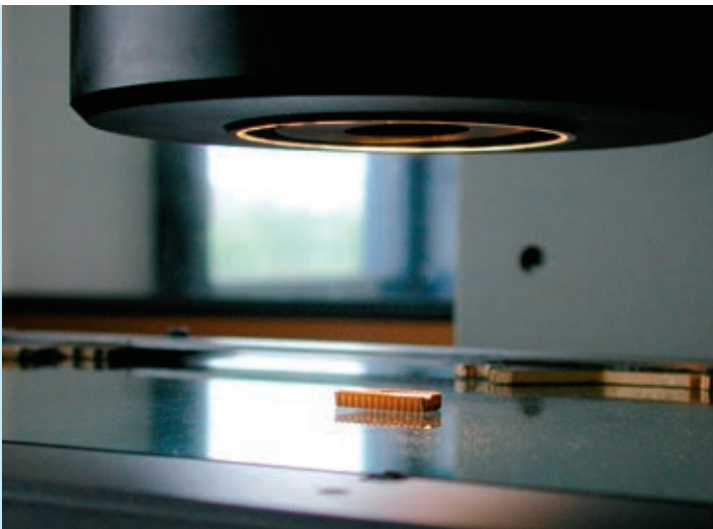
We join forces with our customers to design and manufacture special tools exactly in compliance with individual manufacturing criteria and existing drawings.



# Quality



We produce all manner of mimatic<sup>®</sup> driven tool units for all conventional CNC lathes, machining centers and woodworking machines. We can supply a broad spectrum of straight and offset drill and mill heads, with or without internal coolant feed, for high torque transmission and speeds, and with every conceivable shank variant for all applications. The mimatic<sup>®</sup> range also embraces tool holders, including collet chucks, cutter arbor and Capto tool holders, hydro-expansion chucks, sawblade and Weldon holders, as well as HSK, ABS, and UTS holders.





By obtaining the AEO-F certificate, mimatic has committed to the compliance of "supply chain security"

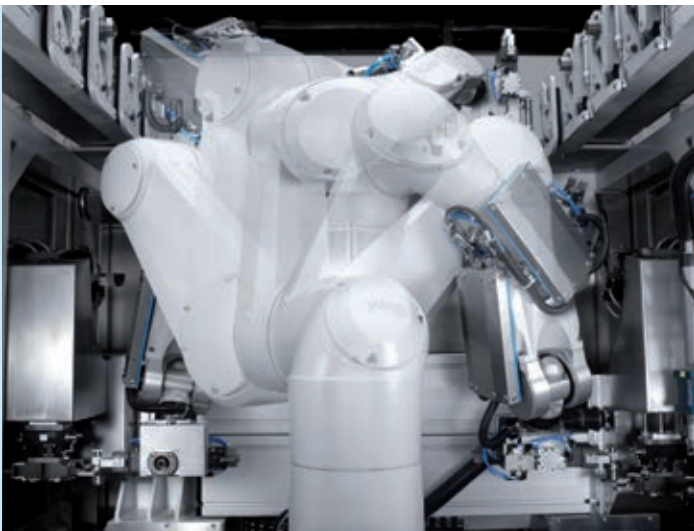
Every day we supply high-quality special solutions, always with the primary goal of ensuring customer satisfaction.

Our company's certification to DIN EN ISO 9001 : 2008 has been instrumental in safeguarding conformance with our customers high quality standards.

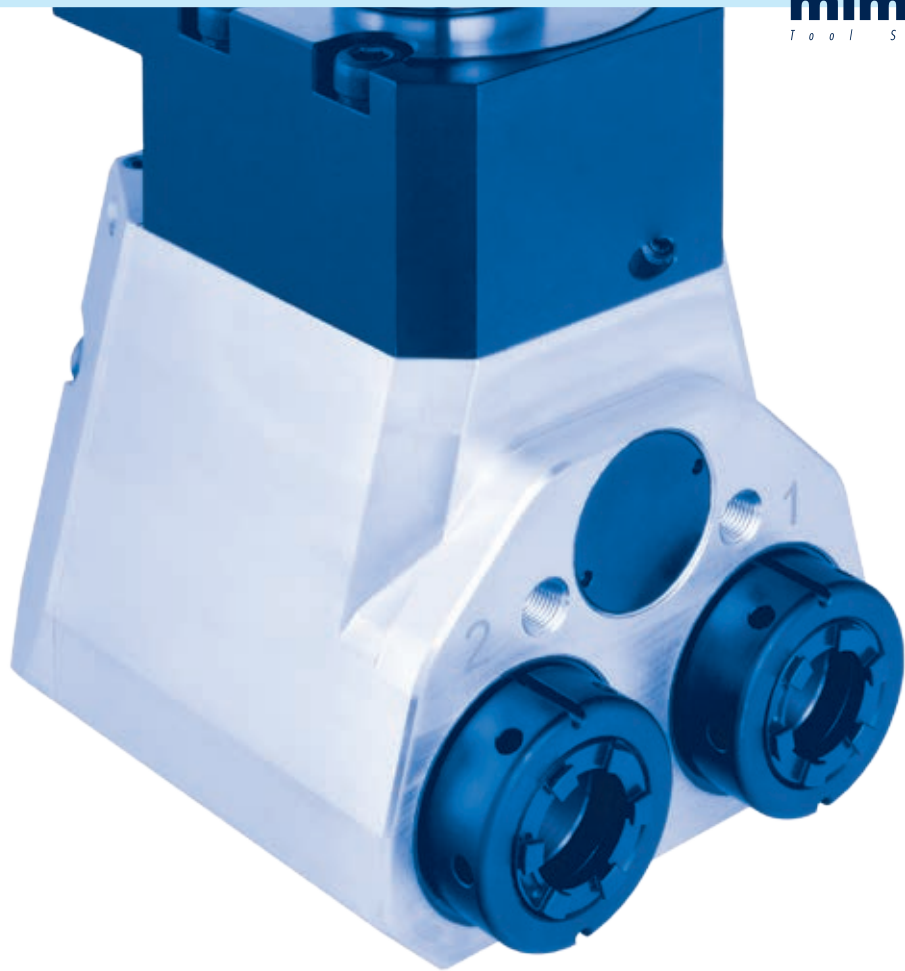


# Precision

mimatic<sup>®</sup> high-performance precision and universal chucks are typified by maximum concentricity, dependability and a long service life. Very high clamping forces ensure absolute process security and high, reliable speeds when drilling, reaming, countersinking and milling. The variety of the product range, embracing all conventional shanks, optional coolant feed, diverse clamping ranges, and a wide array of accessories and spare parts give you the security required for productive and efficient working practices.





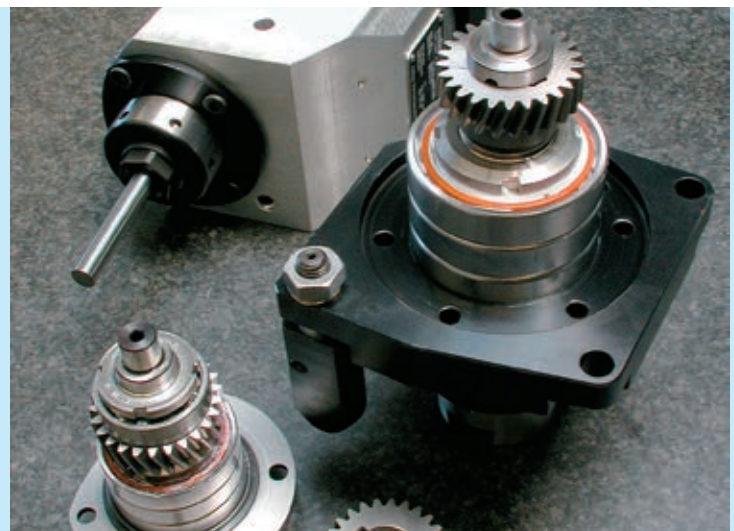
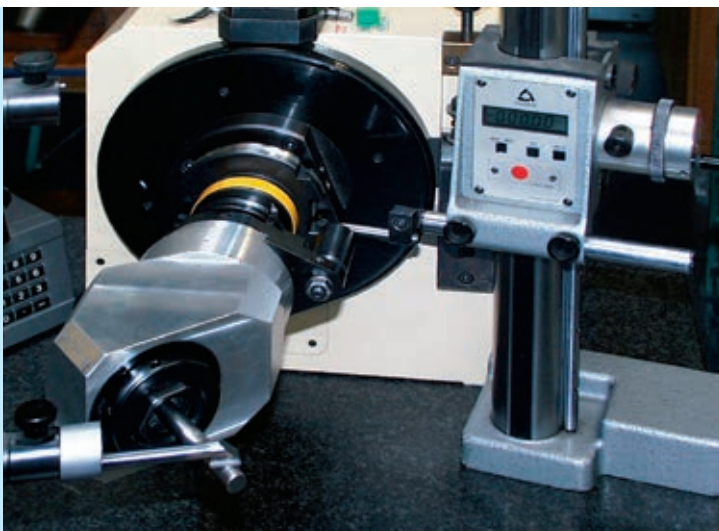


# Service

We are driven by customer proximity, short response times and solutions conceived for specific needs. A team of experienced machining professionals implements our mission in a worldwide network.

Our customers have access to a full service at all times, from procurement advice to spare parts management. Regular fundamental and advanced training keeps our employees up to date and ensures that their recommendations are second to none.

Sophisticated quality management ensures absolute control and consistent quality, from conception and design to the finished tool. We are well prepared for individual special-production. High-qualified designers realize effective and economic solutions, even in difficult cases.





## Service + Maintenance of Driven Toolholders

**Preventative maintenance and repair of driven tools are important factors to consider**

- 1) limit the tool costs**
- 2) ensure the tool availability**
- 3) ensure the continuing reliability**

Only high-quality bearings and spindle bearings from German brand manufacturers are used.

Together with high-quality friction-optimised seals, the proper functioning of your driven toolholder is ensured again.

For this you will get the **mimatic warranty seal**.

All serviced or repaired driven toolholders are subjected to a long-time function test on the mimatic test bench.



### **Procedure:**

- 1) The driven toolholder is sent to mimatic.
- 2) You will receive a goods receipt (3 working days max.).
- 3) You will receive a maintenance / repair offer info to the nature of the damage, the wear image and if possible, causes of wear (8 working days max).
- 4) You grant the repair order or determine the other use of the demounted parts (10 working days on your part).



# Sustainability

Enabling sustainability for manufacturing

**BLUeCOMPETENCE**

Machine Tools

Engineering a better world

**BLUECOMPETENCE**

Alliance Member

Partner of the Engineering Industry Sustainability Initiative

**BLUECOMPETENCE**

**The Program (Initiative)**

BLUECOMPETENCE relates to innovative technology of mechanical and Engineering entities providing solutions that are realizable. It is a Brand mark identifying members, partners and participants, that have proven solutions, improving processes, quality of life, environmentally friendly, energy efficient as well as market driven.

**The Essence of the Brand Mark**

The Brand is provided along with being a member of the VDMA: Technology for all. The term, sustainability relates to being able to balance making of products that are environmentally friendly, socially beneficial and commercially profitable.

**The Organizational Structure of the Brand Mark**

BLUECOMPETENCE is organized by the VDMA which in turn is made up of Individual Trade Associations (participants) and member companies (partners).

**BLUECOMPETENCE**

**Using an Example of mimatic mi**

Mimatic's expertise in making driven tool holders made us think about how to improve the speed and efficiency, in changing the cutting tool. The result being a modular tool interface known as mi. This allows various adaptors to be preset off line with the cutting tool, and quick changed using only one hand, by the turn of a key in minimal time.

Various styles of adaptors include, standard collets, shell end mill arbors, Weldon/Whistle-Notch, Synax tapping, shrink fit and others.

The connection between the holder and adaptor is made up of a HSK style ground taper and axial contact, allowing for a high precision interface. Some mi adaptors are compact, solid one piece integral designs achieving higher tolerances, repeatability, running accuracy and higher efficiency.

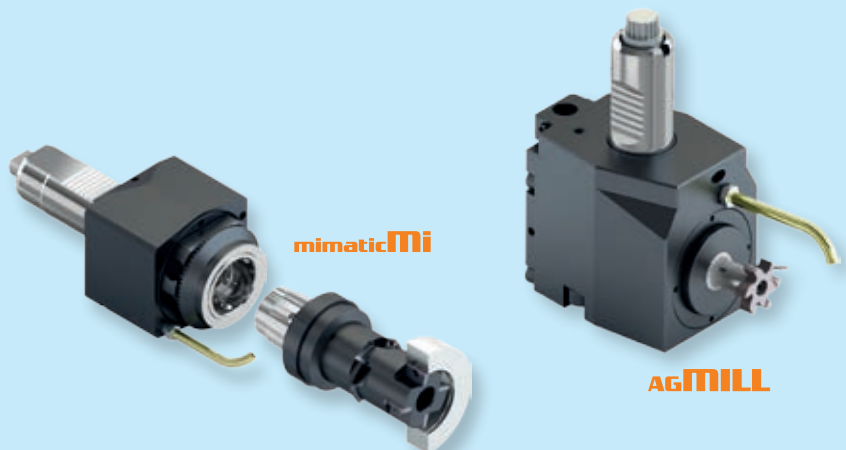
**BLUECOMPETENCE**

**Using the Example of AGMILL**

Mimatic's expertise in both driven tool holders and cutting tools have combined to develop a compact integral new milling solution. Traditional interfaces are eliminated, and replaced by a fully integrated driven tool holder and cutting tool where only the insert requires changing.

This solution is ideal for thread milling, Grooving and special profiles.

As one of the first manufacturers of precision tools, mimatic fulfilled the requirements and became BLUECOMPETENCE ALLIANCE MEMBER in 2011.



## Thread Milling



# CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
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<b>General</b>	Technical Cutting Data	176-187	11

# DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17















# TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

# Table of Contents

<p><b>PolyMILL</b></p> 		<p><b>Thread Inserts</b></p> <p>M 23 UN, NPT 23 G, BSW, BSF, UNC, UNF 24</p> <p><b>Tool Holders</b></p> <p>with cylindrical shank 25 for driven toolholders 26 with tightening shank 27</p>
<p><b>TriMILL</b></p> 		<p><b>Thread Inserts</b></p> <p>Grooving 29 Circlip grooves 29 30</p> <p><b>Tool Holders</b></p> <p>with cylindrical shank 31 with tightening shank 31</p>
<p><b>TrioCUT</b></p> 		<p><b>Thread Inserts</b></p> <p>M 33+34 G, BSW, BSF 33+35 PG 33+35</p> <p><b>Tool Holders</b></p> <p>Type 12 Type 17 34</p>
<p><b>14,5 21</b></p> 		<p><b>Thread Inserts</b></p> <p>M 37+38 G, BSW, BSF 37+38 UNC, UNF 37+38 PG 37+38</p> <p><b>Tool Holders</b></p> <p>Type 14,5 36 Type 21 38</p>
<p><b>SolidCUT</b></p>		<p><b>Solid Carbide Thread Milling Cutter</b></p> <p>M 41 MF 42-43 G 44 BSW 45 BSF 45 UNC 46 UNF 47 NPT 48</p>
<p><b>Technical Data</b></p>		<p>Notes to the circular thread milling 39 Programming example TrioCUT 36 Notes to circular milling SolidCUT 49 Cutting data values 178-181 Carbide grades 118</p>

# Symbols

	Type designation		Thread standard
	Tool shaft without clamping surface		Thread with undercut (Trio-Cut)
	Tool shaft with Weldon clamping surface		for right- and left hand internal thread for left hand thread modify your NC-program!
	Cutter with tightening thread		for right- and left hand external thread for left hand thread modify your NC-program!
	Smallest necessary bore-diameter		Full form thread milling
	Internal coolant supply		Partial form thread milling
	Number of inserts		Helix angle

# PolyMILL

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi  
» Driven Tool Holders

## Circular Milling Tools with Polygonal Insert Seat and 6 Cutting Edges for a High Chipping Volume



The new generation of circular cutters allows,

- **Guard Ring Slots**
- **Metric Internal Threads acc. to DIN**
- **Whitworth Threads**

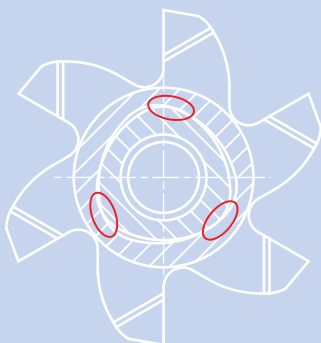
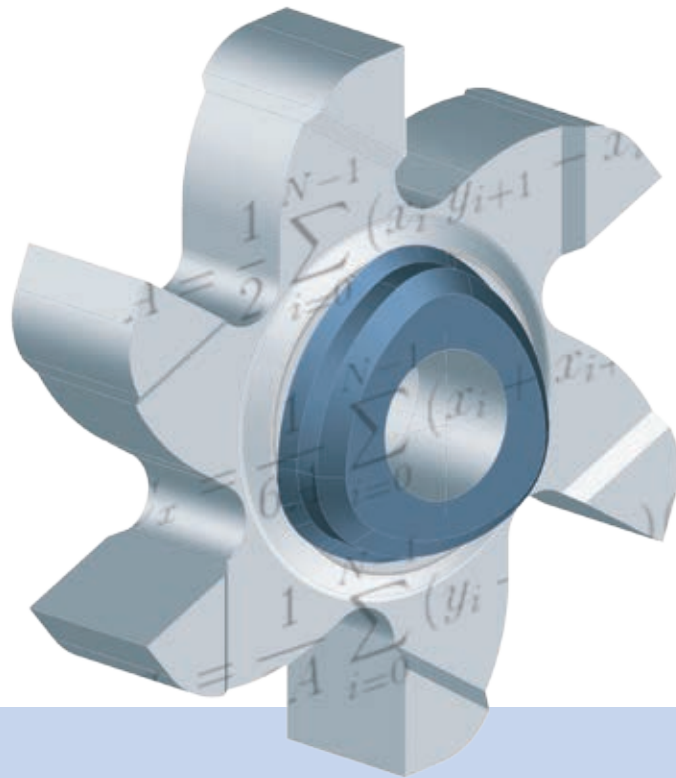
to be milled in components with great precision. The polygonal connection between the insert and cutter body improves the economy and quality of the machining process.

- **Longer Tool Lifetimes**
- **Higher Chipping Volume**
- **Higher Feeds**
- **Shorter Machining Times**

P16, P20 and P26 are the designations of the three basic types. They are available with various shank and insert dimensions that extend the application scope.


The milling cutters are available in various lengths. The carbide variants are made with a tool-steel head.

### The Polygon in the mimatic® P-Interface



#### Advantages

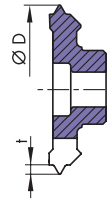
- Concentricity over 3-point polygon
- Power transmission by 3-point polygon
- High stability through closed circular ring
- High resistance against breakage during interrupted cut

 = Transmission zones

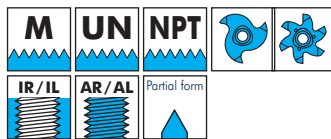
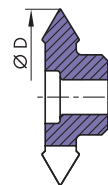
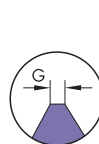


# Thread Milling

- Insert holder see page 25-27
- Cutting data see page 179



	Typ	Pitch mm	D mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P12	P1210	1,00	9,6	0,572		3	171875
	P1210	1,50	9,6	0,875		3	171876
	P1210	1,75	9,6	1,010	only M12	3	175479
	P1211	2,00	10,5	1,157		3	171877
P16	P1616	1,00	16,0	0,572		6	107240
	P1616	1,50	16,0	0,864		6	142569
	P1616	2,00	16,0	1,159		6	142570
	P1616	2,50	16,0	1,444		6	142543
	P1616	2,50	16,0	1,444	only M20	6	142534
	P1616	3,00	16,0	1,702		6	142575
	P1616	3,00	16,0	1,702		6	142575
P20	P2020	1,50	20,0	0,875		6	168683
	P2020	2,00	20,0	1,157		6	168684
	P2020	3,00	20,0	1,745	only M24	6	168685
P25	P2526	1,50	26,0	0,864		6	142617
	P2526	2,00	26,0	1,159		6	142644
	P2526	3,00	26,0	1,728		6	142599
	P2524	3,50	24,0	2,023	only M30	6	142671
	P2526	3,50	26,0	2,023		6	142623
	P2526	4,00	26,0	2,262		6	142624
	P2526	4,00	26,0	2,262	only M36	6	169675
	P2526	4,50	26,0	2,602		6	142638
P2526	5,00	26,0	2,887		6	107275	

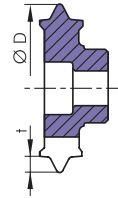
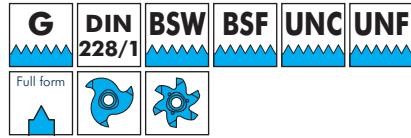


	Type	Pitch mm	D mm	G mm	Number of teeth	Order No. TINAMATIC
P12	P1212	1-3	11,7	0,10	3	171911
P16	P1616	1-4*	16,0	0,10	6	142580
	P1616	2,5-4	16,0	0,25	6	142544
P20	P1618	1-3	17,7	0,10	6	171954
	P2020	1-3	20,0	0,10	6	168686
	P2022	1-2	21,7	0,10	6	171972
P25	P2022	2-4	21,7	0,15	6	171973
	P2526	1-3	26,0	0,10	6	142647
	P2526	2,5-5	26,0	0,25	6	142592
	P2526	3,5-6	26,0	0,40	6	175936

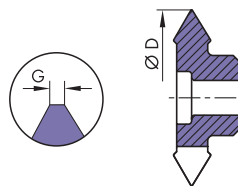
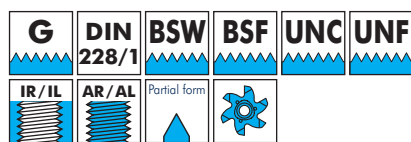
\* Not suited for pitch 4,0 mm with the cutters 123588 and 123590

# Thread Milling

- Insert holder see page 25-27
- Cutting data see page 179



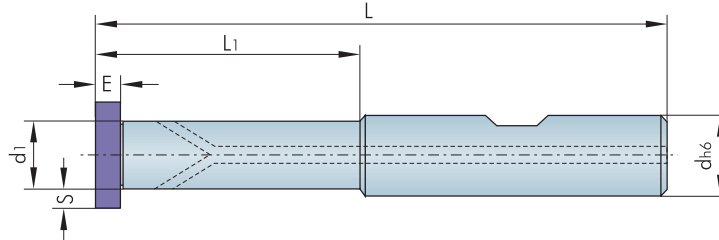
Type	Pitch / "	D mm	t mm	Thread	Number of teeth	Order No. TINAMATIC	
<b>UNC</b>							
P12	P1210	12	9,6	1,290	3	171883	
	P1211	11	10,5	1,350	3	171880	
	P1212	10	11,7	1,485	3	171879	
P16	P1616	9	16,0	1,577	6	172148	
P20	P2018	8	18,0	1,809	6	172149	
	P2020	7	20,0	2,043	6	172150	
P25	P2524	6	24,0	2,454	6	172151	
	P2526	5	26,0	2,979	6	172152	
	P2526	4,5	26,0	3,289	6	172153	
<b>UNF</b>							
P12	P1210	1/2-20	9,6	0,733	3	171884	
	P1211	9/16-18	10,5	0,827	3	171885	
	P1212	3/4-16	11,7	0,945	3	171900	
P16	P1618	7/8-14	17,7	1,071	6	171950	
P20	P2020	1-12	20,0	1,228	6	171951	
<b>G,BSW, BSF</b>							
P12	P1210	19	9,6	0,871	3	171912	
P16	P1616	11	16,0	1,478	6	142549	
	P1616	14	16,0	1,162	6	142576	
	P1616	10	16,0	1,646	6	167014	
	P1618	14	17,7	1,177	6	171949	
P20	P2020	11	20,0	1,494	6	168687	
	P2020	14	20,0	1,177	6	168688	
P25	P2526	11	26,0	1,478	all threads > 1"	6	142600



Type	Pitch / "	D mm	G mm	Number of teeth	Order No. TINAMATIC	
P16	P1616	8-14	16	0,1	6	173906
P25	P2526	4-8	26	0,1	6	177427

## Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 23-24
- Cutting data see page 179



Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	Smax. mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P12	123619	B	12	12	7,0	2,25	2,0	69,5	22,0	Steel	T8 IP 111656	M2,5x7 107596
	100228	B	12	12	7,0	2,25	2,0	69,5	22,0	Carbide		
	171778	A	12	12	7,0	2,25	2,0	69,5	22,0	Carbide		
	171780	B	12	12	7,0	2,25	2,0	82,0	32,0	Carbide		
	171781	A	12	12	7,0	2,25	2,0	82,0	32,0	Carbide		
	171783	B	12	12	7,0	2,25	2,0	102,0	42,0	Carbide		
P16	123573	B	18	12	9,0	4,00	3,5	71,5	25,0	Steel	T8 IP 111656	M3x12 143158
	123577	B	18	12	9,0	4,00	3,5	71,5	25,0	Carbide		
	171787	A	18	12	9,0	4,00	3,5	71,5	25,0	Carbide		
	123580	B	18	12	9,0	4,00	3,5	86,5	40,0	Carbide		
	171789	A	18	12	9,0	4,00	3,5	86,5	40,0	Carbide		
	123584	A	18	12	9,0	4,00	3,5	104,0	34,0	Carbide		
	123588	A	18	12	12,0	2,70	3,5	86,5	-	Carbide		
	123590	A	18	12	12,0	2,70	3,5	126,6	-	Carbide		
P20	123615	B	22	16	11,5	5,00	5,0	85,6	35,6	Steel	T15 IP 111671	M4x13 107597
	123616	B	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	171794	A	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	123617	B	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	171796	A	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	174314	A	22	16	16,0	2,70	5,0	111,0	-	Carbide		
P25	123592	B	28	16	13,6	6,80	4,0	84,2	35,0	Steel	T20 IP 111594	M5x13,5 107529
	123598	B	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	171855	A	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	123600	B	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	171857	A	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	123603	B	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	171859	A	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	123609	A	28	16	16,0	5,70	4,0	109,6	-	Carbide		
	123611	A	28	16	15,5	6,80	4,0	154,3	-	Carbide		
	123613	A	28	20	15,5	5,70	4,0	180,0	25,0	Carbide		

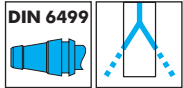
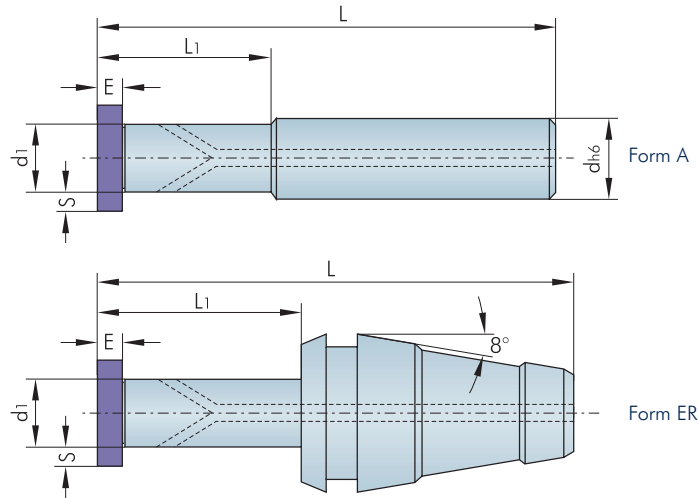
\* If inserts width <> dimension E are used, dimensions L and L<sub>1</sub> change accordingly.

Screw torques max.

107596	T08 IP	1,0 Nm
143158	T08 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

## Circular Milling Tools for Driven Toolholders

- Inserts see page 23-24
- Cutting data see page 179



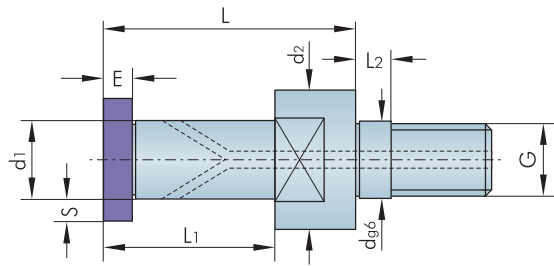
Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	Smax. mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P12	177170	A	12	10	7,0	2,25	2,0	57,0	10,0	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16	12		7,0	2,25	2,0		10,0	Steel		
	177173	ER 20	12		7,0	2,25	2,0		15,0	Steel		
P16	177174	A	18	10	9,0	4,00	3,5	64,0	15,0	Steel	T8 IP 111656	M3x12 143158
	177176	ER 16	18		9,0	4,00	3,5		15,0	Steel		
	177177	ER 20	18		9,0	4,00	3,5		20,0	Steel		
P20	177178	A	22	12	11,5	5,00	5,0	68,0	20,0	Steel	T15 IP 111671	M4x13 107597
	177180	ER 20	22		11,5	5,00	5,0		20,0	Steel		
	177181	ER 25	22		11,5	5,00	5,0		25,6	Steel		
P25	177182	A	28	16	13,6	6,80	4,0	74,2	25,0	Steel	T20 IP 111594	M5x13,5 107529
	177184	ER 25	28		13,6	6,80	4,0		25,0	Steel		
	177185	ER 32	28		13,6	6,80	4,0		35,0	Steel		

Screw torques max.

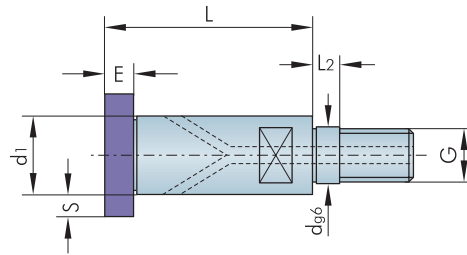
107596	T8 IP	1,0 Nm
143158	T8 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

# Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 23-24
- Cutting data see page 179



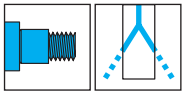
Picture 1



Picture 2



Please adapt cutting data to overhangs length



Type (D)	Order No.	Pic.	Bore Ø min. recommended	dg6 mm	d1 mm	d2 mm	Smax. mm	E mm	L* mm	L1* mm	L2 mm	G	Shaft	Spare part No.	
														Screwdriver	Screw
P12***	177676	2	12	5,5	9,5	-	1,1	3	13,5	-	5,0	M5	Steel	111656	107596
P16	123586	1	18	8,5	9,0	14,4	3,5	3,5	29,5	19,5	5,5	M8	Steel	111656	143158
P16**	177683	2	18	5,5	9,5	-	3,25	3	18,5	-	5,0	M5	Steel	111656	143158
P16***	177698	2	18	6,5	11,0	-	2,5	3	18,5	-	5,0	M6	Steel	111656	143158
P20	123618	1	22	10,5	11,5	18,0	4,2	5	35,0	25,0	5,5	M10	Steel	111671	107597
P20**	177734	2	22	6,5	11,5	-	4,2	5	20,5	-	5,0	M6	Steel	111671	107597
P20***	177735	2	22	8,5	13,5	-	3,25	5	20,5	-	5,5	M8	Steel	111671	107597
P25	123605	1	27	12,5	13,6	22,5	5,7	4	42,5	29,5	5,5	M12	Steel	111594	107529
P25**	177747	2	27	8,5	13,6	-	5,7	4	22,6	-	5,5	M8	Steel	111594	107529
P25***	177767	2	27	10,5	18,0	-	3,5	4	22,6	-	5,5	M10	Steel	111594	107529

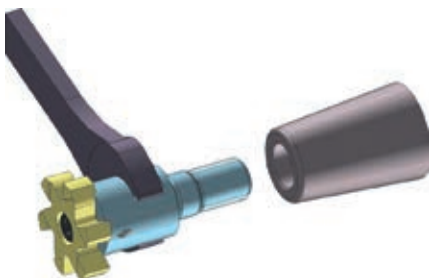
- \* If inserts width <> 4,0 mm are used, dimensions L and L<sub>1</sub> change accordingly.
- \*\* Slim design for thread milling
- \*\*\* Reinforced design

Screw torques max.

107596	T8 IP	1,0 Nm
143158	T8 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

## Assembling Instructions

- Recommended tightening torque for screw-in circular milling body



## Changing Inserts

Clamp cutter before changing insert. Loosen insert screw. Remove used insert and clean the insert pocket before clamping new insert. Please use the appropriate TIP hex key for the tightening of the inserts and consider the screw tightening torques in the tables.

Thread size (G)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60

## Circular Milling Tools for Contours and Threads

The circular milling principle allows outside and inside contours to be manufactured to individual requirements on all CNC machining centers and milling machines. High efficiency is achieved by short machining times, extended tool life, and by reducing or eliminating with expensive special tools.

- **High-Precision Free Contours**
- **High-Precision Plunge Cuts**
- **True-to-Gauge Threads**

can be executed with the utmost ease and without chip obstruction problems.

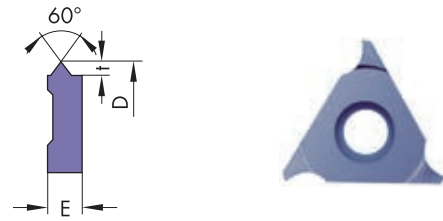
Blind holes can be tapped practically to the base without under-cutting. The use of uniform pitches also reduces storage and purchasing costs. As long as maximum dimensions are maintained, insert profiles can be customized to your specifications.





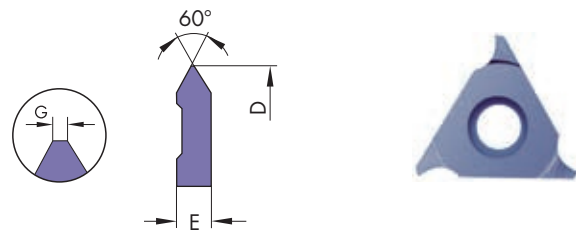
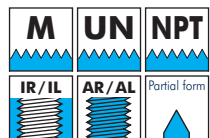
# Thread Milling

- Insert holder see page 31
- Cutting data see page 179



Type	Pitch	D mm	E mm	t mm	Thread	Order No.	
						K10	TINAMATIC
03	1,0	10,6	2,34	0,578	≥ M 12	141620	141613
	1,5	10,6	2,34	0,864	≥ M 14	141632	141674
	2,0	10,6	3,00	1,159	≥ M 16	141675	141647
02	1,0	17,5	3,50	0,578		141471	141443
	1,5	17,5	3,50	0,864		141501	141482
	2,0	17,5	3,50	1,159		141461	141484
	2,5	17,5	3,50	1,444		141538	141514
	2,5	16,0	3,50	1,444	only M20	141499	141516
	3,0	17,5	3,50	1,728		141493	141494
	3,0	17,5	3,50	1,728		141493	141494
01	1,0	23,0	4,00	0,578		141265	141317
	1,5	23,0	4,00	0,864		141311	141291
	2,0	23,0	4,00	1,159		141284	141312
	2,5	23,0	4,00	1,444		141286	141287
	3,0	23,0	4,00	1,728		141303	141339
	3,5	23,0	4,00	2,023		141344	141300
	4,0	23,0	4,00	2,308		141335	141347
	4,5	23,0	6,50	2,602		141359	141365
	5,0*	23,0	6,50	2,887		141349	141342
	5,5*	23,0	6,50	3,182		106874	141350
	6,0*	23,0	6,50	3,467		141338	141369

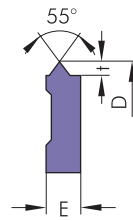
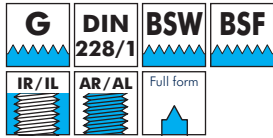
\* Caution: Not suitable for cutters no. 123415, 170320, 123416, 123441.



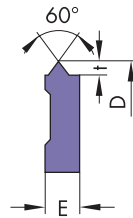
Type	Pitch	D mm	E mm	G mm	Order No.	
					K10	TINAMATIC
03	1-2,0	10,6	3,0	0,10		141677
02	1-3,5	17,5	3,5	0,10	141546	141528
01	1-4,0	23,0	4,0	0,10	141329	141366

## Thread Milling

- Insert holder see page 31
- Cutting data see page 179



Type	Pitch / "	D mm	E mm	t mm	Thread	Order No.	
						K10	TINAMATIC
03	19	10,6	2,34	0,871	G 1/4"	141651	141652
	19	10,6	2,34	0,871	G 3/8"	141687	141682
	11	17,5	3,50	1,494		141539	141522
02	14	17,5	3,50	1,162		141540	141488
	14	16,0	3,50	1,162	G 1/2"	141490	141508
01	11	23,0	4,00	1,494		141384	141381

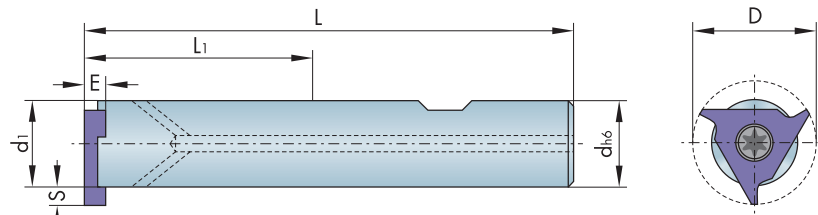
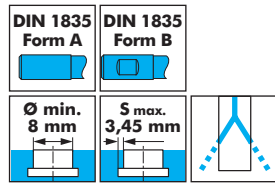


Type	Pitch / "	D mm	E mm	t mm	Thread	Order No.	
						K10	TINAMATIC
03	10	10,6	2,34	1,470	3/4-10		149732
	11	10,6	2,34	1,349	5/8-11		149204
	13	10,0	2,34	1,099	1/2-13		149460



## Circular Milling Tools

- Inserts see page 29
- Cutting data see page 179
- Carbide grades see page 118



Type	Order No.	Form	Bore Ø min.	D mm	dg6 mm	d1 mm	Smax. mm	E mm	L mm	L1 mm	Shaft	Spare part No.	
												Screw-driver	Screw
03	123477*	B	11	10,6	10	7,4	1,60	2,34	59,54	19,54	Steel	T6 IP 111705	107530
	123478*	B	11	10,6	12	7,4	1,60	2,34	67,00	19,54	Steel		
	123479*	A	11	10,6	12	7,4	1,60	2,34	67,00	19,54	Steel		
	123480	B	11	10,6	10	7,4	1,60	2,34	76,54	36,54	Carbide		
	123489	A	11	10,6	8	8,0	1,25	2,34	80,00	-	Carbide		
02	123445	B	20	17,5	12	12,0	2,60	3,50	77,55	32,20	Steel	T15 IP 111671	107547
	123446	B	20	17,5	16	12,0	2,60	3,50	82,10	32,20	Steel		
	123447	A	20	17,5	16	12,0	2,60	3,50	82,10	32,20	Steel		
	123448	B	20	17,5	12	12,0	2,60	3,50	112,20	67,20	Carbide		
	123470	A	20	17,5	12	12,0	2,60	3,50	82,80	-	Carbide		
	123471	A	20	17,5	12	12,0	2,60	3,50	100,00	-	Carbide		
01	123474	A	20	17,5	12	12,0	2,60	3,50	125,00	-	Carbide	T20 IP 111594	107551
	123412	B	25	23,0	16	16	3,45	4	91,00	42,5	Steel		
	123414	B	25	23,0	16	16	3,45	4	120	71,5	Steel		
	123415**	A	25	23,0	20	17	3	4	97,00	45	Steel		
	170320	A	25	23,0	16	17	3	4	141	92,5	Carbide		
	123416	B	25	23,0	16	17	3	4	141	92,5	Carbide		
123440	A	25	23,0	16	16	3,45	4	115	-	Carbide			
123441	A	25	23,0	16	16	3	4	152,5	-	Carbide			

\* Without internal coolant supply    \*\* Also suitable as basic body for a tandem cutter.

Screw torques max.

107530	T6 IP	0,9 Nm
107547	T15 IP	3,8 Nm
107551	T20 IP	5,5 Nm

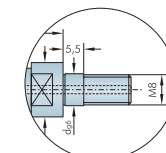
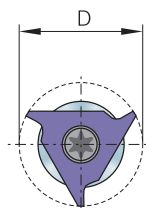
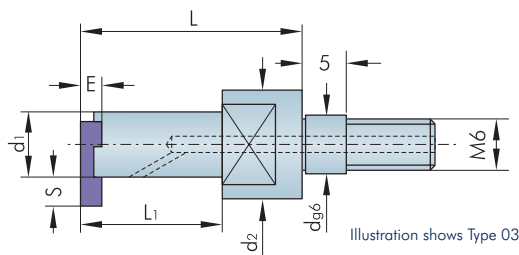


Illustration shows Type 02

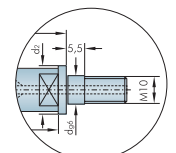
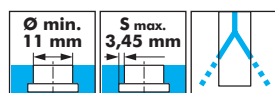


Illustration shows Type 01



**Please adapt cutting data to overhangs length**

Type	Order No.	Bore Ø min.	D mm	dg6 mm	d1 mm	d2 mm	Smax. mm	E mm	L mm	L1 mm	Shaft	Spare part No.	
												Screw-driver	Screw
03	123481	11	10,6	6,5	7,4	10,0	1,60	2,34	25	16	Steel	111705	107530
02	123450	20	17,5	8,5	12,2	15,4	2,60	3,50	31	22	Steel	111671	107547
01	123419	25	23,0	10,5	16,1	18,0	3,45	4,00	36	33	Steel	111594	107551

Screw torques max.

107530	T6 IP	0,9 Nm
107547	T15 IP	3,8 Nm
107551	T20 IP	5,5 Nm

# TrioCUT

## Only 1 Tool for 3 Applications

- Thread Milling with Undercut
- Thread Milling and
- Drill Milling

are possible with the same cutter and the appropriate insert. The advantages are shorter machining times as well as a reduction in tool cost.

**Smooth cutting action** and **reduced cutting forces** guarantees long tool

life, improved surface quality, as well as a lower machine load. **A Conical position of insert pocket** guarantees stability of the tool shaft. Further advantages are the **radially back ground thread profile**, extremely high wedge angle, a more stable cutting edge as well as a **positive rake angle** and **coolant through the holder**.

### ① Thread Milling with Undercut

- Drilling, drill milling, drill and thread milling in a solid material with only one cutting tool without any change of the insert or tool
- Range beginning from M 14 x 1,0
- Available pitches are: 1 / 1,5 / 2 mm
- Length of thread up to 17 mm
- Drilling/milling depth up to 30 mm



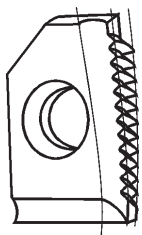
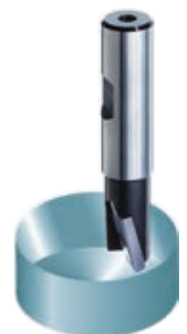
### ② Thread Milling

- Drilling, drill milling, drill and thread milling in a solid material with only one cutting tool without any change of the insert or tool
- Range beginning from M 14 x 1,0 (Ø theoretical unlimited)
- Available pitches are: 1 / 1,5 / 2 mm
- Length of thread up to 30 mm

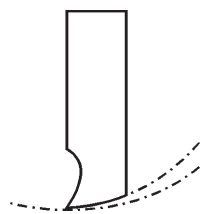


### ③ Drill Milling

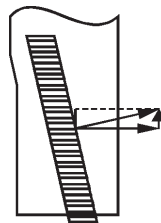
- 3-D machining: Drilling and drill milling in solid material
- Milling of grooves, pockets, offsets
- Drill Ø from 12 mm
- bore depth max. 30 mm



Smooth cutting action by a left helical ground insert



More stability from radial ground clearance angle

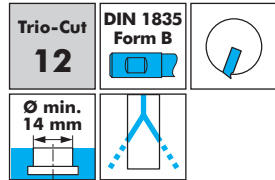
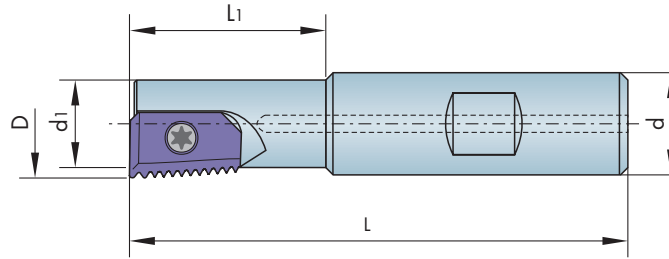


Even displacement of cutting forces

**TrioCUT**

**Circular Milling Tools**

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see below



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Operation	Shaft	Spare part No.	
									T8 IP Screw-driver	Screw
123620	14	12	16	9,4	74	18	only thread milling	Steel	111656	115567
123621	14	12	16	11,0	74	18	only drill milling	Steel	111656	115567

Screw torque max. 1,1 Nm

**Circular Milling Inserts**



**Note:**  
Type 12 milling tools can only be used with type 12 milling inserts!



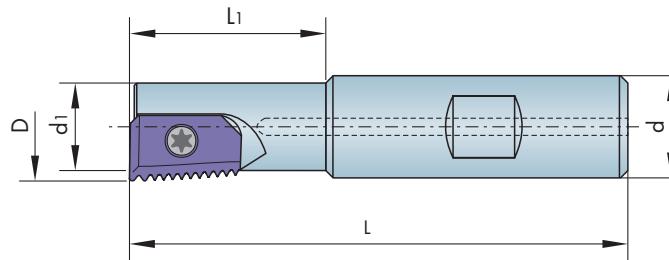
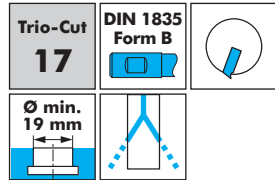
		<table border="1"> <thead> <tr> <th>Pitch</th> <th>B mm</th> <th>L* mm</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>1,0</td> <td>7,5</td> <td>12,0</td> <td>13</td> <td>142594</td> </tr> <tr> <td>1,5</td> <td>7,5</td> <td>10,5</td> <td>8</td> <td>142694</td> </tr> </tbody> </table>	Pitch	B mm	L* mm	Teeth	Order No. TINAMATIC	1,0	7,5	12,0	13	142594	1,5	7,5	10,5	8	142694			
Pitch	B mm	L* mm	Teeth	Order No. TINAMATIC																
1,0	7,5	12,0	13	142594																
1,5	7,5	10,5	8	142694																
		<table border="1"> <thead> <tr> <th>Pitch / "</th> <th>B mm</th> <th>L* mm</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>19</td> <td>7,5</td> <td>9,07</td> <td>9 as of 3/8 only</td> <td>142688</td> </tr> <tr> <td>14</td> <td>7,5</td> <td>9,07</td> <td>6</td> <td>142632</td> </tr> </tbody> </table>	Pitch / "	B mm	L* mm	Teeth	Order No. TINAMATIC	19	7,5	9,07	9 as of 3/8 only	142688	14	7,5	9,07	6	142632			
Pitch / "	B mm	L* mm	Teeth	Order No. TINAMATIC																
19	7,5	9,07	9 as of 3/8 only	142688																
14	7,5	9,07	6	142632																
		<table border="1"> <thead> <tr> <th>Pitch / "</th> <th>PG</th> <th>B mm</th> <th>L* mm</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>18</td> <td>9-16</td> <td>7,5</td> <td>11,28</td> <td>9</td> <td>142679</td> </tr> <tr> <td>16</td> <td>21-48</td> <td>7,5</td> <td>9,52</td> <td>7</td> <td>142664</td> </tr> </tbody> </table>	Pitch / "	PG	B mm	L* mm	Teeth	Order No. TINAMATIC	18	9-16	7,5	11,28	9	142679	16	21-48	7,5	9,52	7	142664
Pitch / "	PG	B mm	L* mm	Teeth	Order No. TINAMATIC															
18	9-16	7,5	11,28	9	142679															
16	21-48	7,5	9,52	7	142664															

\* The length "L" of the Thread Milling Insert is measured when the insert is clamped in the holder.

# TrioCUT

## Circular Milling Tools

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see page 34-35



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T15 IP Screw-driver	Screw
123631	19	17	16	13,7	79	30	Steel	111671	115628
123633	19	17	20	13,7	92	30	Steel	111671	115628

Screw torque max. 3,8 Nm

## Circular Milling Inserts



**Note:**  
Type 17 milling tools can only be used with type 17 milling inserts!

		Pitch	B mm	L* mm	Teeth	Order No. TINAMATIC		
		1,0	11	16,0	17	142731		
		1,5	11	16,5	12	142720		
		2,0	11	16,0	9	142651		
		Pitch	B mm	L* mm	Teeth	Order No. TINAMATIC		
		1,5	11	16,5	12	142721		
		Pitch	B mm	L* mm	L1* mm	R mm	Teeth	Order No. TINAMATIC
		1,0	11	14,0	3,6	0,4	15	142668
		1,5	11	13,5	4,1	0,4	10	142650
		2,0	11	12,0	3,6	0,4	7	142672
		Pitch / "	B mm	L* mm	Thread	Teeth	Order No. TINAMATIC	
		11	11	16,16	all	8	142685	
		14	11	16,33	5/8-3/4-7/8"	10	142732	

\* The length "L" and "L1" of the Thread Milling Inserts are measured when the insert is clamped in the holder.

TrioCUT

Circular Milling Inserts



Trio-Cut  
17

<p><b>G</b> <b>DIN 228/1</b> <b>BSW</b> <b>BSF</b></p> <p>IR/IL Full form</p>	<table border="1"> <thead> <tr> <th>Pitch / "</th> <th>B mm</th> <th>L* mm</th> <th>Thread</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>14</td> <td>11</td> <td>16,33</td> <td>G 1/2" profile corrected</td> <td>10</td> <td>142652</td> </tr> </tbody> </table>	Pitch / "	B mm	L* mm	Thread	Teeth	Order No. TINAMATIC	14	11	16,33	G 1/2" profile corrected	10	142652												
Pitch / "	B mm	L* mm	Thread	Teeth	Order No. TINAMATIC																				
14	11	16,33	G 1/2" profile corrected	10	142652																				
<p><b>G</b> <b>DIN 228/1</b> <b>BSW</b> <b>BSF</b></p> <p>IR/IL AR/AL Full form</p>	<table border="1"> <thead> <tr> <th>Pitch / "</th> <th>B mm</th> <th>L* mm</th> <th>L1* mm</th> <th>R mm</th> <th>Thread</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>11</td> <td>11</td> <td>11,54</td> <td>4,6</td> <td>0,4</td> <td>all</td> <td>6</td> <td>142725</td> </tr> <tr> <td>14</td> <td>11</td> <td>12,69</td> <td>3,5</td> <td>0,4</td> <td>5/8-3/4-7/8"</td> <td>8</td> <td>142717</td> </tr> </tbody> </table>	Pitch / "	B mm	L* mm	L1* mm	R mm	Thread	Teeth	Order No. TINAMATIC	11	11	11,54	4,6	0,4	all	6	142725	14	11	12,69	3,5	0,4	5/8-3/4-7/8"	8	142717
Pitch / "	B mm	L* mm	L1* mm	R mm	Thread	Teeth	Order No. TINAMATIC																		
11	11	11,54	4,6	0,4	all	6	142725																		
14	11	12,69	3,5	0,4	5/8-3/4-7/8"	8	142717																		
<p><b>G</b> <b>DIN 228/1</b> <b>BSW</b> <b>BSF</b></p> <p>IR/IL Full form</p>	<table border="1"> <thead> <tr> <th>Pitch / "</th> <th>B mm</th> <th>L* mm</th> <th>L1* mm</th> <th>R mm</th> <th>Thread</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>14</td> <td>11</td> <td>12,69</td> <td>3,5</td> <td>0,4</td> <td>G 1/2" profile corrected</td> <td>8</td> <td>142669</td> </tr> </tbody> </table>	Pitch / "	B mm	L* mm	L1* mm	R mm	Thread	Teeth	Order No. TINAMATIC	14	11	12,69	3,5	0,4	G 1/2" profile corrected	8	142669								
Pitch / "	B mm	L* mm	L1* mm	R mm	Thread	Teeth	Order No. TINAMATIC																		
14	11	12,69	3,5	0,4	G 1/2" profile corrected	8	142669																		
<p><b>PG</b> <b>DIN 40430</b> <b>IR/IL</b> <b>AR/AL</b></p> <p>Full form</p>	<table border="1"> <thead> <tr> <th>Pitch / "</th> <th>PG</th> <th>B mm</th> <th>L* mm</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>18</td> <td>11-16</td> <td>11</td> <td>16,92</td> <td>12</td> <td>142674</td> </tr> <tr> <td>16</td> <td>21-48</td> <td>11</td> <td>15,88</td> <td>11</td> <td>142675</td> </tr> </tbody> </table>	Pitch / "	PG	B mm	L* mm	Teeth	Order No. TINAMATIC	18	11-16	11	16,92	12	142674	16	21-48	11	15,88	11	142675						
Pitch / "	PG	B mm	L* mm	Teeth	Order No. TINAMATIC																				
18	11-16	11	16,92	12	142674																				
16	21-48	11	15,88	11	142675																				
<p><b>PG</b> <b>DIN 40430</b> <b>IR/IL</b> <b>AR/AL</b></p> <p>Full form</p>	<table border="1"> <thead> <tr> <th>Pitch / "</th> <th>PG</th> <th>B mm</th> <th>L* mm</th> <th>L1* mm</th> <th>R mm</th> <th>Teeth</th> <th>Order No. TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>18</td> <td>11-16</td> <td>11</td> <td>14,1</td> <td>3,9</td> <td>0,4</td> <td>11</td> <td>142684</td> </tr> <tr> <td>16</td> <td>21-48</td> <td>11</td> <td>12,7</td> <td>3,7</td> <td>0,4</td> <td>9</td> <td>142714</td> </tr> </tbody> </table>	Pitch / "	PG	B mm	L* mm	L1* mm	R mm	Teeth	Order No. TINAMATIC	18	11-16	11	14,1	3,9	0,4	11	142684	16	21-48	11	12,7	3,7	0,4	9	142714
Pitch / "	PG	B mm	L* mm	L1* mm	R mm	Teeth	Order No. TINAMATIC																		
18	11-16	11	14,1	3,9	0,4	11	142684																		
16	21-48	11	12,7	3,7	0,4	9	142714																		

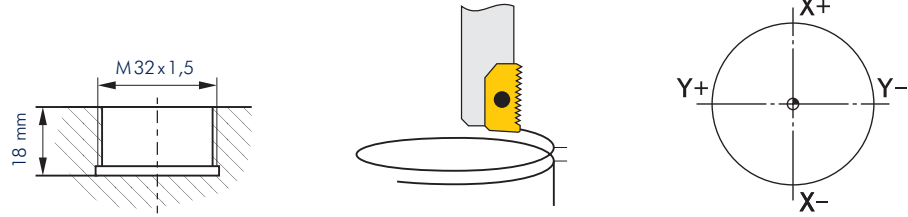
\* The length "L" and "L1" of the Thread Milling Inserts are measured when the insert is clamped in the holder.

TrioCUT

Programming Example Drill Thread Milling

I and J incremental from the starting point.

Cycle time 57 sec.  
Material 1045

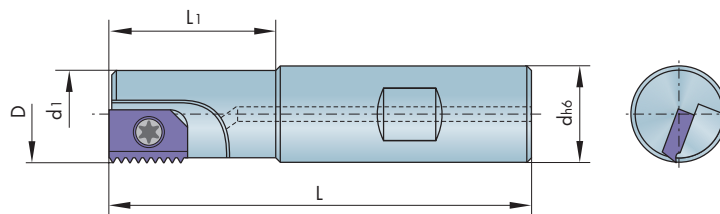
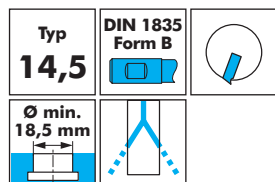


N1	G..								Selection of the level
N2	G..								Zero offset to the hole center
N10	S3000	T..							Technology data
N20	G0	X0	Y0	Z1	M13				1 mm over workpiece, hole center up to the outline
N30	G43	X-15.15							Cutting edge radius adjustment, left of the outline
N40	G41								
N50	G3	X-15.15	Y0	Z-1	I15.15	J0	F1500		Circular drill-milling, infeed 2 mm
N60	G3	X-15.15	Y0	Z-3	I15.15	J0			Circular drill-milling, infeed 2 mm
N70	G3	X-15.15	Y0	Z-5	I15.15	J0			Circular drill-milling, infeed 2 mm
N80	G3	X-15.15	Y0	Z-7	I15.15	J0			Circular drill-milling, infeed 2 mm
N90	G3	X-15.15	Y0	Z-9	I15.15	J0			Circular drill-milling, infeed 2 mm
N100	G3	X-15.15	Y0	Z-11	I15.15	J0			Circular drill-milling, infeed 2 mm
N110	G3	X-15.15	Y0	Z-13	I15.15	J0			Circular drill-milling, infeed 2 mm
N120	G3	X-15.15	Y0	Z-15	I15.15	J0			Circular drill-milling, infeed 2 mm
N130	G3	X-15.15	Y0	Z-17	I15.15	J0			Circular drill-milling, infeed 2 mm
N140	G3	X-15.15	Y0	Z-18	I15.15	J0			Circular drill-milling, infeed 1 mm
N150	G3	X-15.15	Y0	Z-18	I15.15	J0			Circular face milling
N160	G1	X-15.15	Y-0.85						to the starting point of the inward circular arc
N170	G3	X0	Y-16	Z-17.625	I15.15	J0	F600		Inward circular arc with pitch in Z
N180	G3	X0	Y-16	Z-16.125	I0	J16			Thread milling
N190	G3	X15.15	Y-0,85	Z-15.75	I0	J15.15			Outward circular arc
N200	G40								Deselection of the cutting edge radius adjustment
N210	G0	X0	Y0						to hole center
N220	G0	Z1							Outfeed to 1 mm over workpiece
N230	M30								End of program

14,5

Circular Thread Milling Tools

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see page 37



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123540	18,5	16	16	12,7	78	30	short	Steel	111671	107571
123541	18,5	16	16	12,7	98	50	long	Heavy metal	111671	107571
123542	23,0	20	20	16,8	110	60	long	Steel	111671	115628

Screw torques max.  
**107571** T15 IP 3,8 Nm  
**107628** T15 IP 3,8 Nm

14,5

# Circular Thread Milling Inserts



M	DIN 13	IR/IL	Full form	Pitch	B mm	L mm	S mm	Thread	Teeth	Order No.	
										K10	TINAMATIC
				0,5	10	13,50	3,18		28	142026	142117
				0,75	10	13,50	3,18		19	142083	142048
				1,0	10	13,00	3,18		14	142096	142037
				1,25	10	12,50	3,18		11	142057	142067
				1,5	10	12,00	3,18		9	142058	142053
				1,75	10	12,25	3,18		8	142106	142080
				2,0	10	12,00	3,18		7	142135	142136
				2,5	10	10,00	3,18		5	142137	142129
				2,5	10	10,00	3,18	M20x2,5	5	142108	142069
profile corrected											

M	DIN 13	AR/AL	Full form	Pitch	B mm	L mm	S mm	Teeth	Order No.	
									K10	TINAMATIC
				1,0	10	13	3,18	14	142163	142177
				1,5	10	12	3,18	9	142115	142186
				2,0	10	12	3,18	7	142196	142167

G	DIN 228/1	BSW	BSF	IR/IL	AR/AL	Pitch / "	B mm	L mm	S mm	Teeth	Order No.	
											K10	TINAMATIC
						24	10	12,70	3,18	13	142214	142218
						20	10	12,70	3,18	11	142173	142213
						19	10	12,03	3,18	10	142248	142234
						18	10	11,28	3,18	9	142247	142145
						16	10	11,11	3,18	8	142212	142152
						14	10	12,70	3,18	8	142144	142203
						12	10	10,58	3,18	6	142123	142181
						11	10	11,54	3,18	6	142226	142159

UNC	UNF	ASME B 1.1	IR/IL	Pitch / "	B mm	L mm	S mm	Teeth	Order No.	
									K10	TINAMATIC
				40	10	13,33	3,18	22	142224	142124
				32	10	12,70	3,18	17	142250	142286
				28	10	12,70	3,18	15	142249	142223
				24	10	12,70	3,18	13	142155	142273
				20	10	12,70	3,18	11	142266	142285
				18	10	12,69	3,18	10	142184	142216
				16	10	12,70	3,18	9	142253	142147
				14	10	10,88	3,18	7	142272	142221
				12	10	10,58	3,18	6	142192	142243
				11	10	11,55	3,18	6	142148	142237

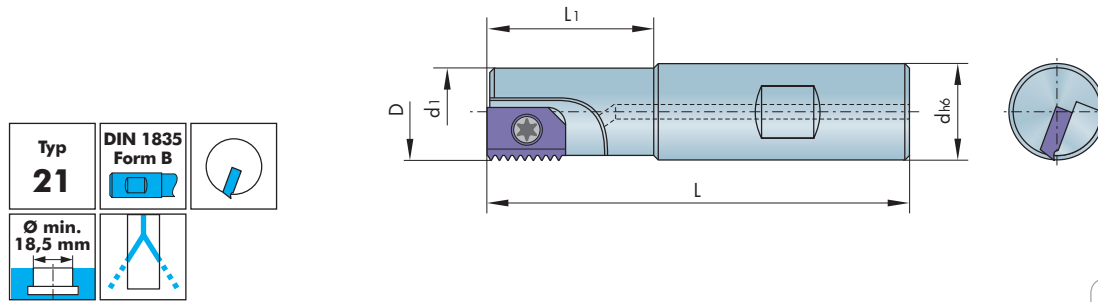
  

PG	DIN 40430	IR/IL	AR/AL	Pitch / "	PG	B mm	L mm	S mm	Teeth	Order No.	
										K10	TINAMATIC
				18	11-16	10	12,69	3,18	10	142300	142263
				16	21-48	10	11,11	3,18	8	142274	142257

21

## Circular Thread Milling Tools

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see below



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123557	18,5	16	20	12,7	85	31,3	short	Steel	111671	107571
123560	22,0	18	20	15,0	85	31,3	short	Steel	111671	107571

Screw torque max. 3,8 Nm

21

## Circular Thread Milling Inserts

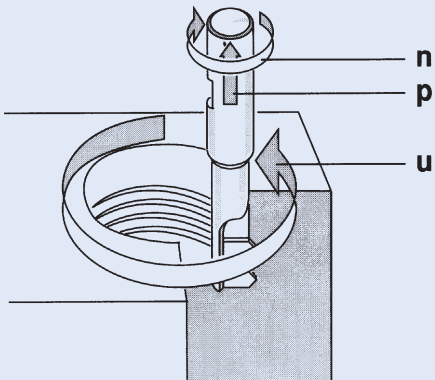


<b>M</b> <b>DIN 13</b> <b>IR/IL</b> Full form		Pitch	B mm	L mm	S mm	Teeth	Order No.	
							K10	TINAMATIC
		1,0	10	19,0	3,18	20	142340	142334
		1,5	10	19,5	3,18	14	142346	142366
		2,0	10	18,0	3,18	10	142335	142341
<b>M</b> <b>DIN 13</b> <b>AR/AL</b> Full form		Pitch	B mm	L mm	S mm	Teeth	Order No.	
							K10	TINAMATIC
		1,5	10	18	3,18	13	142369	142325
<b>G</b> <b>DIN 228/1</b> <b>BSW</b> <b>BSF</b> <b>IR/IL</b> <b>AR/AL</b>		Pitch / "	B mm	L mm	S mm	Teeth	Order No.	
							K10	TINAMATIC
		11	10	18,47	3,18	9	142375	142398
		14	10	18,14	3,18	11	142361	142376
<b>UNC</b> <b>UNF</b> <b>ASME B 1.1</b> <b>IR/IL</b>		Pitch / "	B mm	L mm	S mm	Teeth	Order No.	
							K10	TINAMATIC
		16	10	19,05	3,18	13	142401	142402
		14	10	18,14	3,18	11	142413	142446
		12	10	18,04	3,18	10	142447	142416

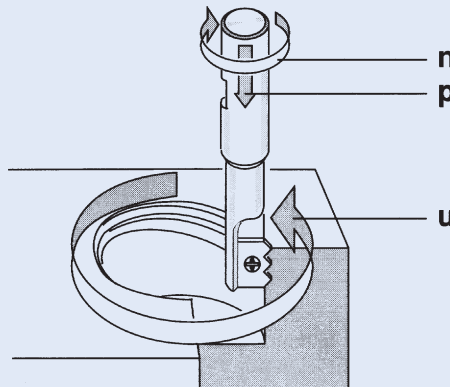


## Information about Circular Thread Milling

### Internal Thread

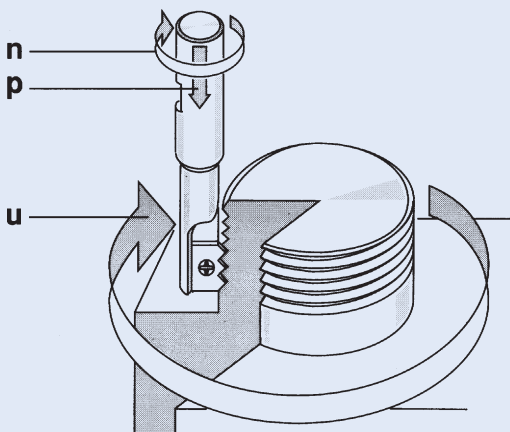


**Right-hand Thread (climb milling)**  
Left-hand Thread (up-cut milling)

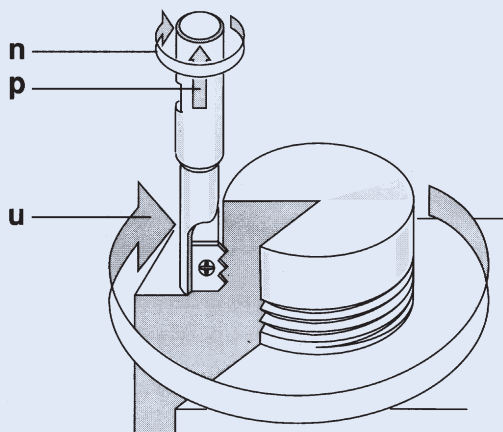


**Left-hand Thread (climb milling)**  
Right-hand Thread (up-cut milling)

### External Thread



**Right-hand Thread (climb milling)**  
Left-hand Thread (up-cut milling)



**Left-hand Thread (climb milling)**  
Right-hand Thread (up-cut milling)

- n** = rotation direction to the right
- p** = feed direction axial (1 revol. per pitch)
- u** = feed direction radial

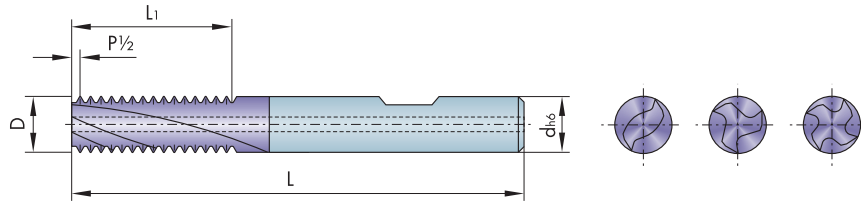
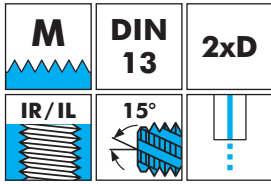
Always try to use climb milling process. If the thread is longer than insert length, cut in two steps. If you plunge in with a circle, please watch your axial feed (depending on pitch).

## Table of Content

	Thread	Type	Thread range	Page
<b>Metric Internal Thread</b>		Fixed dimension	M3 - M20	41
		with chamfer	M5 - M20	41
<b>Metric Internal Fine Thread</b>		Fixed dimension	M5 - M20	42
		Universal	M10 - >M27	42-43
		with chamfer	M8 - M20	43
<b>Whitworth Pipe Thread</b>		Fixed dimension	1/8" - 1/2"	44
		Universal	1/4" - >1"	44
		with chamfer	1/16" - 5/8"	44
<b>British Standard Whitworth Thread</b>		Fixed dimension	5/16" - 5/8"	45
<b>British Standard Fine Thread</b>		Fixed dimension	5/16" - 5/8"	45
<b>Unified National Coarse Thread</b>		Fixed dimension	1/4" - 1/2"	46
		with chamfer	1/4" - 3/4"	46
<b>Unified National Fine Thread</b>		Fixed dimension	1/4" - 1/2"	47
		with chamfer	1/4" - 3/4"	47
<b>NPT Thread</b>		Fixed dimension	1/16" - 3/4"	48
		with chamfer	1/16" - 3/4"	48
<b>Technical Data</b>	Information about circular thread milling			49
	Cutting data reference values			178

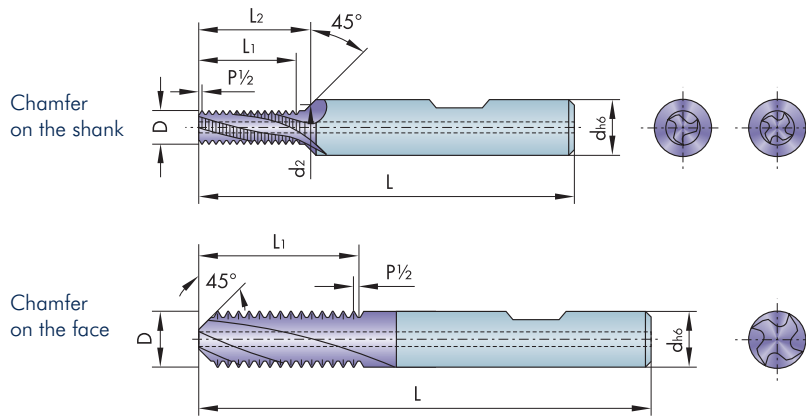
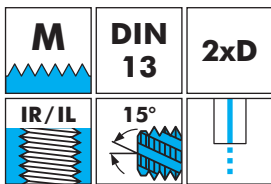
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 178



Thread	P mm	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								TINAMATIC		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
M3	0,50	2,40	42	7,00	4	2		168192		
M4	0,70	3,15	55	9,80	6	3		168195	168196	168197
M5	0,80	4,00	55	12,00	6	3		168198	168199	168200
M6	1,00	4,80	55	14,00	6	3		168201	168202	168203
M8	1,25	5,95	60	18,75	6	3	✓	168204	168205	168206
M10	1,50	7,95	70	22,50	8	3	✓	168207	168208	168209
M12	1,75	9,90	75	28,00	10	4	✓	168210	168211	168212
M14	2,00	11,60	85	32,00	12	4	✓	168213	168214	168215
M16	2,00	12,00	85	36,00	12	4	✓	168216	168217	168218
M18	2,50	14,00	90	42,50	14	4	✓	168219	168220	168221
M20	2,50	16,00	90	42,50	16	4	✓	168222	168223	168224

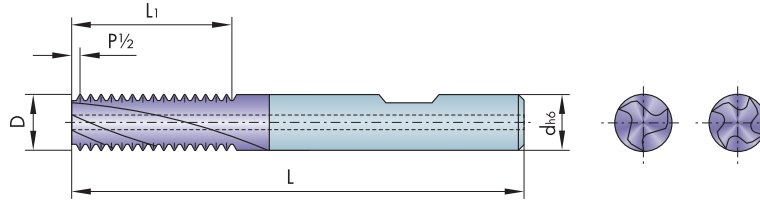
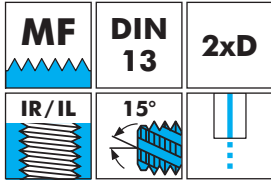
- Chamfer type
- Cutting Data see page 178



Thread	P mm	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d <sup>h6</sup> mm	d <sub>2</sub> mm	Number of edges	Internal coolant	Chamfer	Order No.	
											TINAMATIC	
											DIN 6535 Form HA	DIN 6535 Form HB
M5	0,80	4,00	62	12,70	13,35	8	5,3	3		on the shank	171556	171565
M6	1,00	4,80	62	14,00	15,55	8	6,3	3		on the shank	171557	171566
M8	1,25	6,50	74	18,75	20,60	10	8,3	3	✓	on the shank	171558	171567
M10	1,50	7,95	80	22,50	24,80	10	10,3	3	✓	on the shank	171559	171568
M12	1,75	9,90	90	28,00	30,60	14	12,3	4	✓	on the shank	171560	171569
M14	2,00	11,60	100	32,00	34,85	16	14,3	4	✓	on the shank	171561	171570
M16	2,00	11,95	90	37,60		12		4	✓	on the face	171562	171571
M18	2,50	13,95	110	37,50	41,40	20	18,3	4	✓	on the shank	171563	171572
M20	2,50	15,95	100	44,0		16		4	✓	on the face	171564	171573

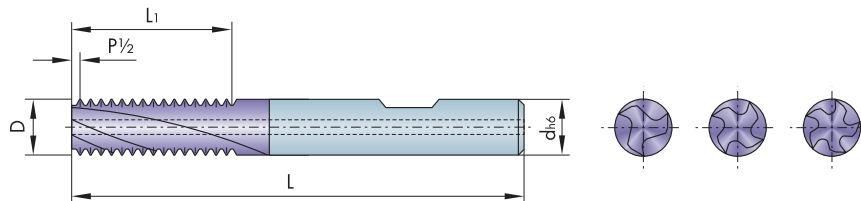
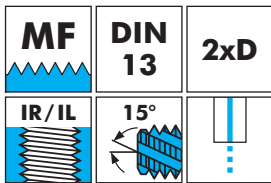
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 178



Thread	P mm	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
M5 x 0,5	0,50	4,00	55	11,50	6	3		168225	168226	168227
M6 x 0,75	0,75	4,80	55	14,25	6	3		168228	168229	168230
M8 x 1	1,00	5,95	60	19,00	6	3		168231	168232	168233
M10 x 1,25	1,25	7,95	70	21,50	8	3	✓	168234	168235	168236
M12 x 1	1,00	9,90	75	27,00	10	4	✓	168237	168238	168239
M12 x 1,25	1,25	9,90	75	27,50	10	4	✓	168240	168241	168242
M12 x 1,5	1,50	9,90	75	27,00	10	4	✓	168243	168244	168245
M14 x 1	1,00	11,60	85	31,00	12	4	✓	168246	168247	168248
M14 x 1,5	1,50	11,60	85	31,50	12	4	✓	168249	168250	168251
M16 x 1,5	1,50	11,85	85	34,50	12	4	✓	168252	168253	168254
M18 x 1,5	1,50	14,00	90	42,00	14	4	✓	168255	168256	168257
M20 x 1,5	1,50	16,00	90	42,00	16	4	✓	168258	168259	168260

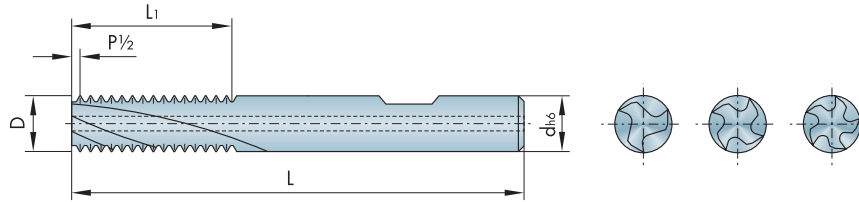
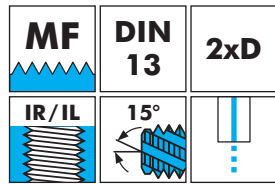
- Universal type
- Cutting Data see page 178



Thread from	P mm	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
> M10	0,50	8	70	12	8	3	✓	170779	170780	170781
> M11	0,75	8	70	12	8	3	✓	170782	170783	170784
> M12	1,00	10	75	16	10	4	✓	170785	170786	170787
> M14	1,00	12	85	20	12	4	✓	170791	170792	170793
> M18	1,00	16	90	25	16	5	✓	170800	170801	170802
> M22	1,00	20	105	32	20	5	✓	170812	170813	170814
> M14	1,50	10	75	16	10	4	✓	170788	170789	170790
> M16	1,50	12	85	20	12	4	✓	170794	170795	170796
> M20	1,50	16	90	25	16	5	✓	170803	170804	170805
> M24	1,50	20	105	32	20	5	✓	170815	170816	170817
> M16	2,00	12	85	20	12	4	✓	170797	170798	170799
> M20	2,00	16	90	25	16	5	✓	170806	170807	170808
> M24	2,00	20	105	32	20	5	✓	170818	170819	170820
> M24	3,00	16	90	25	16	5	✓	170809	170810	170811
> M27	3,00	20	105	32	20	5	✓	170821	170822	170823

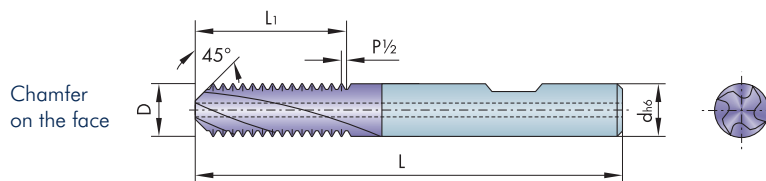
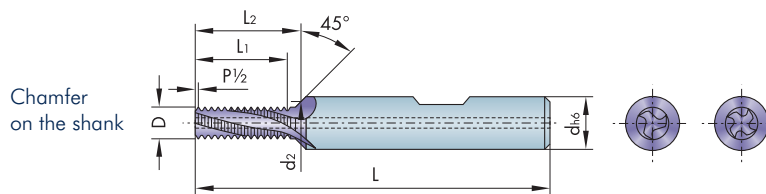
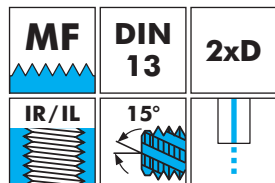
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Universal type
- Cutting Data see page 178



Thread from	P mm	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								FKN (uncoated)		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
> M10	0,5	8	70	12	8	3	✓	170826	170827	170828
> M11	0,75	8	70	12	8	3	✓	170829	170830	170831
> M12	1,0	10	75	16	10	4	✓	170832	170833	170834
> M14	1,0	12	85	20	12	4	✓	170838	170839	170840
> M18	1,0	16	90	25	16	5	✓	170847	170848	170849
> M22	1,0	20	105	32	20	5	✓	170859	170860	170861
> M14	1,5	10	75	16,5	10	4	✓	170835	170836	170837
> M16	1,5	12	85	21	12	4	✓	170841	170842	170843
> M20	1,5	16	90	25,5	16	5	✓	170850	170851	170852
> M24	1,5	20	105	33	20	5	✓	170862	170863	170864
> M16	2,0	12	85	20	12	4	✓	170844	170845	170846
> M20	2,0	16	90	26	16	5	✓	170853	170854	170855
> M24	2,0	20	105	32	20	5	✓	170865	170866	170867
> M24	3,0	16	90	27	16	5	✓	170856	170857	170858
> M27	3,0	20	105	33	20	5	✓	170868	170869	170870

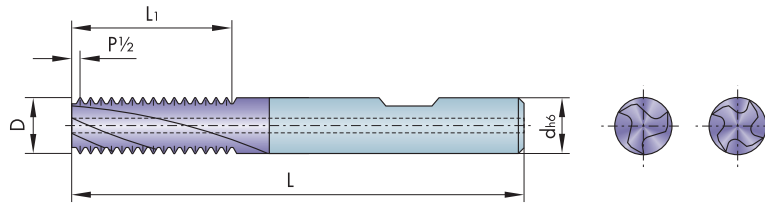
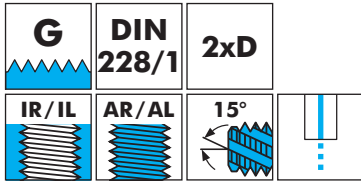
- Chamfer type
- Cutting Data see page 178



Thread	P mm	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d <sup>h6</sup> mm	d <sub>2</sub> mm	Number of edges	Internal coolant	Chamfer	Order No.	
											TINAMATIC	
											DIN 6535 Form HA	DIN 6535 Form HB
M8 x 1	1,0	6	74	19	21	10	8,3	3	✓	on the shank	171574	172376
M10 x 1	1,0	8	80	22	23,95	12	10,3	3	✓	on the shank	171575	172377
M10 x 1,25	1,25	8	80	22,5	24,6	12	10,3	3	✓	on the shank	171576	172378
M12 x 1	1,0	9,9	90	27	29	14	12,3	4	✓	on the shank	171577	172379
M12 x 1,25	1,25	9,9	90	27,5	29,6	14	12,3	4	✓	on the shank	171578	172380
M12 x 1,5	1,5	9,9	90	27	29,25	14	12,3	4	✓	on the shank	171579	172381
M14 x 1	1,0	11,6	100	31	33,15	16	14,3	4	✓	on the shank	171580	172382
M14 x 1,5	1,5	11,6	100	31,5	33,9	16	14,3	4	✓	on the shank	171581	172383
M16 x 1,5	1,5	12	90	36,05		12		4	✓	on the face	171582	172384
M18 x 1,5	1,5	14	110	39	42,2	20	18,3	4	✓	on the shank	171583	172385
M20 x 1,5	1,5	16	100	45,05		16		4	✓	on the face	171584	172386

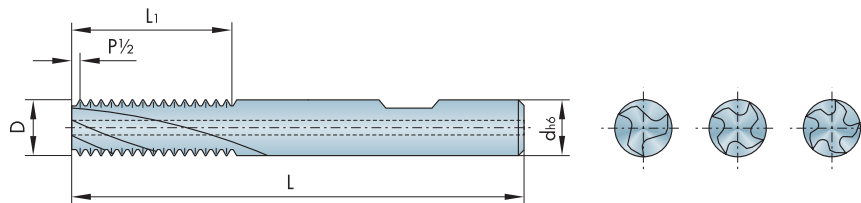
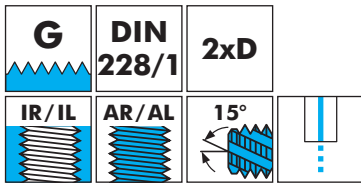
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 178



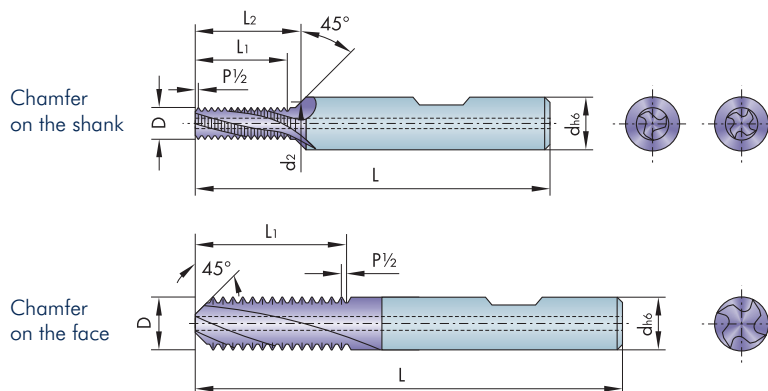
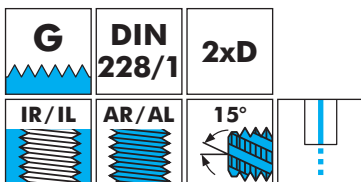
Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								TINAMATIC		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
G 1/8"	28	8,0	70	20,8	8	3	✓	168371	168372	168373
G 1/4"	19	9,9	75	28,0	10	4	✓	168374	168375	168376
G 3/8"	19	14,0	90	41,45	14	4	✓	168377	168378	168379
G 1/2"	14	16,0	90	43,5	16	4	✓	168380	168381	168382

- Universal type
- Cutting Data see page 178



Thread from	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								FKN (uncoated)		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
G 1/4 - 3/8"	19	10	75	16,0	10	4	✓	170770	170771	170772
G 1/2 - 7/8"	14	16	90	25,4	16	5	✓	170773	170774	170775
> G 1"	11	20	105	32,3	20	5	✓	170776	170777	170778

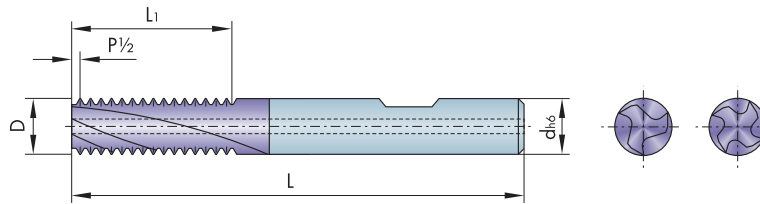
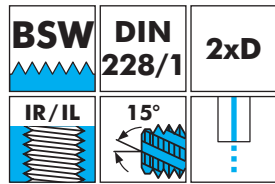
- Chamfer type
- Cutting Data see page 178



Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d <sup>h6</sup> mm	d <sub>2</sub> mm	Number of edges	Internal coolant	Chamfer	Order No.	
											TINAMATIC	
											DIN 6535 Form HA	DIN 6535 Form HB
G 1/16"	28	6	74	16,3	18,1	10	8,0	3	✓	on the shank	171585	172387
G 1/8"	28	7,95	80	21,8	23,5	12	10,0	3	✓	on the shank	171586	172388
G 1/4"	19	9,9	100	28,0	30,8	16	13,5	4	✓	on the shank	171587	172389
G 3/8"	19	13,95	90	37,5		14		4	✓	on the face	171588	172390
G 1/2"	14	15,95	100	47,38		16		4	✓	on the face	171589	172391
G 5/8"	14	17,95	110	41,0		18		4	✓	on the face	171590	172392

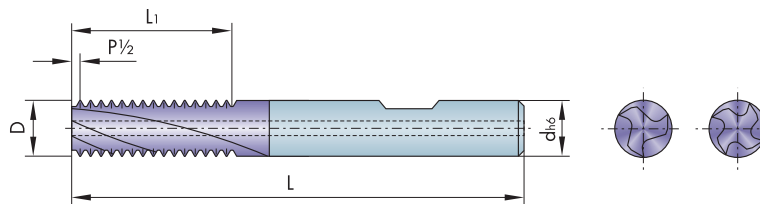
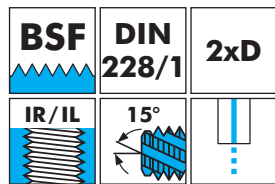
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 178



Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
5/16"	18	5,95	60	19,75	6	3	✓	168383	168384	168385
3/8"	16	5,95	60	20,60	6	3	✓	168386	168387	168388
7/16"	14	7,95	70	23,60	8	3	✓	168389	168390	168391
1/2"	12	7,95	70	23,30	8	3	✓	168392	168393	168394
5/8"	11	9,90	75	30,00	10	4	✓	168395	168396	168397

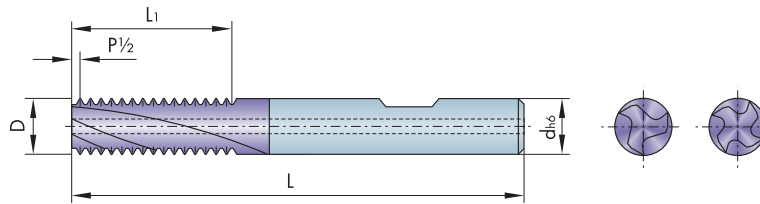
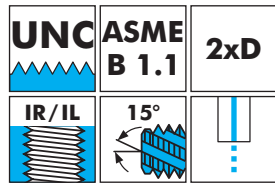
- Fixed dimension type
- Cutting Data see page 178



Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
5/16"	22	5,95	60	19,6	6	3	✓	168398	168399	168400
3/8"	20	5,95	60	19,0	6	3	✓	168401	168402	168403
7/16"	18	7,95	70	22,6	8	3	✓	168404	168405	168406
1/2"	16	7,95	70	23,8	8	3	✓	168407	168408	168409
5/8"	14	9,90	75	29,0	10	4	✓	168410	168411	168412

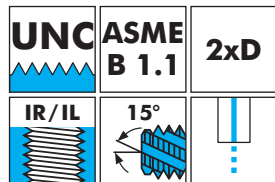
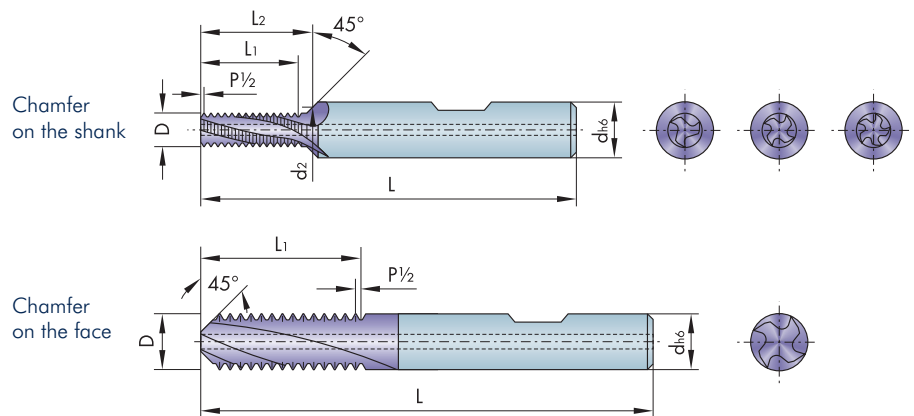
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 178



Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								DIN 6535 Form HA	TINAMATIC DIN 6535 Form HB	DIN 6535 Form HE
1/4" - 20	20	4,8	55	14	6	3		168413	168414	168415
5/16" - 18	18	5,95	60	19,7	6	3	✓	168416	168417	168418
3/8" - 16	16	7,95	70	23,8	8	3	✓	168419	168420	168421
7/16" - 14	14	7,95	70	23,6	8	3	✓	168422	168423	168424
1/2" - 13	13	9,9	75	29,3	10	4	✓	168425	168426	168427

- Chamfer type
- Cutting Data see page 178

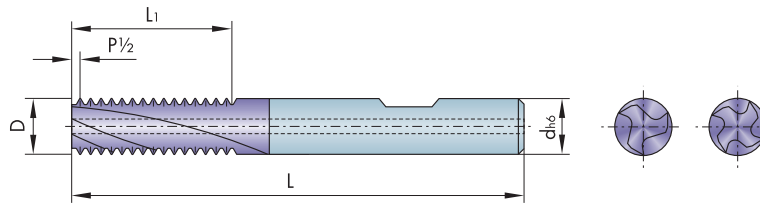
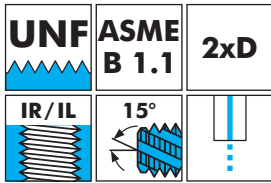


Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d <sup>h6</sup> mm	d <sub>2</sub> mm	Number of edges	Internal coolant	Chamfer	Order No.	
											DIN 6535 Form HA	TINAMATIC DIN 6535 Form HB
1/4" - 20	20	4,8	62	14	15,73	8	6,65	3		on the shank	171591	172393
5/16" - 18	18	5,95	74	19,7	21,9	10	8,25	3	✓	on the shank	171592	172394
3/8" - 16	16	7,95	80	23,8	25,85	12	9,83	3	✓	on the shank	171593	172395
7/16" - 14	14	7,95	90	23,6	26,5	14	11,43	3	✓	on the shank	171594	172396
1/2" - 13	13	9,9	90	29,3	32,1	14	13	4	✓	on the shank	171595	172397
9/16" - 12	12	11,8	100	33,9	36,6	16	14,61	4	✓	on the shank	171596	172398
5/8" - 11	11	12,7	90	38,7		14		4	✓	on the face	171597	172399
3/4" - 10	10	15,2	110	40,6	44,3	20	19,35	5	✓	on the shank	171598	172400



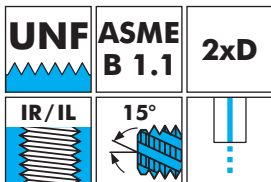
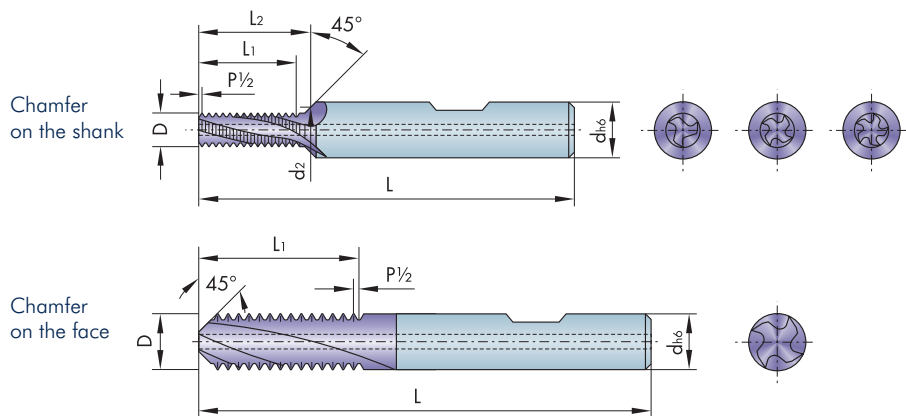
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 178



Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								TINAMATIC		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/4" - 28	28	4,8	55	14,5	6	3		168428	168429	168430
5/16" - 24	24	5,95	60	19,0	6	3	✓	168431	168432	168433
3/8" - 24	24	7,95	70	22,2	8	3	✓	168434	168435	168436
7/16" - 20	20	7,95	70	22,8	8	3	✓	168437	168438	168439
1/2" - 20	20	9,9	75	27,9	10	4	✓	168440	168441	168442

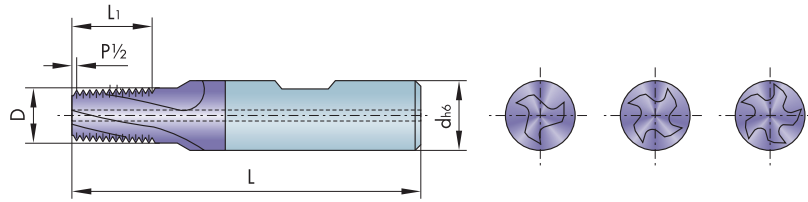
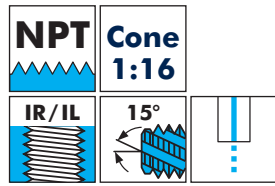
- Chamfer type
- Cutting Data see page 178



Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	L <sub>2</sub> mm	d <sup>h6</sup> mm	d <sub>2</sub> mm	Number of edges	Internal coolant	Chamfer	Order No.	
											TINAMATIC	
											DIN 6535 Form HA	DIN 6535 Form HB
1/4" - 28	28	4,8	62	14,5	16,2	8	6,65	3		on the shank	171599	172401
5/16" - 24	24	5,95	74	19,0	21	10	8,25	3	✓	on the shank	171600	172402
3/8" - 24	24	7,6	80	22,2	23	12	9,83	3	✓	on the shank	171601	172403
7/16" - 20	20	7,95	90	22,8	25,5	14	11,4	3	✓	on the shank	171602	172404
1/2" - 20	20	9,9	90	27,9	30,43	14	13	4	✓	on the shank	171603	172405
9/16" - 18	18	12	100	31,0	33,35	16	14,61	4	✓	on the shank	171604	172406
5/8" - 18	18	13,5	90	36,8		14		4	✓	on the face	171605	172407
3/4" - 16	16	17	110	39,7	42	20	19,35	5	✓	on the shank	171606	172408

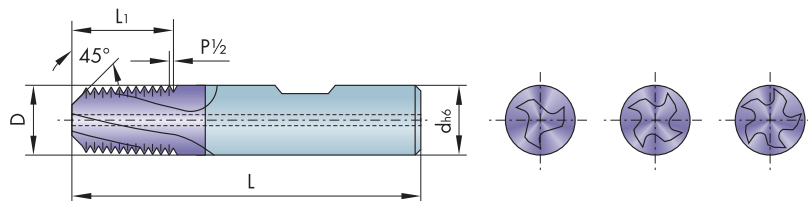
# SolidCUT Solid Carbide Circular Thread Milling Cutter

- Fixed dimension type
- Cutting Data see page 178



Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Order No.		
								TINAMATIC		
								DIN 6535 Form HA	DIN 6535 Form HB	DIN 6535 Form HE
1/16"	27	5,8	70	11,3	8	3	✓	170752	170753	170754
1/8"	27	7,6	75	11,3	10	3	✓	170755	170756	170757
1/4"	18	10,1	90	15,5	14	3	✓	170758	170759	170760
3/8"	18	12,8	90	15,5	16	4	✓	170761	170762	170763
1/2"	14	16,0	90	19,95	20	5	✓	170764	170765	170766
3/4"	14	19,5	90	19,95	20	5	✓	170767	170768	170769

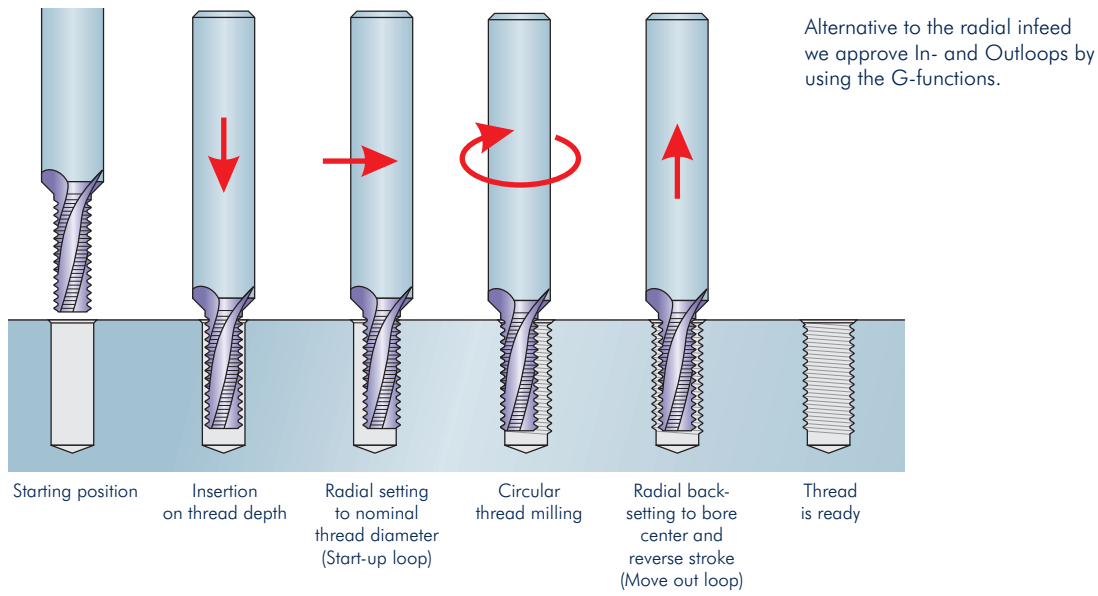
- Chamfer type
- Cutting Data see page 178



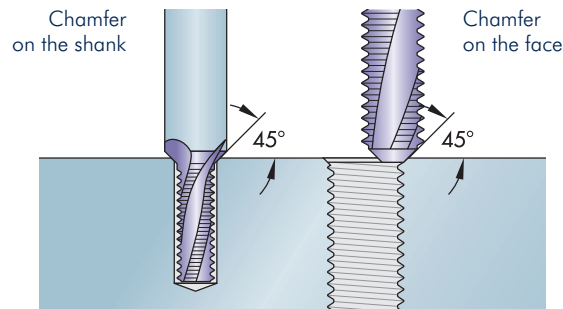
Thread	Pitch/"	D <sup>±0,02</sup> mm	L mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	Number of edges	Internal coolant	Chamfer	Order No.	
									TINAMATIC	
									DIN 6535 Form HA	DIN 6535 Form HB
1/4"	18	10,1	90	16,8	14	3	✓	on the face	171609	172411
3/8"	18	12,8	100	16,8	16	4	✓	on the face	171610	172412
1/2"	14	16,0	110	21,05	20	5	✓	on the face	171611	172413
3/4"	14	18,5	110	21,05	20	5	✓	on the face	171612	172414

SolidCUT

Machining Sequence



Types with chamfer



Large Thread Milling from M24



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Table of Contents

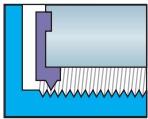
### mimaticSTC



#### STC Thread Milling System

M24+M27, UNC	from tap hole Ø 20,5 mm	58
M30	26 mm	59
M36, UNC	30 mm	60
M42, UNC	37 mm	61
M48, UNC	42,6 mm	62
M56, UNC	50 mm	63
M64, UNC	57,5 mm	64
M64, UNC	60 mm	65

### TriMILL



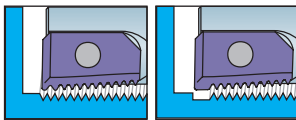
#### Thread Inserts

Grooving	67
Circlip grooves	67
G, BSW, BSF	68

#### Tool Holders

Type 01	68
Type 023	69
Type 013	70

### TrioCUT



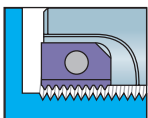
#### Thread Inserts

M	72+74
G, BSW, BSF	72+74

#### Tool Holders

Type 20	72
Type 25	73

**14,5 15 21 26**



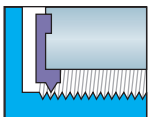
#### Thread Inserts

M	76-80
G, BSW, BSF	76-80
UNC, UNF	76-79
PG	76

#### Tool Holders

Type 14,5	75
Type 15	77
Type 21	78
Type 26	80

### PolyMILL



#### Thread Inserts

M	82
UN, NPT	82
G, BSW, BSF, UNC, UNF	83

#### Tool Holders

Type P20	84-85
Type P25	84-85

#### Technical Data

Notes to the circular thread milling	39
Programming example TrioCUT	36
Cutting data values	178-180
Carbide grades	118

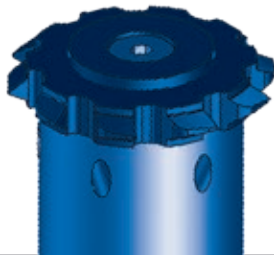
# mimatic Tool Systems is the Solution Provider for Large Threads

mimatic provides all reasonable technological alternatives for the large thread milling machine from our own production.

Our customers always find a solution at mimatic as solution provider for large threads among the aspects: **Efficiency, quality and cost.**

## STC-1 with 10 Edges

Biggest advantage for any long threads from M24: a **shorter process time** compared to cutters with inserts and **easier assembly**.



## PolyMILL 6 Edges, Types P2020 / P2526

Pitches from 1,5 to 5 mm. **Economic system with high performance.** The limitation is in the thread length, because the diameter of holder is limited. The use of STC-1 is recommended for higher performance and larger diameter of holder.



## STC-2 and STC-3

Significantly faster than STC-1, depending on length (pitch, material).



## TrioCUT

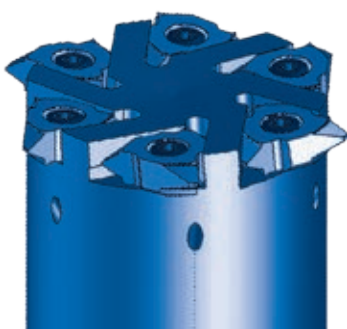
Optimal application for **fine threads** and/or **very short thread lengths.**



## TriMILL System 013/023

Since years successfully in use for large threads. The charging is done with 3, 6, or 8 indexable inserts. Cutting circle diameter: 32 / 38 / 50 / 63 / 90 mm.

According to the cutting circle diameter the **stiffnesses of the holders** are rising and suited for deep thread. The system is much **cheaper and flexible** and can be used even for grooves (see catalogue, section grooving) and other thread pitches.



## System 14,5 / 15 / 21 / 26

For short lengths of thread and very rigid clamping of workpiece and cutter.



## SolidCUT Thread Milling Cutters in S.C.

Useful for smaller threads (there are some overlaps in M24 to M30).

# mimaticSTC

## 'Sectional Thread Cutting' for High Quality Large Threads from M24

The **STC thread milling system\*** from mimatic was developed specifically for large threads from M24 upwards. For these threads, there is so far no optimal thread milling method. The production of large threads in large components were usually realized with large machines, which often had no 3D-control. Because of this technical reason, a classic thread milling operation is not possible. Therefore, on these machines the threads are often processed as a tapping operation.

This procedure has very serious disadvantages in regards to thread quality and tool breakage. Today large parts with large threads are produced more and more on modern machines, providing a 3D-control. However, the existing thread milling tools and procedures have limitations regarding these applications.

Usually two tool types are used:

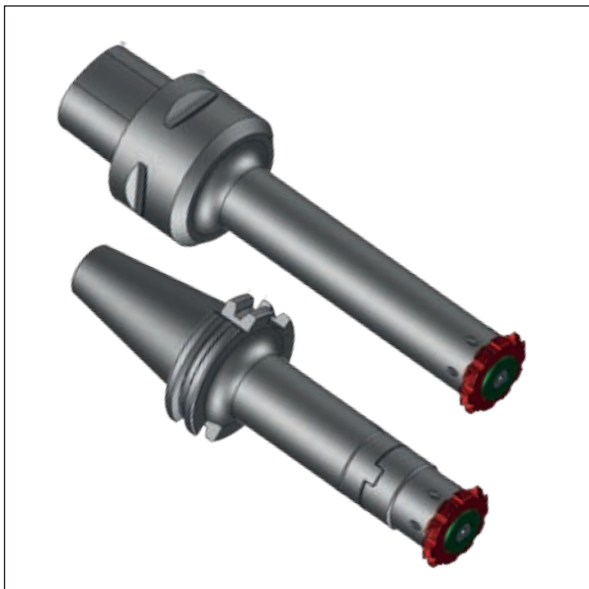
❶ **Milling Cutters with 6 Edges** with a outer diameter up to 30 mm, e.g. from the product category PolyMILL.

❷ **Multi-Tooth Thread Milling Inserts** which are assembled in the axial direction to the holder, with a length of up to about 30 mm. Several of these inserts are mounted on the holder, so that at least in theory, a high performance of this tool is achieved.

Due to the high cutting forces and variable tool pressures created these two processes are often problematic.

Because of these conditions tool deflection is often the result. This requires multiple machining operations to produce the proper threads.

\* Patent right protection is requested.



mimatic STC: Modulare tool concept





# mimaticSTC

## Shorter Processing Times at Very High Process Stability



In the STC thread milling operation, inserts with a variety of teeth are used. The distance between the inserts are adapted to the thread profile. The thread is machined on its total length in sections, but at the same time.

The advantage of STC over the example ❶ is, that the process times can be significantly reduced. The processing time on particularly capital-intensive machines for large parts will be reduced drastically. Compared with the example ❷, STC has the decisive advantage, that the cutting forces occur evenly and the fluctuating cutting forces may not lead to the excitation of vibrations. At the same time the total cutting pressures are significantly reduced, resulting in a higher quality of

thread. The technological advantage of STC to the described alternatives is in the geometric arrangement of the teeth to the thread milling operation and the resulting power distribution.

When compared to solid carbide thread milling cutters, which could be equipped with a similar number of teeth, the decisive advantage lies in the higher frequency of the STC circular movement, compared to all other methods.

STC offers larger diameters of the holder due to the geometric conditions. This leads to increased stiffness of the system as well as a significant improvement by the resulting stability of the rotary function by the frequency of the circular motion.

**STC is the first thread milling system, which was developed specifically for the production of large threads.**

# mimaticSTC

## Production of Large Threads – Tapping versus mimatic STC



It is well known, that the quality of the thread flanks in the tapping is to assess very critically. This is however particularly problematic for functional threads in large part productions.

The example of a housing for wind power plants makes this clear: The thread flanks in the tapping are ridged and very rough. When body parts with built-in seals are now connected, they are tighten with a specific torque on bolts. If these torques are reached, the housing is also sealed under the load of the components. When the housing in use now is under load changes, so-called setting effects in the thread flanks occur. This means, that smaller plastic deformations of the rough surface lead to a reduction of the original pretension in the bolts. This can cause, that the housing parts are not more

dense under load, because the pretension of the bolts is missing.

This problem could have far-reaching consequences, e.g. for wind power plants, when they become leaky at high levels of wind and storm after years of setting effect and water occurs. The life cycle of the entire system would thereby called into question, which of course strongly affects the overall economy of the plant.

**Threads produced by STC could exclude these risks.**



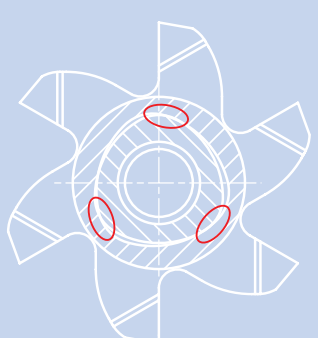
# mimaticSTC

## Quadrogon\*-Interface For the New Generation of mimatic Tools

Since more than 30 years, mimatic has experience in the development and production of interfaces between tool holders and carbide inserts for milling.


The most successful of these developments was the mimatic P-interface, which is today in use in many countries in the world.

This interface has a front face with a polygonal power transmission of the cutting forces. The so-called triple-polygon is statically determined and has a self-decentralization effect of the carbide insert against the holder.



**Advantages**

- Concentricity over 3-point polygon
- Power transmission by 3-point polygon
- High stability through closed circular ring
- High resistance against breakage during interrupted cut

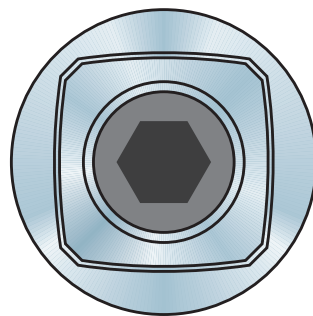
 = Transmission zones

At high cutting forces the metal of the holder is deformed slightly elastic and thus enlarges the force transferring surface. Which in turn results in a declining effect on stress peaks and featured the central superiority of this interface.

\* Patent-protected.

The main features of the previous mimatic P-interface have been maintained in the development of the **Quadrogon** interface.

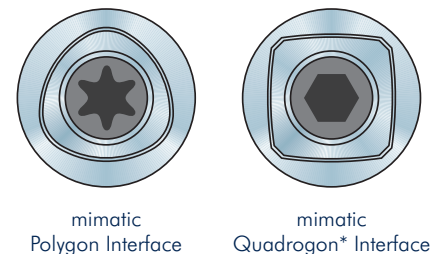
The front face as well as the declining behavior against stress peaks are also central features. The fact, that there are four polygonal elements in the Quadrogon interface causes, that the cutting forces can be shared on a larger area and thus stress peaks can be reduced still more effectively.



The Quadrogon also has the advantage that its geometry reduces vulnerabilities in the solid carbide insert. This means, that higher forces can be transferred for same diameters. A further advantage of the Quadrogon is, that the milling inserts can more easily be removed from the interface. The geometric conditions of the Quadrogon prevents a tightening of the milling insert on the tool holder.

The largest reservation against the Quadrogon interface was the possible over-determination of the interface and thus the threat to the high concentricity quality of mimatic. This concern could be resolved completely.

The narrow production tolerances of the Quadrogon of a few  $\mu$  are compensated by the elastic behaviour of the holder. By way of comparison, is a chair with four legs, whose contact points are statically over-determined. Under load due to weight, the structure of the chair is yielding elastic so that the load spreading on all four legs is almost evenly. The functionality of the Quadrogon is to understand also.

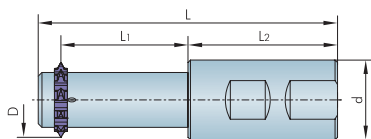


The same principle is used also for static over-determined interfaces, such as for example the HSK interface. Elastic deformations at the cone will cause, that the cone can take the torque by means of adhesion and clamping and still ensures a front face.

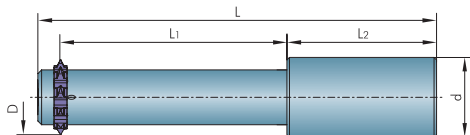
The choice of right polygons and the correct form of polygon was particularly important in the design of the Quadrogon interface through the mimatic engineers, because a straight line would be a solution that would not have the desired effect.

## Milling System for Threads from Drill Hole Dia. 20,5 mm (≥ M24)

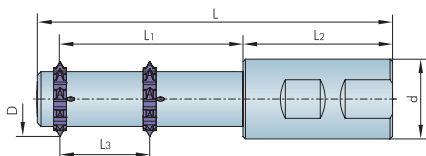
**STC 1.0**  
(Steel)



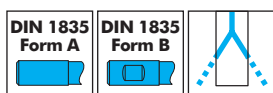
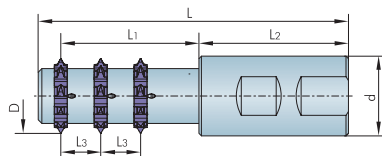
**STC 1**  
(Carbide)



**STC 2**  
(Steel)



**STC 3**  
(Steel)



Type	Shank DIN	Complete holder without Inserts Order No.	dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	Thread Inserts required	Spare Parts			
										2 Set of Distance Sleeves	4 Clamping disc	5 Clamping Screw	Screw-driver
STC 1.0	1835 A	160056	16	76	22	50	–	20	1	–	–	163842	178296
	1835 B	163707	16	76	22	50	–	20	1	–	–	163842	178296
STC 1	1835 A	182043	20	106	50	51	–	20	1	–	159784	163852	178296
STC 2 2xD	1835 A	159876	20	105	49	51	24	20	2	159796	159784	163852	178296
	1835 B	159875	20	105	49	51	24	20	2	159796	159784	163852	178296
STC 3 1,5xD	1835 A	159862	20	93	37	51	12	20	3	159789	159784	163852	178296
	1835 B	159861	20	93	37	51	12	20	3	159789	159784	163852	178296

Screw torques max.  
163842 SW3 3,8 Nm  
163852 SW3 6,0 Nm

## Milling Inserts

■ Cutting Data see page 180

Full form **M24** **M27**

Pitch mm	Number of teeth	D mm	t mm	Order No TINAMATIC
3	10	20	1,745	159757

Partial form **M** **MF** **UN** **UNC**

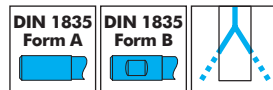
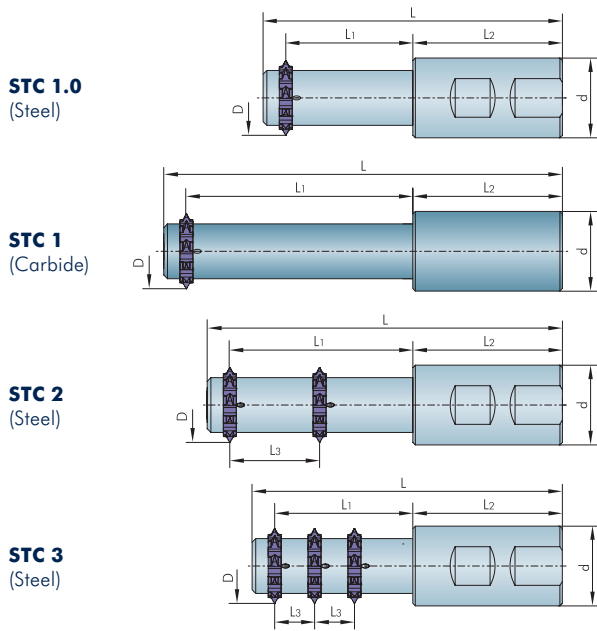
Pitch mm   G/°	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	10	20	181817
3-6   9-4	10	20	181818

Full form **UNC**

Note: Distance sleeves please request separately !

Pitch G/° UNC	Number of teeth	D mm	t mm	Order No TINAMATIC
8	10	20	1,809	180331
7	10	20	2,043	156760

# Milling System for Threads from Drill Hole Dia. 26 mm (≥ M30)

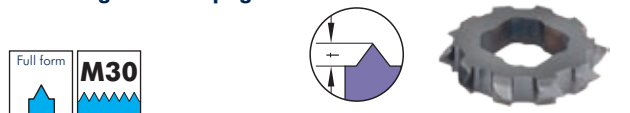


Type	Shank DIN	① Complete holder without Inserts Order No.	dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	Thread Inserts required	② Spare Parts			
										② Set of Distance Sleeves	④ Clamping disc	⑤ Clamping Screw	Screw-driver
STC 1.0	1835 A	160058	20	92	37	51	–	24	1	–	–	163844	178297
	1835 B	163709	20	92	37	51	–	24	1	–	–	163844	178297
STC 1	1835 A	182042	20	126	70	51	–	24	1	–	159785	163852	178296
STC 2 2xD	1835 A	159878	20	118	62	51	31,5	24	2	159797	159785	163852	178296
	1835 B	159877	20	118	62	51	31,5	24	2	159797	159785	163852	178296
STC 3 1,5xD	1835 A	159864	20	102	46	51	14	24	3	159790	159785	163852	178296
	1835 B	159863	20	102	46	51	14	24	3	159790	159785	163852	178296

Screw torques max.  
163844 SW4 24,5 Nm  
163852 SW3 6,0 Nm

## Milling Inserts

■ Cutting Data see page 180



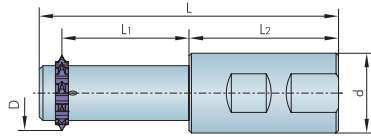
Pitch mm	Number of teeth	D mm	t mm	Order No TINAMATIC
3,5	10	24	1,982	159758



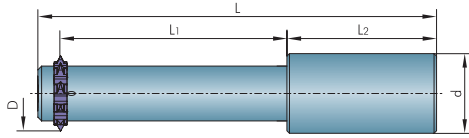
Pitch mm   G/°	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	10	20	181726
3-6   9-4	10	20	181730

## Milling System for Threads from Drill Hole Dia. 30 mm (≥ M36)

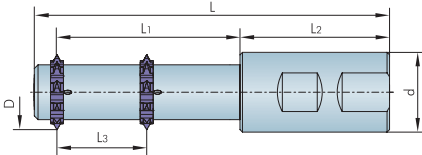
**STC 1.0**  
(Steel)



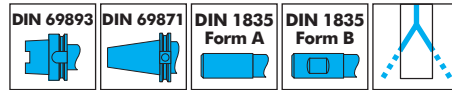
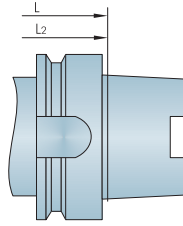
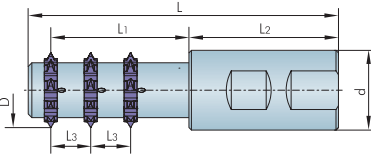
**STC 1**  
(Carbide)



**STC 2**  
(Steel)



**STC 3**  
(Steel)

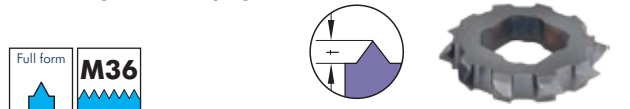


Type	Shank DIN	① Order No.	Complete holder without Inserts							Thread Inserts required	Spare Parts			
			dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	② Set of Distance Sleeves		④ Clamping disc	⑤ Clamping Screw	Screw-driver	
STC 1.0	1835 A	160059	20	98	42,5	51	-	30	1	-	175027	163850	178296	
	1835 B	163710	20	98	42,5	51	-	30	1	-	175027	163850	178296	
STC 1 3xD	1835 A	160178	32	180,1	110	61	-	30	1	-	159786	114402	178640	
	HSK 100	156489	-	229	110	110	-	30	1	-	159786	114402	178640	
	SK 50	156490	-	209	110	90	-	30	1	-	159786	114402	178640	
STC 2 2xD	1835 A	159880	32	144,5	73,5	62	36	30	2	159798	159786	114523	178640	
	1835 B	159879	32	144,5	73,5	62	36	30	2	159798	159786	114523	178640	
STC 3 1,5xD	1835 A	159866	32	126,5	55,4	62	16	30	3	159791	159786	114523	178640	
	1835 B	159865	32	126,5	55,4	62	16	30	3	159791	159786	114523	178640	

Screw torques max.  
163850 SW3 6,0 Nm  
114402 SW6 24,5 Nm  
114523 SW6 24,5 Nm

## Milling Inserts

■ Cutting Data see page 180



Pitch mm	Number of teeth	D mm	t mm	Order No TINAMATIC
4	10	30	2,263	159759



Pitch mm   G/"	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	10	30	181732
3-6   9-4	10	30	181733

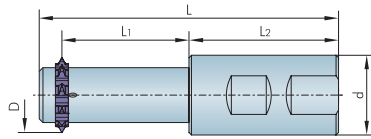


Note: Distance sleeves please request separately !

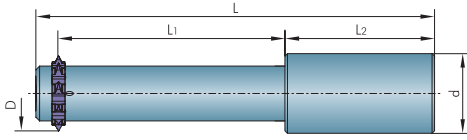
Pitch G/\" UNC	Number of teeth	D mm	t mm	Order No TINAMATIC
6	10	28	2,454	156761

# Milling System for Threads from Drill Hole Dia. 37 mm (≥ M42)

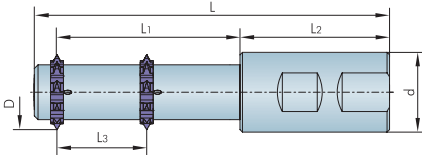
**STC 1.0**  
(Steel)



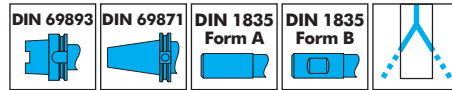
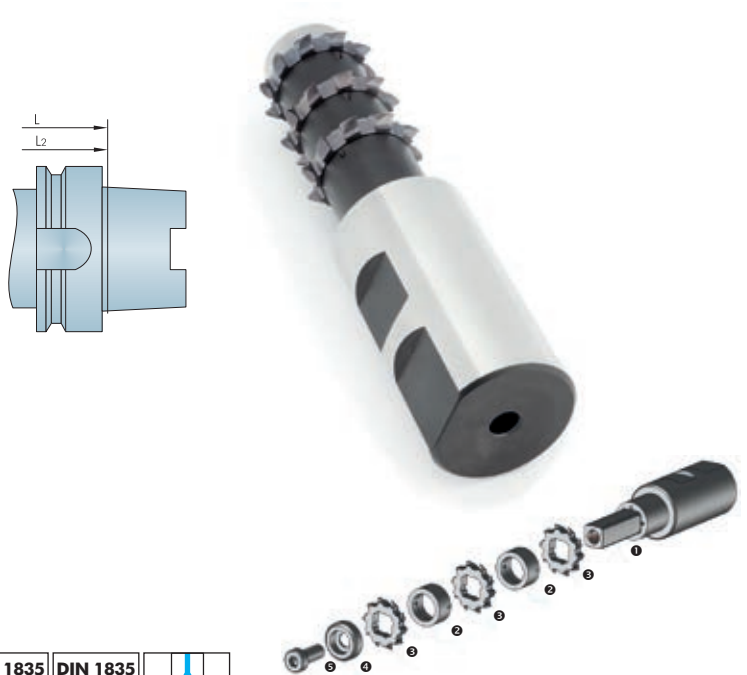
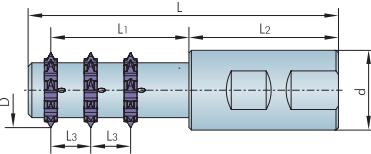
**STC 1**  
(Carbide)



**STC 2**  
(Steel)



**STC 3**  
(Steel)

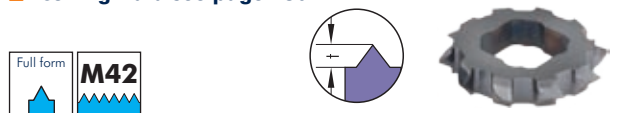


Type	Shank DIN	1 Order No.	Complete holder without Inserts							Thread Inserts required	Spare Parts			
			dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	2 Set of Distance Sleeves		4 Clamping disc	5 Clamping Screw	Screw-driver	
STC 1.0	1835 A	160052	25	117,5	52,9	60	-	36	1	-	175027	163850	178296	
	1835 B	163703	25	117,5	52,9	60	-	36	1	-	175027	163850	178296	
STC 1 3xD	1835 A	160179	32	200,9	130	61	-	36	1	-	159787	114523	178640	
	HSK 100	156487	-	249,4	130	110	-	36	1	-	159787	114523	178640	
	SK 50	156488	-	229,4	130	90	-	36	1	-	159787	114523	178640	
STC2 2xD	1835 A	159882	32	158,5	88	61	40,5	36	2	159799	159787	114523	178640	
	1835 B	159881	32	158,5	88	61	40,5	36	2	159799	159787	114523	178640	
STC 3 1,5xD	1835 A	159868	32	137,5	67	61	22,5	36	3	159792	159787	114523	178640	
	1835 B	159867	32	137,5	67	61	22,5	36	3	159792	159787	114523	178640	

Screw torques max.  
163850 SW3 6,0 Nm  
114523 SW6 24,5 Nm

## Milling Inserts

■ Cutting Data see page 180



Pitch mm	Number of teeth	D mm	t mm	Order No TINAMATIC
4,5	10	36	2,553	159760



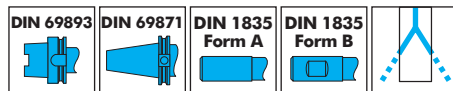
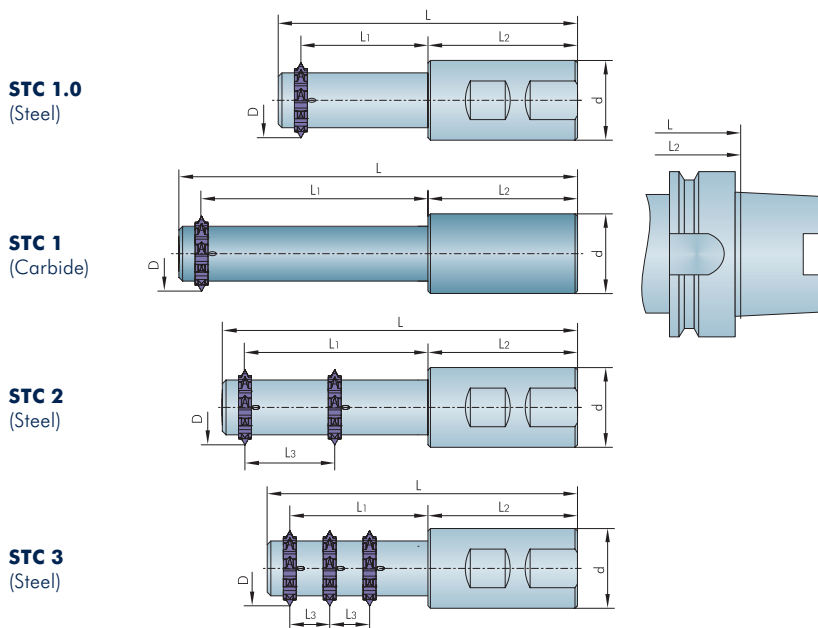
Pitch mm   G/"	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	10	36	182040
3-6   9-4	10	36	182041



Note: Distance sleeves please request separately !

Pitch G/" UNC	Number of teeth	D mm	t mm	Order No TINAMATIC
5	10	36	2,979	156762

## Milling System for Threads from Drill Hole Dia. 42,6 mm (≥ M48)



Type	Shank DIN	① Order No.	Complete holder without Inserts							Thread Inserts required	Spare Parts			
			dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	② Set of Distance Sleeves		④ Clamping disc	⑤ Clamping Screw	Screw-driver	
STC 1.0	1835 A	160053	32	130	58	67	–	40	1	–	163845	163848	178296	
	1835 B	163704	32	130	58	67	–	40	1	–	163845	163848	178296	
STC 1 3xD	1835 A	160180	32	221	150	61	–	40	1	–	159788	114523	178640	
	HSK 100	156486	–	270	150	110	–	40	1	–	159788	114523	178640	
	SK 50	156485	–	250	150	90	–	40	1	–	159788	114523	178640	
STC 2 2xD	1835 A	159884	32	170	98,4	62	50	40	2	159801	159788	114523	178640	
	1835 B	159883	32	170	98,4	62	50	40	2	159801	159788	114523	178640	
STC 3 1,5xD	1835 A	159870	32	147	75,4	62	25	40	3	159793	159788	114523	178640	
	1835 B	159869	32	147	75,4	62	25	40	3	159793	159788	114523	178640	

Screw torques max.  
163848 SW3 10,5 Nm  
114523 SW6 24,5 Nm

## Milling Inserts

■ Cutting Data see page 180

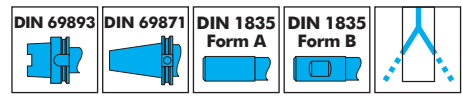
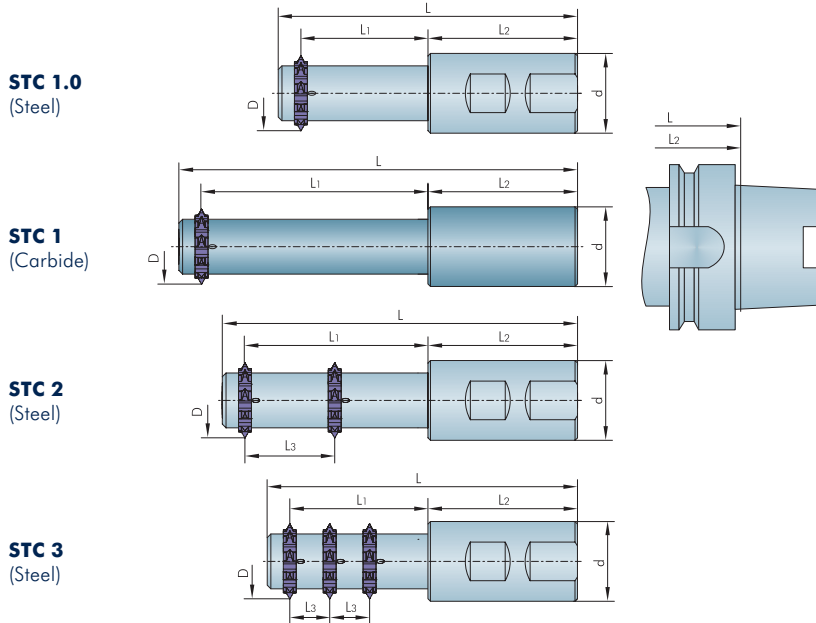


Pitch mm	Number of teeth	D mm	t mm	Order No TINAMATIC
5	10	40	2,836	159761

Pitch mm   G/"	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	10	40	159836
3-6   9-4	10	40	180440



# Milling System for Threads from Drill Hole Dia. 50 mm (≥ M56)



Type	Shank DIN	1 Order No.	Complete holder without Inserts							Thread Inserts required	Spare Parts			
			dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	2 Set of Distance Sleeves		4 Clamping disc	5 Clamping Screw	Screw-driver	
STC 1.0	1835 A	160053	32	130	58	67	-	40	1	-	163845	163848	178296	
	1835 B	163704	32	130	58	67	-	40	1	-	163845	163848	178296	
STC 1 3xD	1835 A	160180	32	221	150	61	-	40	1	-	159788	114523	178640	
	HSK 100	156486	-	270	150	110	-	40	1	-	159788	114523	178640	
	SK 50	156485	-	250	150	90	-	40	1	-	159788	114523	178640	
STC 2 2xD	1835 A	159886	32	186	114,4	62	55	40	2	159802	159788	114523	178640	
	1835 B	159885	32	186	114,4	62	55	40	2	159802	159788	114523	178640	
STC 3 1,5xD	1835 A	159872	32	158	86,4	62	27,5	40	3	159794	159788	114523	178640	
	1835 B	159871	32	158	86,4	62	27,5	40	3	159794	159788	114523	178640	

Screw torques max.  
163848 SW3 10,5 Nm  
114523 SW6 24,5 Nm

## Milling Inserts

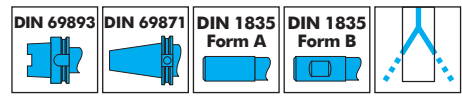
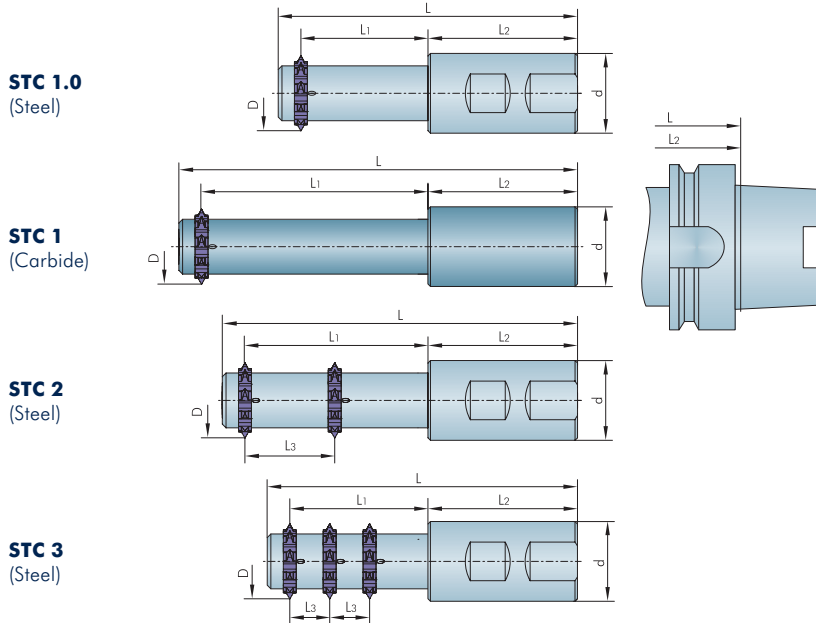
■ Cutting Data see page 180



Pitch mm	Number of teeth	D mm	t mm	Order No TINAMATIC
5,5	10	40	3,106	159762

Pitch mm   G/"	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	10	40	159836
3-6   9-4	10	40	180440

## Milling System for Threads from Drill Hole Dia. 57,5 mm (≥ M64)

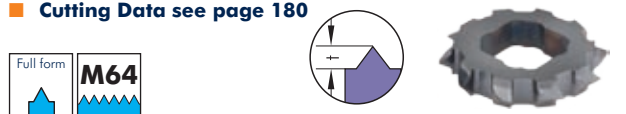


Type	Shank DIN	① Order No.	Complete holder without Inserts							Thread Inserts required	Spare Parts			
			dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	② Set of Distance Sleeves		④ Clamping disc	⑤ Clamping Screw	Screw-driver	
STC 1.0	1835 A	160053	32	130	58	67	-	40	1	-	163845	163848	178296	
	1835 B	163704	32	130	58	67	-	40	1	-	163845	163848	178296	
STC 1 3xD	1835 A	160180	32	221	150	61	-	40	1	-	159788	114523	178640	
	HSK 100	156486	-	270	150	110	-	40	1	-	159788	114523	178640	
	SK 50	156485	-	250	150	90	-	40	1	-	159788	114523	178640	
STC 2 2xD	1835 A	159888	32	202	130,4	62	66	40	2	159803	159788	114523	178640	
	1835 B	159887	32	202	130,4	62	66	40	2	159803	159788	114523	178640	
STC 3 1,5xD	1835 A	159874	32	170	98,4	62	30	40	3	159795	159788	114523	178640	
	1835 B	159873	32	170	98,4	62	30	40	3	159795	159788	114523	178640	

Screw torques max.  
163848 SW3 10,5 Nm  
114523 SW6 24,5 Nm

## Milling Inserts

■ Cutting Data see page 180

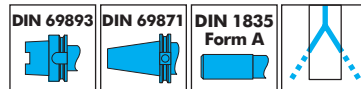
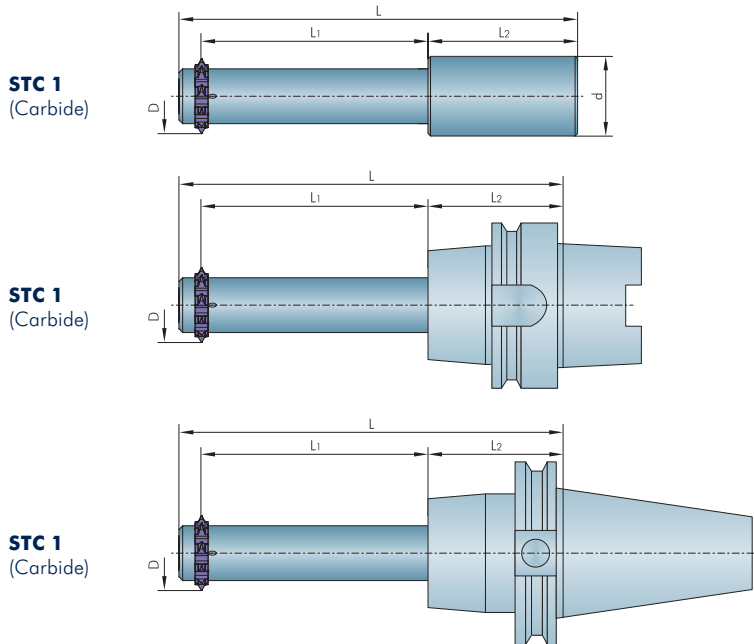


Pitch mm	Number of teeth	D mm	t mm	Order No TINAMATIC
6	10	40	3,415	159763



Pitch mm   G/°	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	10	40	159836
3-6   9-4	10	40	180440

# Milling System for Threads from Drill Hole Dia. 60 mm (≥ M64)



		Complete holder without Inserts									Spare Parts			
Type	Shank DIN	① Order No.	dh6 mm	L mm	L1 mm	L2 mm	L3 mm	D mm	Thread Inserts required	② Set of Distance Sleeves	④ Clamping disc	⑤ Clamping Screw	Screw-driver	
STC 1 3xD	1835 A	182044	40	299	200	88	–	50	1	–	182775	114523	178640	
	HSK 100	182715	–	351	200	140	–	50	1	–	182775	114523	178640	
	SK 50	182716	–	311	200	100	–	50	1	–	182775	114523	178640	

Screw torques max.  
114523 SW6 24,5 Nm

## Milling Inserts

■ Cutting Data see page 180



Pitch mm   G/"	Number of teeth	D mm	Order No TINAMATIC
1-3   24-9	12	50	181735
3-6   9-4	12	50	181736
5-8   6-3	12	50	181737

# TriMILL

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» Driven Tool Holders

## Circular Milling Tools for Large Threads

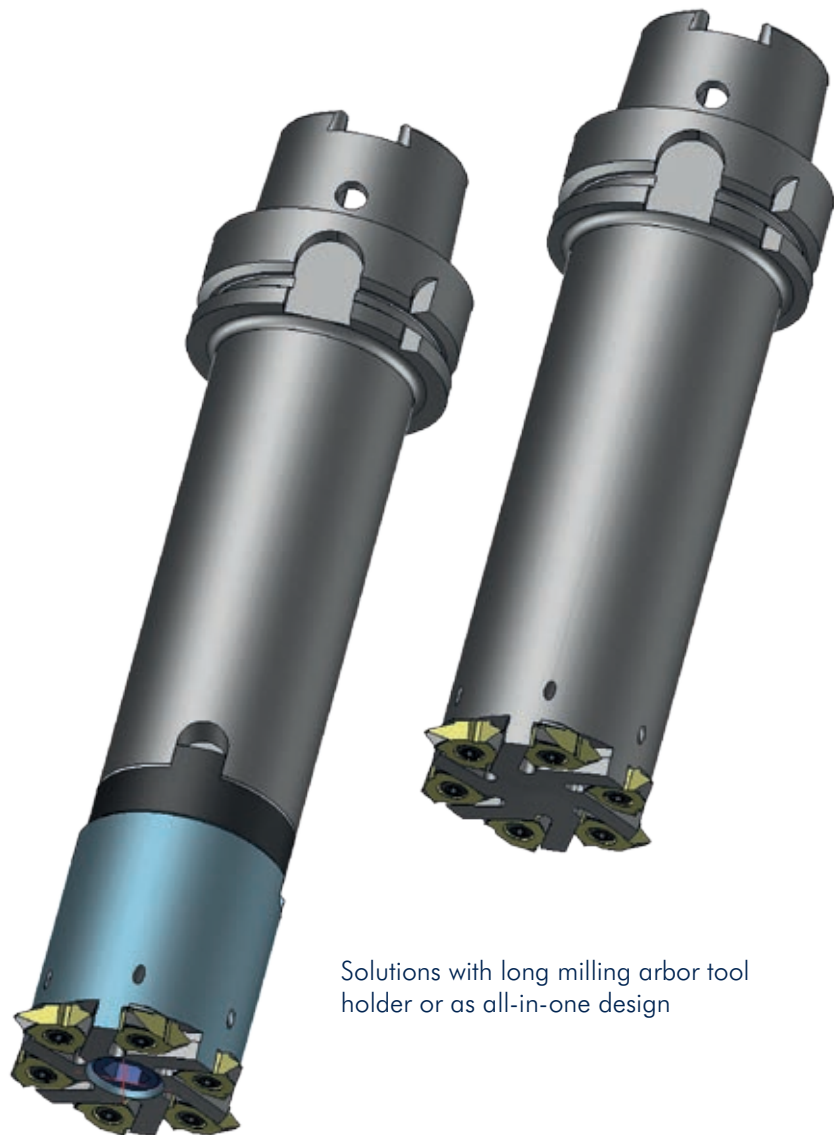


### TriMILL System 013/023

Since years successfully in use for large threads. The charging is done with 3, 6, or 8 indexable inserts. Cutting circle diameter: 32 / 38 / 50 / 63 / 90 mm.

According to the cutting circle diameter the **stiffnesses of the holders** are rising and suited for deep thread.

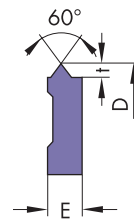
The system is much **cheaper and flexible** and can be used even for grooves (see catalogue, section grooving) and other thread pitches.



Solutions with long milling arbor tool holder or as all-in-one design

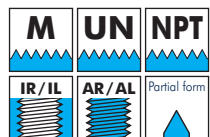
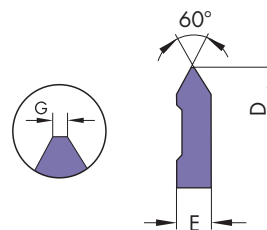
# Thread Milling

- Insert holder see page 68-70
- Cutting data see page 179



Type	Pitch	D mm	E mm	t mm	Order No.	
					K10	TINAMATIC
01	1,0	23,0	4,00	0,578	141265	141317
	1,5	23,0	4,00	0,864	141311	141291
	2,0	23,0	4,00	1,159	141284	141312
	2,5	23,0	4,00	1,444	141286	141287
	3,0	23,0	4,00	1,728	141303	141339
	3,5	23,0	4,00	2,023	141344	141300
	4,0	23,0	4,00	2,308	141335	141347
	4,5	23,0	6,50	2,602	141359	141365
	5,0*	23,0	6,50	2,887	141349	141342
	5,5*	23,0	6,50	3,182	106874	141350
	6,0*	23,0	6,50	3,467	141338	141369
023	1,5	17,5	5,00	0,864	142005	142020
	2,0	17,5	5,00	1,159	141975	142003
	2,5	17,5	5,00	1,444	142027	141989
	3,0	17,5	5,00	1,728	141987	141988
	4,0	17,5	5,00	2,308	142015	142028
	4,5**	17,5	5,00	2,602	141971	141998
	5,0**	17,5	6,00	2,887	142040	142009
	5,5**	17,5	6,00	3,128	141999	142032
013	6,0**	17,5	6,00	3,467	142021	142000
	1,5	23,0	6,50	0,864	141923	141920
	2,0	23,0	6,50	1,159	141950	141910
	2,5	23,0	6,50	1,444	141953	141935
	3,0	23,0	6,50	1,728	141959	141943
	3,5	23,0	6,50	2,023	141960	141961
	4,0	23,0	6,50	2,308	141945	141947
	4,5	23,0	6,50	2,602	141936	141964
5,0	23,0	6,50	2,887	141962	141955	
6,0	23,0	6,50	3,467	141944	141976	

\* Caution: Not suitable for cutters no. 123415, 170320, 123416, 123441.  
\*\* Caution: Not suitable for cutters no. 123462.

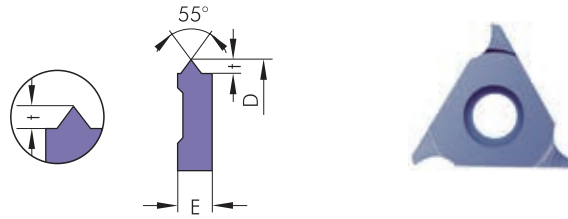
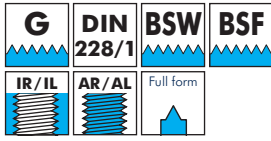


Type	Pitch	D mm	E mm	G mm	Order No.	
					K10	TINAMATIC
01	1-4,0	23,0	4,0	0,10	141329	141366
023	1-3,5	17,5	5,0	0,10	142001	141996
	3-6,0*	17,5	6,0	0,25	142049	142010
013	1-3,0	23,0	6,5	0,10		141969
	3,5-6	23,0	6,5	0,40		141951

\* Caution: Not suitable for cutters no. 123462 123441.

## Thread Milling

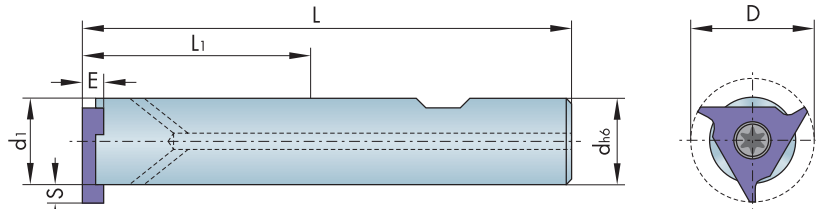
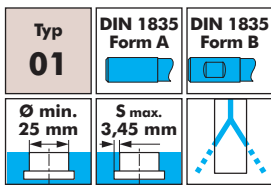
- Insert holder see page 68-70
- Cutting data see page 179



Type	Pitch / "	D mm	E mm	t mm	Order No.	
					K10	TINAMATIC
01	11	23,0	4,00	1,494	141384	141381
023	11	17,5	5,00	1,494	107104	142022
013	11	23,0	6,50	1,494	107098	141941

## Circular Milling Tools

- Inserts see page 67-68
- Cutting data see page 179
- Carbide grades see page 118



Order No.	Form	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	E mm	L mm	L1 mm	Shaft	Spare part No.	
											Screw-driver	Screw
123412	B	25	23	16	16	3,45	4	91,00	42,5	Steel	T20 IP 111594	107551
123414	B	25	23	16	16	3,45	4	120	71,5	Steel		
123415	A	25	23	20	17	3	4	97,00	45	Steel		
170320	A	25	23	16	17	3	4	141	92,5	Carbide		
123416	B	25	23	16	17	3	4	141	92,5	Carbide		
123440	A	25	23	16	16	3,45	4	115	-	Carbide		
123441	A	25	23	16	16	3,45	4	152,5	-	Carbide		

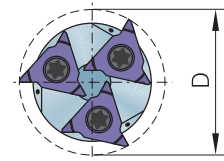
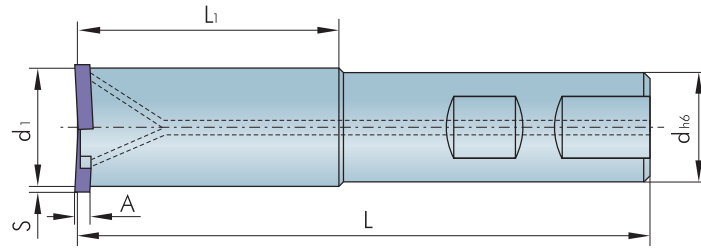
Screw torque 5,5 Nm

## Circular Milling Tools

- Inserts see page 67-68
- Cutting data see page 179
- Carbide grades see page 118

Typ **023** **DIN 1835 Form B**

Ø min. 33 mm S max. 2,6 mm



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	A mm	L mm	L1 mm	Inserts	Shaft
123462	33	32	25	26,8	2,6	5	125	67	3	Steel

Spare part No.

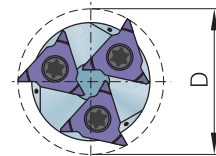
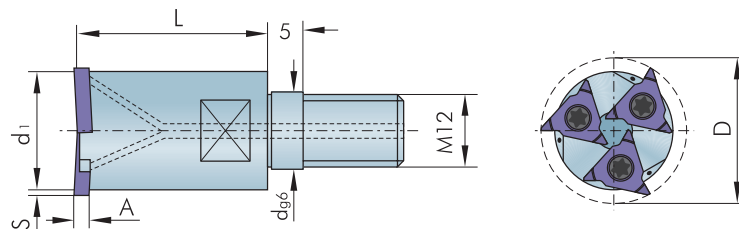
<b>T15 IP</b> Screw-driver	Screw
111671	107547

Screw torque max. 3,8 Nm

Please adapt cutting data to overhangs length

Typ **023**

Ø min. 33 mm S max. 3,4 mm

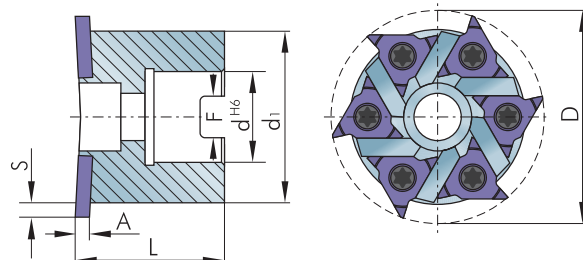
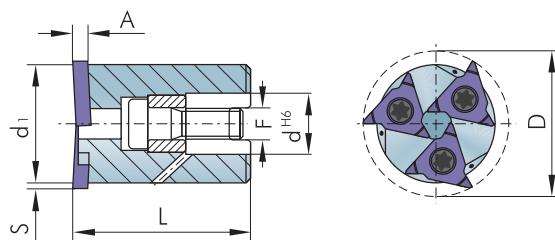


Order No.	Bore Ø min.	D mm	dg6 mm	d1 mm	Smax. mm	A mm	L mm	Inserts	Shaft
123465	33	32	12,5	24,3	3,8	5	40	3	Steel

Spare part No.

<b>T15 IP</b> Screw-driver	Screw
111671	107547

Screw torque max. 3,8 Nm



Typ **023**

Ø min. 40 mm S max. 4,0 mm

Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	A mm	F mm	L mm	Inserts
123464	40	38	16	31	3,4	5,0	8,4	46	3
123461*	55	50	22	42	3,9	5,0	10,4	40	6

Accessories

Key

134984

Spare part No.

<b>T15 IP</b> Screw-driver	Screw
111671	107547
111671	107547

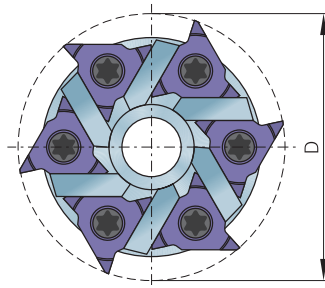
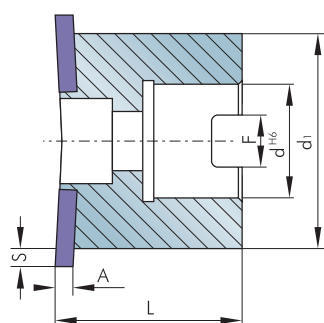
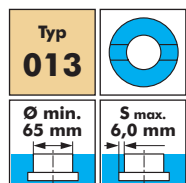
Screw torque max. 3,8 Nm

\* Cutter clamping screw internal hexagon

Order No.	114684
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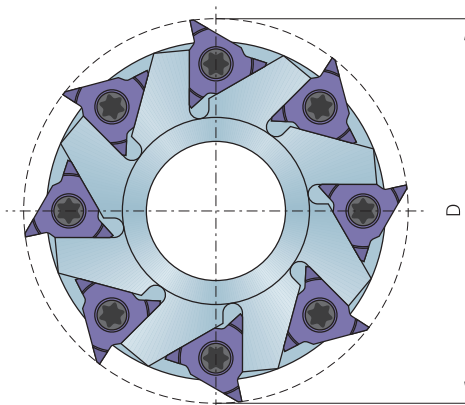
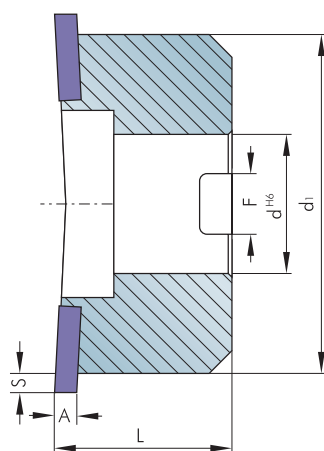
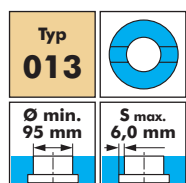
## Circular Milling Tools

- Inserts see page 67-68
- Cutting data see page 179
- Carbide grades see page 118



Order No.	Bore Ø min.	D mm	dH6 mm	d1 mm	Smax. mm	A mm	F mm	L mm	Inserts	Spare part No.	
										T20 IP Screw-driver	Screw
123435	65	63	27	51	6	6,5	12,4	44	6	111594	107551

Screw torque 5,5 Nm  
Cutter clamping screw internal hexagon  
Order No. 114695



Order No.	Bore Ø min.	D mm	dH6 mm	d1 mm	Smax. mm	A mm	F mm	L mm	Inserts	Spare part No.	
										T20 IP Screw-driver	Screw
123436	95	90	32	78	6	6,5	14,4	40	8	111594	107551

Screw torque 5,5 Nm



# TrioCUT

## Only 1 Tool for 3 Applications

- Thread Milling with Undercut
- Thread Milling and
- Drill Thread Milling

**Smooth cutting action** and **reduced cutting forces** guarantees long tool life, improved surface quality, as well as a lower machine load.

**A Conical position of insert pocket** guarantees stability of the tool shaft. Further advantages are the **radially back ground thread profile**, extremely high wedge angle, a more stable cutting edge as well as a **positive rake angle** and **coolant through the holder**.

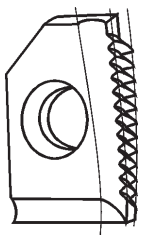
### Thread Milling with Undercut

- Drilling, drill milling, drill and thread milling in a solid material with only one cutting tool without any change of the insert or tool
- Range beginning from M 24 x 1,0
- Available pitches are: 1 / 1,5 / 2 mm
- Length of thread up to 17 mm
- Drilling/milling depth up to 30 mm

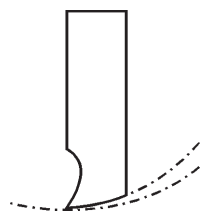


### Thread Milling

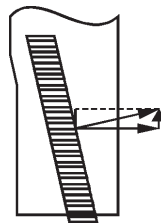
- Drilling, drill milling, drill and thread milling in a solid material with only one cutting tool without any change of the insert or tool
- Range beginning from M 24 x 1,0 (Ø theoretical unlimited)
- Available pitches are: 1 / 1,5 / 2 mm
- Length of thread up to 30 mm



**Smooth cutting action** by a left helical ground insert



**More stability** from radial ground clearance angle

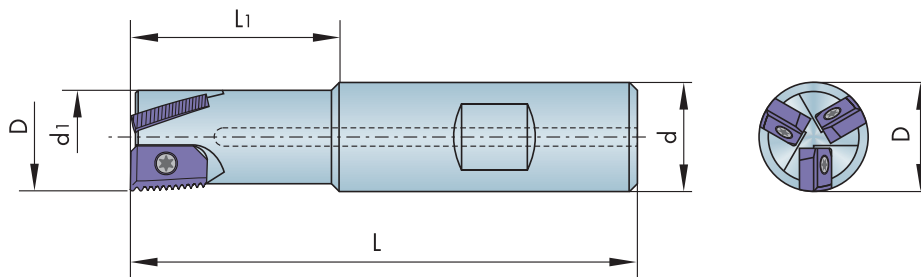
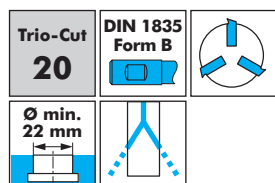


**Even displacement** of cutting forces

# TrioCUT

## Circular Milling Tools

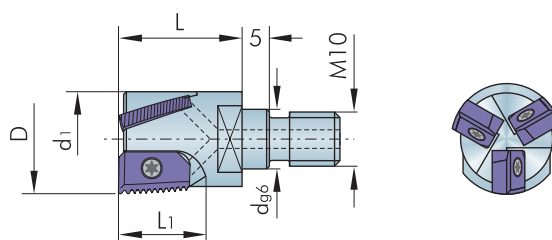
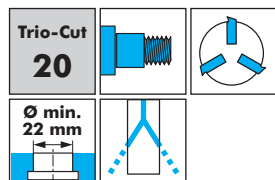
- Cutting data see page 179
- Carbide grades see page 118
- Inserts see below



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T8 IP Screw-driver	Screw
123622	22	20	20	17,5	83	32	Steel	111656	115567

Screw torque max. 1,1 Nm

**!** Please adapt cutting data to overhangs length



Order No.	Bore Ø min.	D mm	dg6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T8 IP Screw-driver	Screw
123623	22	20	10,5	17,5	21	16	Steel	111656	115567

Screw torque max. 1,1 Nm

## Circular Milling Inserts

Trio-Cut  
**20**



**Note:**  
Type 20 milling tools can only be used with type 20 milling inserts!

M	DIN 13	IR/IL	Full form	Pitch	B mm	L* mm	Teeth	Order No.
TINAMATIC								
				1,0	7,5	12,0	13	142690
				1,5	7,5	10,5	8	142633

G	DIN 228/1	BSW	BSF	Pitch / "	B mm	L* mm	Thread	Teeth	Order No.
TINAMATIC									
				14	7,5	9,07		6	142707
				14**	7,5	9,07	G 3/4" profile corrected	6	142666

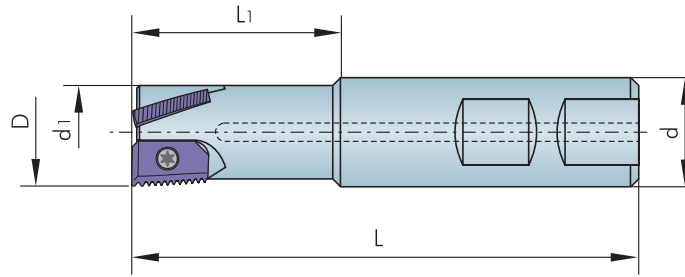
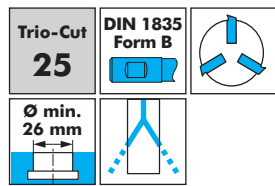
\*\* for internal threads only

\* The length "L" of the Thread Milling Insert is measured when the insert is clamped in the holder.

**TrioCUT**

**Circular Milling Tools**

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see page 74

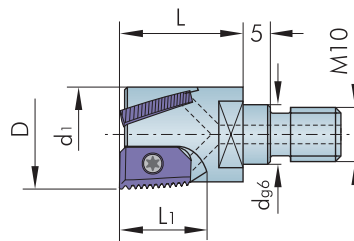
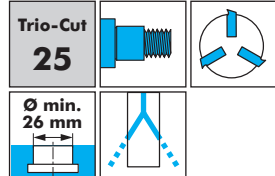


Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft
123638	26	25	25	21,7	107,6	50	Steel
123639	26	25	25	21,7	142,6	85	Heavy metal

Spare part No.	
T15 IP Screw-driver	Screw
111671	115628
111671	115628

Screw torque max. 3,8 Nm

**!** Please adapt cutting data to overhangs length



Order No.	Bore Ø min.	D mm	dg6 mm	d1 mm	L mm	L1 mm	Shaft
166204	26	25	10,5	21,7	30	19	Steel

Spare part No.	
T15 IP Screw-driver	Screw
111671	115628

Screw torque max. 3,8 Nm





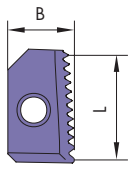




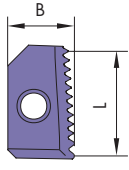







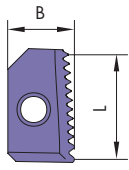
# TrioCUT

## Circular Milling Inserts



**Note:**  
Type 25 milling tools can only be used with type 25 milling inserts!

**Trio-Cut**  
**25**

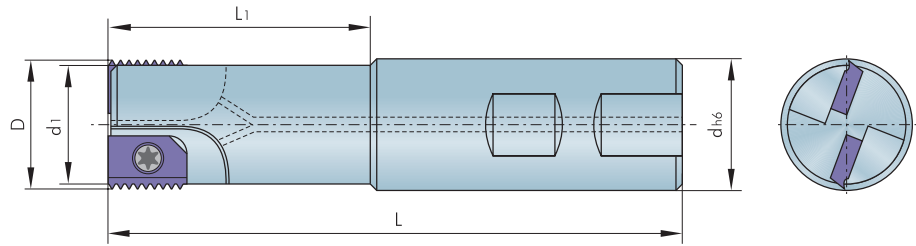
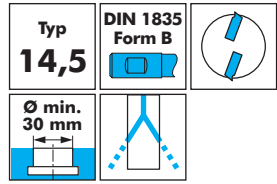
   		Pitch	B mm	L* mm	Teeth	Order No. TINAMATIC
		1,0	11	16,0	17	142754
		1,5	11	16,5	12	142722
		2,0	11	16,0	9	142723
   		Pitch	B mm	L* mm	Teeth	Order No. TINAMATIC
		1,5	11	16,5	12	142772
      		Pitch / "	B mm	L* mm	Teeth	Order No. TINAMATIC
		11	11	16,16	8	142743
		14	11	16,33	10	142798

**14,5**

## Circular Thread Milling Tools

2

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see page 76



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123546	30	25	25	21,5	106	48,2	short	Steel	111671	107552
123547	30	25	25	21,5	150	92,2	long	Heavy metal	111671	107552

Screw torque max. 3,8 Nm

14,5

**Circular Thread Milling Inserts**



M	DIN 13	IR/IL	Full form	Pitch	B mm	L mm	S mm	Thread	Teeth	Order No.	
										K10	TINAMATIC
				0,5	10	13,50	3,18		28	142026	142117
				0,75	10	13,50	3,18		19	142083	142048
				1,0	10	13,00	3,18		14	142096	142037
				1,25	10	12,50	3,18		11	142057	142067
				1,5	10	12,00	3,18		9	142058	142053
				1,75	10	12,25	3,18		8	142106	142080
				2,0	10	12,00	3,18		7	142135	142136
				2,5	10	10,00	3,18		5	142137	142129
				2,5	10	10,00	3,18	M20x2,5	5	142108	142069
profile corrected											

M	DIN 13	AR/AL	Full form	Pitch	B mm	L mm	S mm	Teeth	Order No.	
									K10	TINAMATIC
				1,0	10	13	3,18	14	142163	142177
				1,5	10	12	3,18	9	142115	142186
				2,0	10	12	3,18	7	142196	142167

G	DIN 228/1	BSW	BSF	IR/IL	AR/AL	Pitch / "	B mm	L mm	S mm	Teeth	Order No.	
											K10	TINAMATIC
						24	10	12,70	3,18	13	142214	142218
						20	10	12,70	3,18	11	142173	142213
						19	10	12,03	3,18	10	142248	142234
						18	10	11,28	3,18	9	142247	142145
						16	10	11,11	3,18	8	142212	142152
						14	10	12,70	3,18	8	142144	142203
						12	10	10,58	3,18	6	142123	142181
						11	10	11,54	3,18	6	142226	142159

UNC	UNF	ASME B 1.1	IR/IL	Pitch / "	B mm	L mm	S mm	Teeth	Order No.	
									K10	TINAMATIC
				40	10	13,33	3,18	22	142224	142124
				32	10	12,70	3,18	17	142250	142286
				28	10	12,70	3,18	15	142249	142223
				24	10	12,70	3,18	13	142155	142273
				20	10	12,70	3,18	11	142266	142285
				18	10	12,69	3,18	10	142184	142216
				16	10	12,70	3,18	9	142253	142147
				14	10	10,88	3,18	7	142272	142221
				12	10	10,58	3,18	6	142192	142243
				11	10	11,55	3,18	6	142148	142237

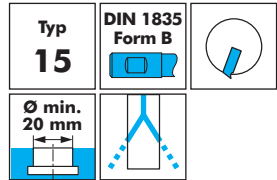
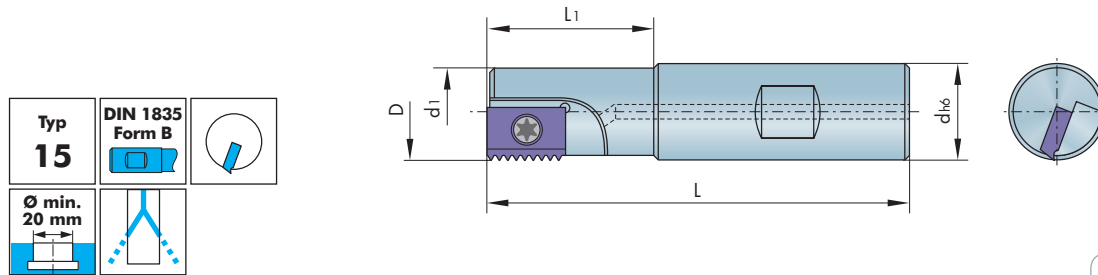
PG	DIN 40430	IR/IL	AR/AL	Pitch / "	PG	B mm	L mm	S mm	Teeth	Order No.	
										K10	TINAMATIC
				18	11-16	10	12,69	3,18	10	142300	142263
				16	21-48	10	11,11	3,18	8	142274	142257

15

## Circular Thread Milling Tools

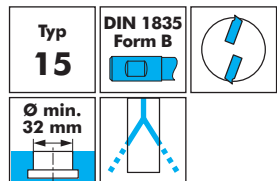
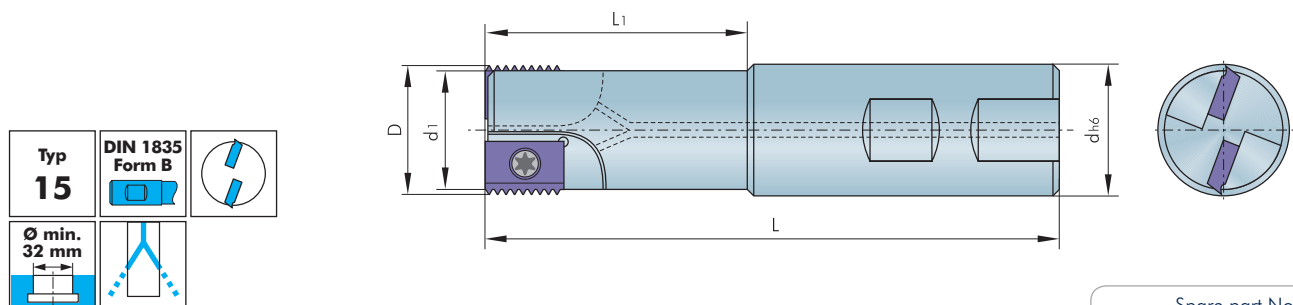
- Cutting data see page 179
- Carbide grades see page 118
- Inserts see below

2



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123550	20	18	16	12,7	79	30	short	Steel	111671	107571
123551	26	22	20	16,8	110	60	long	Steel	111671	107571

Screw torque max. 3,8 Nm



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123555	32	27	25	21,5	106	48,2	short	Steel	111671	107552

Screw torque max. 3,8 Nm

15

## Circular Thread Milling Inserts

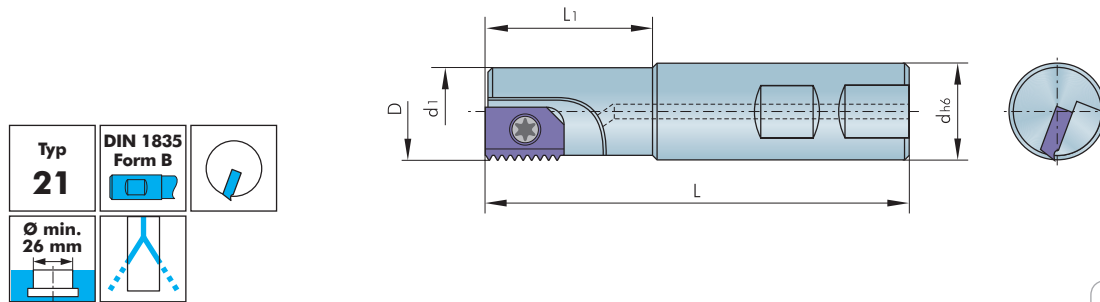


Pitch	B mm	L mm	S mm	Teeth	Order No.	
					K10	TINAMATIC
3,0	10,5	12,0	3,18	5		142269
3,5	10,5	10,5	3,18	4		142231

**21**

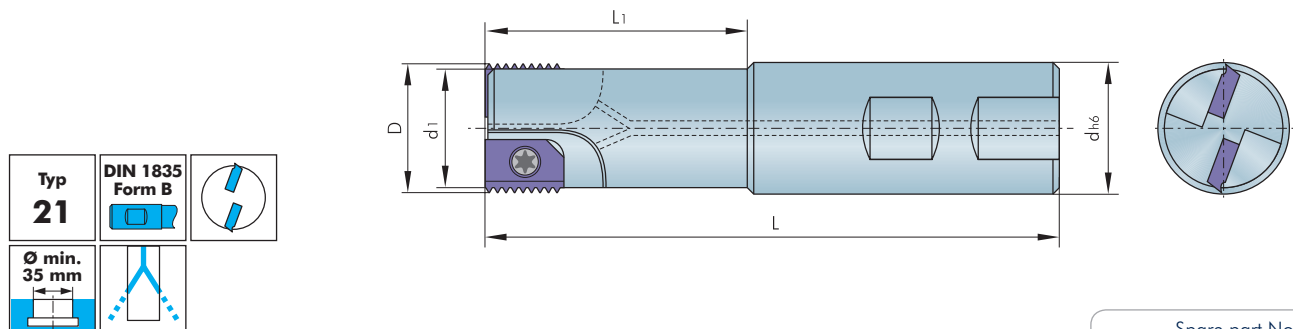
## Circular Thread Milling Tools

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see page 79



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123558	26	22	25	18,7	92	32,8	short	Steel	111671	107571
123559	26	22	25	18,7	122	62,8	long	Heavy metal	111671	107552

Screw torques max.  
**107571** T15 IP 3,8 Nm  
**107552** T15 IP 3,8 Nm



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123564	35	28	32	24,7	102	38,3	short	Steel	111671	107552
123566	35	28	32	24,5	142	78,3	long	Heavy metal	111671	107552

Screw torque max. 3,8 Nm



**21**

**Circular Thread Milling Inserts**

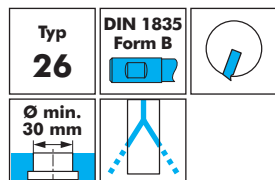
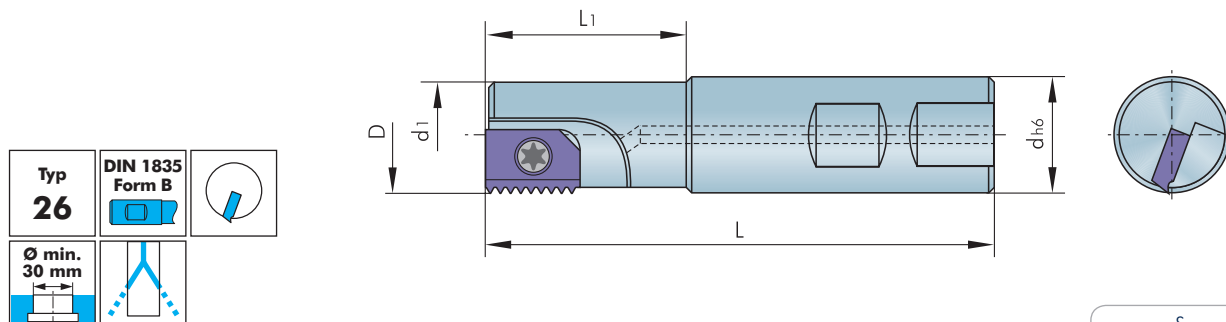


		<table border="1"> <thead> <tr> <th rowspan="2">Pitch</th> <th rowspan="2">B mm</th> <th rowspan="2">L mm</th> <th rowspan="2">S mm</th> <th rowspan="2">Teeth</th> <th colspan="2">Order No.</th> </tr> <tr> <th>K10</th> <th>TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>1,0</td> <td>10</td> <td>19,0</td> <td>3,18</td> <td>20</td> <td>142340</td> <td>142334</td> </tr> <tr> <td>1,5</td> <td>10</td> <td>19,5</td> <td>3,18</td> <td>14</td> <td>142346</td> <td>142366</td> </tr> <tr> <td>2,0</td> <td>10</td> <td>18,0</td> <td>3,18</td> <td>10</td> <td>142335</td> <td>142341</td> </tr> </tbody> </table>	Pitch	B mm	L mm	S mm	Teeth	Order No.		K10	TINAMATIC	1,0	10	19,0	3,18	20	142340	142334	1,5	10	19,5	3,18	14	142346	142366	2,0	10	18,0	3,18	10	142335	142341
		Pitch						B mm	L mm	S mm	Teeth	Order No.																				
			K10	TINAMATIC																												
		1,0	10	19,0	3,18	20	142340	142334																								
1,5	10	19,5	3,18	14	142346	142366																										
2,0	10	18,0	3,18	10	142335	142341																										
	<table border="1"> <thead> <tr> <th rowspan="2">Pitch</th> <th rowspan="2">B mm</th> <th rowspan="2">L mm</th> <th rowspan="2">S mm</th> <th rowspan="2">Teeth</th> <th colspan="2">Order No.</th> </tr> <tr> <th>K10</th> <th>TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>1,5</td> <td>10</td> <td>18</td> <td>3,18</td> <td>13</td> <td>142369</td> <td>142325</td> </tr> </tbody> </table>	Pitch	B mm	L mm	S mm	Teeth	Order No.		K10	TINAMATIC	1,5	10	18	3,18	13	142369	142325															
	Pitch						B mm	L mm	S mm	Teeth	Order No.																					
K10		TINAMATIC																														
1,5	10	18	3,18	13	142369	142325																										
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		Pitch / "						B mm	L mm	S mm	Teeth	Order No.																				
			K10	TINAMATIC																												
11	10	18,47	3,18	9	142375	142398																										
14	10	18,14	3,18	11	142361	142376																										
		<table border="1"> <thead> <tr> <th rowspan="2">Pitch / "</th> <th rowspan="2">B mm</th> <th rowspan="2">L mm</th> <th rowspan="2">S mm</th> <th rowspan="2">Teeth</th> <th colspan="2">Order No.</th> </tr> <tr> <th>K10</th> <th>TINAMATIC</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>10</td> <td>19,05</td> <td>3,18</td> <td>13</td> <td>142401</td> <td>142402</td> </tr> <tr> <td>14</td> <td>10</td> <td>18,14</td> <td>3,18</td> <td>11</td> <td>142413</td> <td>142446</td> </tr> <tr> <td>12</td> <td>10</td> <td>18,04</td> <td>3,18</td> <td>10</td> <td>142447</td> <td>142416</td> </tr> </tbody> </table>	Pitch / "	B mm	L mm	S mm	Teeth	Order No.		K10	TINAMATIC	16	10	19,05	3,18	13	142401	142402	14	10	18,14	3,18	11	142413	142446	12	10	18,04	3,18	10	142447	142416
		Pitch / "						B mm	L mm	S mm	Teeth	Order No.																				
			K10	TINAMATIC																												
16	10	19,05	3,18	13	142401	142402																										
14	10	18,14	3,18	11	142413	142446																										
12	10	18,04	3,18	10	142447	142416																										



## Circular Thread Milling Tools

- Cutting data see page 179
- Carbide grades see page 118
- Inserts see below



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Type	Shaft	Spare part No.	
									T15 IP Screw-driver	Screw
123569	30	25	25	20	107	48,5	short	Steel	111671	107559

Screw torque max. 3,8 Nm



## Circular Thread Milling Inserts

M	DIN 13	IR/IL	Full form	Pitch	B mm	L mm	S mm	Teeth	Order No.	
									K10	TINAMATIC
				1,5	15	24	5	17		142417
				2,0	15	24	5	13		142452
				3,0	15	21	5	8		142489
				3,5	15	20	5	7		142445
				4,0	15	20	5	6		142449

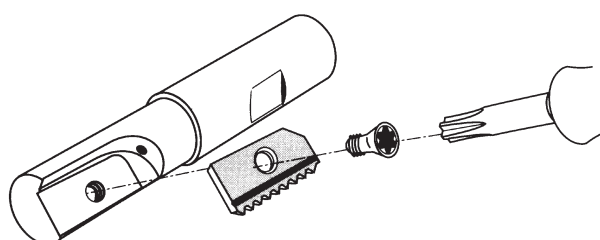
  

G	DIN 228/1	BSW	BSF	IR/IL	AR/AL	Pitch / "	B mm	L mm	S mm	Teeth	Order No.	
											K10	TINAMATIC
						11	15	23,09	5	11		142450

## Assembling Instructions

### Changing Thread Milling Inserts

Put in the insert firmly into insert pocket. Hold the insert in position while clamping.



# PolyMILL

Connectable in accordance with BLUECOMPETENCE » mimatic mi » Driven Tool Holders

## Circular Milling Tools with Polygonal Insert Seat and 6 Cutting Edges for Large Thread Milling



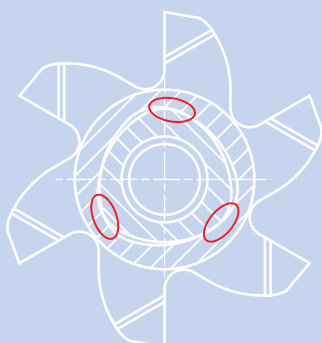
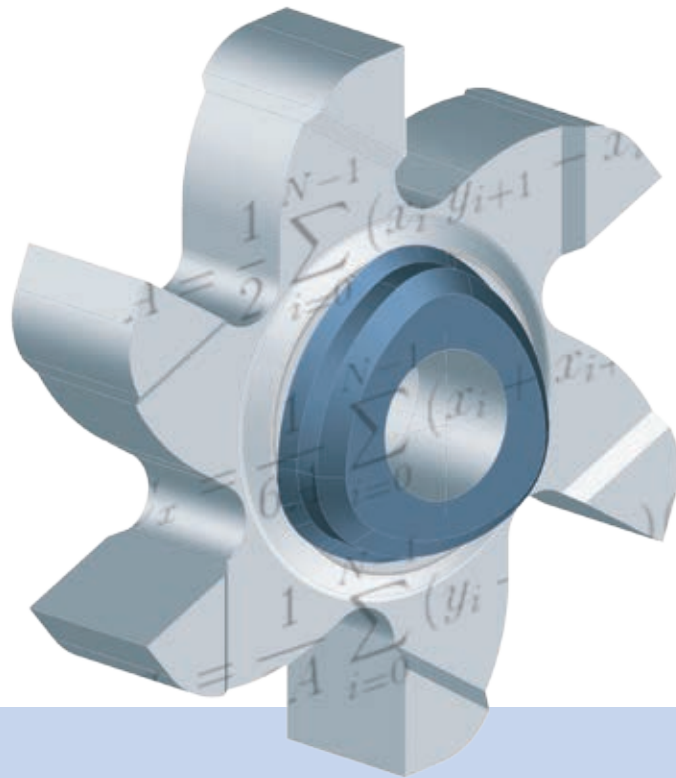
The polygonal connection between the insert and cutter body improves the economy and quality of the machining process.

- Longer Tool Lifetimes
- Higher Chipping Volume
- Higher Feeds
- Shorter Machining Times

P16, P20 and P26 are the designations of the four basic types. They are available with various shank and insert dimensions and covers the entire thread option range.


The milling cutters are available in various lengths. The carbide variants are made with a tool-steel head.

### The Polygon in the mimatic® P-Interface



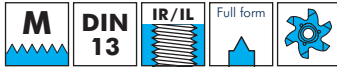
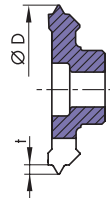
#### Advantages

- Concentricity over 3-point polygon
- Power transmission by 3-point polygon
- High stability through closed circular ring
- High resistance against breakage during interrupted cut

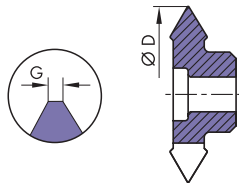
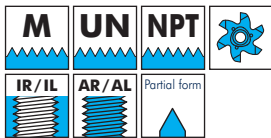
 = Transmission zones

## Thread Milling

- Insert holder see page 84-85
- Cutting data see page 179



	Typ	Pitch mm	D mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
P20	P2020	1,50	20,0	0,875		6	168683
	P2020	2,00	20,0	1,157		6	168684
	P2020	3,00	20,0	1,745	only M24	6	168685
P25	P2526	1,50	26,0	0,864		6	142617
	P2526	2,00	26,0	1,159		6	142644
	P2526	3,00	26,0	1,728		6	142599
	P2524	3,50	24,0	2,023	only M30	6	142671
	P2526	3,50	26,0	2,023		6	142623
	P2526	4,00	26,0	2,308		6	142624
	P2526	4,00	26,0	2,262	only M36	6	169675
	P2526	4,50	26,0	2,602		6	142638
	P2526	5,00	26,0	2,887		6	107275

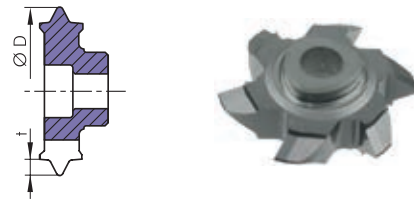


	Type	Pitch mm	D mm	G mm	Number of teeth	Order No. TINAMATIC
P20	P2020	1-3	20,0	0,10	6	168686
	P2022	1-2	21,7	0,10	6	171972
	P2022	2-4	21,7	0,15	6	171973
P25	P2526	1-3	26,0	0,10	6	142647
	P2526	2,5-5	26,0	0,25	6	142592
	P2526	3,5-6	26,0	0,40	6	175936

# Thread Milling

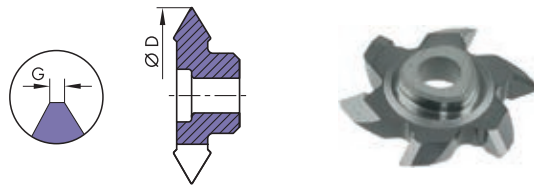
- Insert holder see page 84-85
- Cutting data see page 179

<b>G</b>	<b>DIN 228/1</b>	<b>BSW</b>	<b>BSF</b>	<b>UNC</b>	<b>UNF</b>
Full form					



Type	Pitch / "	D mm	t mm	Thread	Number of teeth	Order No. TINAMATIC
<b>UNC</b>						
P20	P2018	8	18,0		6	172149
	P2020	7	20,0		6	172150
P25	P2524	6	24,0		6	172151
	P2526	5	26,0		6	172152
	P2526	4,5	26,0		6	172153
<b>UNF</b>						
P20	P2020	1-12	20,0		6	171951
<b>G,BSW, BSF</b>						
P20	P2020	11	20,0		6	168687
	P2020	14	20,0		6	168688
P25	P2526	11	26,0	all threads > 1"	6	142600

<b>G</b>	<b>DIN 228/1</b>	<b>BSW</b>	<b>BSF</b>	<b>UNC</b>	<b>UNF</b>
		Partial form			

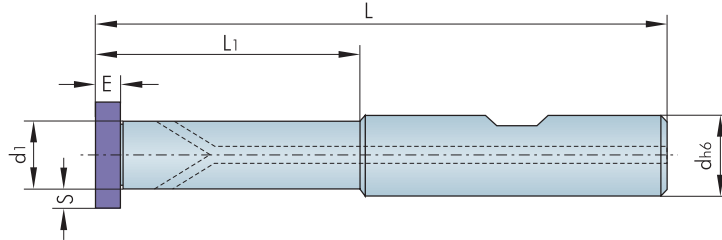


Type	Pitch mm	D mm	G mm	Pitch	Number of teeth	Order No. TINAMATIC
P25*	P2526	4-8	26	0,1	6	177427

\* Please note the notch effect in thin-walled pipes.

## Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 82-83
- Cutting data see page 179



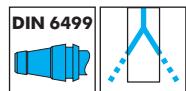
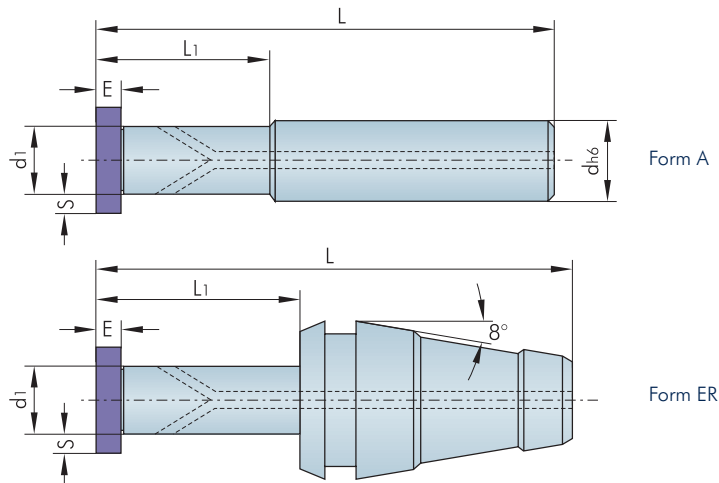
Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	S <sub>max.</sub> mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P20	123615	B	22	16	11,5	5,00	5,0	85,6	35,6	Steel	T15 IP 111671	M4x13 107597
	123616	B	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	171794	A	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	123617	B	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	171796	A	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	174314	A	22	16	16,0	2,70	5,0	111,0	-	Carbide		
P25	123592	B	28	16	13,6	6,80	4,0	84,2	35,0	Steel	T20 IP 111594	M5x13,5 107529
	123598	B	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	171855	A	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	123600	B	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	171857	A	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	123603	B	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	171859	A	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	123609	A	28	16	16,0	5,70	4,0	109,6	-	Carbide		
	123611	A	28	16	15,5	6,80	4,0	154,3	-	Carbide		
	123613	A	28	20	15,5	5,70	4,0	180,0	25,0	Carbide		

\* If inserts width <> dimension E are used, dimensions L and L<sub>1</sub> change accordingly.

Screw torques max.  
**107597** T15 IP 3,8 Nm  
**107529** T20 IP 5,5 Nm

## Circular Milling Tools for Driven Toolholders

- Inserts see page 82-83
- Cutting data see page 179

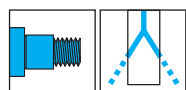
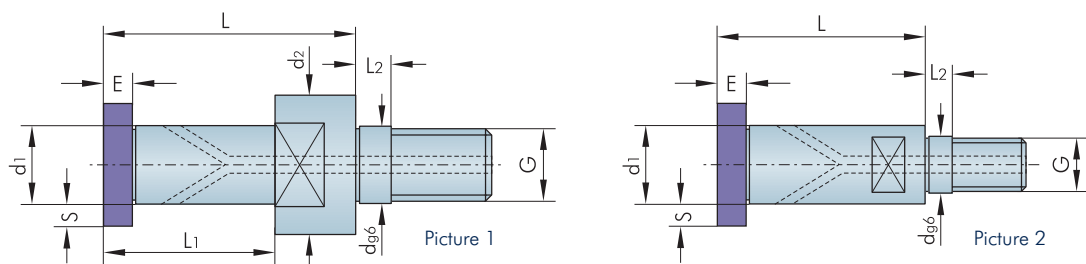


Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	Smax. mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P20	177178	A	22	12	11,5	5,00	5,0	68,0	20,0	Steel	T15 IP	M4x13
	177180	ER 20	22		11,5	5,00	5,0		20,0	Steel	111671	107597
	177181	ER 25	22		11,5	5,00	5,0		25,6	Steel		
P25	177182	A	28	16	13,6	6,80	4,0	74,2	25,0	Steel	T20 IP	M5x13,5
	177184	ER 25	28		13,6	6,80	4,0		25,0	Steel	111594	107529
	177185	ER 32	28		13,6	6,80	4,0		35,0	Steel		

Screw torques max.  
**107597** T15 IP 3,8 Nm  
**107529** T20 IP 5,5 Nm

## Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 82-83
- Cutting data see page 179

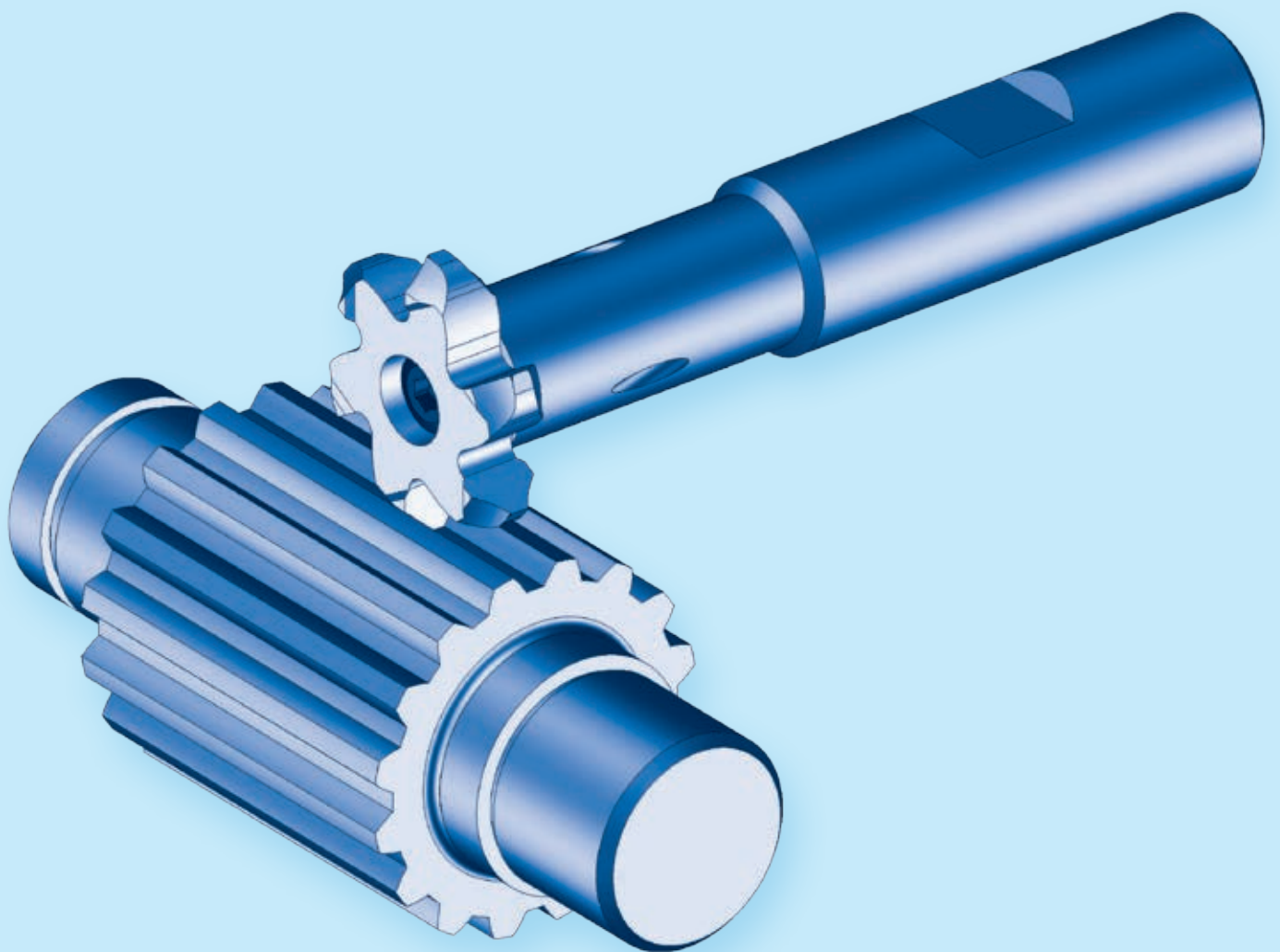


Please adapt cutting data to overhangs length

Type (D)	Order No.	Pic.	Bore Ø min. recommended	dg6 mm	d1 mm	d2 mm	Smax. mm	E mm	L* mm	L1* mm	L2 mm	G	Shaft	Spare part No.	
														Screwdriver	Screw
P20	123618	1	22	10,5	11,5	18,0	4,2	5	35,0	25,0	5,5	M10	Steel	111671	107597
	177734	2	22	6,5	11,5	-	4,2	5	20,5	-	5,0	M6	Steel	111671	107597
	177735	2	22	8,5	13,5	-	3,25	5	20,5	-	5,5	M8	Steel	111671	107597
P25	177747	2	28	8,5	13,6	-	5,7	4	22,6	-	5,5	M8	Steel	111594	107529
	177767	2	28	10,5	18,0	-	3,5	4	22,6	-	5,5	M10	Steel	111594	107529

Screw torques max.  
**107597** T15 IP 3,8 Nm  
**107529** T20 IP 5,5 Nm

**Gear Milling**





## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

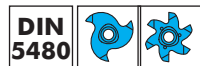
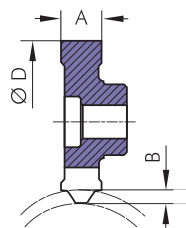
<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

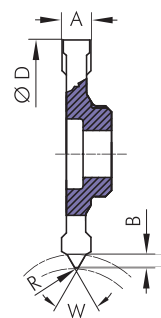
<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Gear Milling Inserts

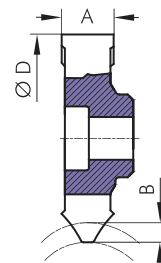
- Insert holder see page 89
- Cutting data see page 179



Typ	Arbor	Module	Angle of action	N. of teeth Arbor	A mm	D <sup>=0,05</sup> mm	B mm	N. of teeth Insert	Order No. TINAMATIC
P16	P1616 W11	0,8	30°	12	3	15,85	0,80	6	174569
	P1616 W14	0,8	30°	16	3	16	0,80	6	169336
	P1616 W16	0,8	30°	18	3	16	0,80	6	169090
	P1616 W20	0,8	30°	24	3	16	0,80	6	168668
	P1616 W24	1,25	30°	18	4	16	1,25	6	169340
	P1616 W25	2	30°	11	7	16	2,00	3	149415
	P1616 W30	1,25	30°	20	5	16	1,25	6	177785
	P1616 W30	1,25	30°	22	4	16	1,25	6	176246
	P1616 W35	2	30°	16	5	16	2,00	6	179140
	P1616 W42	1,25	30°	32	4	16	1,25	6	179651
P1616 W50	2	30°	24	5	16	2,00	6	169687	



Typ	Arbor	N. of teeth Arbor	A mm	D <sup>=0,05</sup> mm	B mm	Angle	R mm	N. of teeth Insert	Order No. TINAMATIC
P25	P2526 26 x 30	35	3	26	1,638	60°	0,3	6	171358
	P2526 40 x 44	38	3	26	1,940	60°	0,4	6	171359

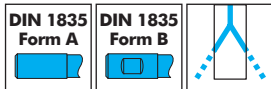
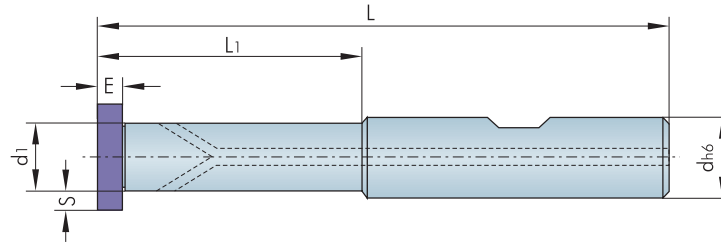


Typ	Nominal profile width	Module	Angle of action	N. of teeth Arbor	A mm	D <sup>=0,05</sup> mm	B mm	N. of teeth Insert	Order No. TINAMATIC
P16	P1616 15 x 12	1,6	30°	8	3	16	1,50	6	169337
	P1616 17 x 14	1,6	30°	9	5	16	1,50	6	169111
	P1616 20 x 17	1,6	30°	12	5	16	1,50	6	169101
	P1616 25 x 22	1,6	30°	14	5	16	1,65	6	169107
P25	P2526 35 x 31	1,75	30°	18	6,5	26	2,00	6	178172
	P2526 55 x 50	2	30°	26	6,5	26	2,75	6	173903

## Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 88
- Cutting data see page 179

3



Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	Smax. mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P16	123573	B	18	12	9,0	4,0	3,5	71,5	25	Steel	T8 IP 111656	M3x12 143158
	123577	B	18	12	9,0	4,0	3,5	71,5	25	Carbide		
	171787	A	18	12	9,0	4,0	3,5	71,5	25	Carbide		
	123580	B	18	12	9,0	4,0	3,5	86,5	40	Carbide		
	171789	A	18	12	9,0	4,0	3,5	86,5	40	Carbide		
	123584	A	18	12	9,0	4,0	3,5	104,0	34	Carbide		
	123588	A	18	12	12,0	2,7	3,5	86,5	-	Carbide		
	123590	A	18	12	12,0	2,7	3,5	126,6	-	Carbide		
P25	123592	B	28	16	13,6	6,8	4,0	84,2	35	Steel	T20 IP 111594	M5x13,5 107529
	123598	B	28	16	13,6	6,8	4,0	84,2	35	Carbide		
	171855	A	28	16	13,6	6,8	4,0	84,2	35	Carbide		
	123600	B	28	16	13,6	6,8	4,0	99,2	50	Carbide		
	171857	A	28	16	13,6	6,8	4,0	99,2	50	Carbide		
	123603	B	28	16	13,6	6,8	4,0	114,2	65	Carbide		
	171859	A	28	16	13,6	6,8	4,0	114,2	65	Carbide		
	123609	A	28	16	16,0	5,7	4,0	109,6	-	Carbide		
123611	A	28	16	15,5	6,8	4,0	154,3	-	Carbide			
123613	A	28	20	15,5	5,7	4,0	180,0	25	Carbide			

\* If inserts width <> dimension E are used, dimensions L and L1, change accordingly.

Screw torques max.  
143158 T08 IP 1,1 Nm  
107529 T20 IP 5,5 Nm

## Special Customer Solutions

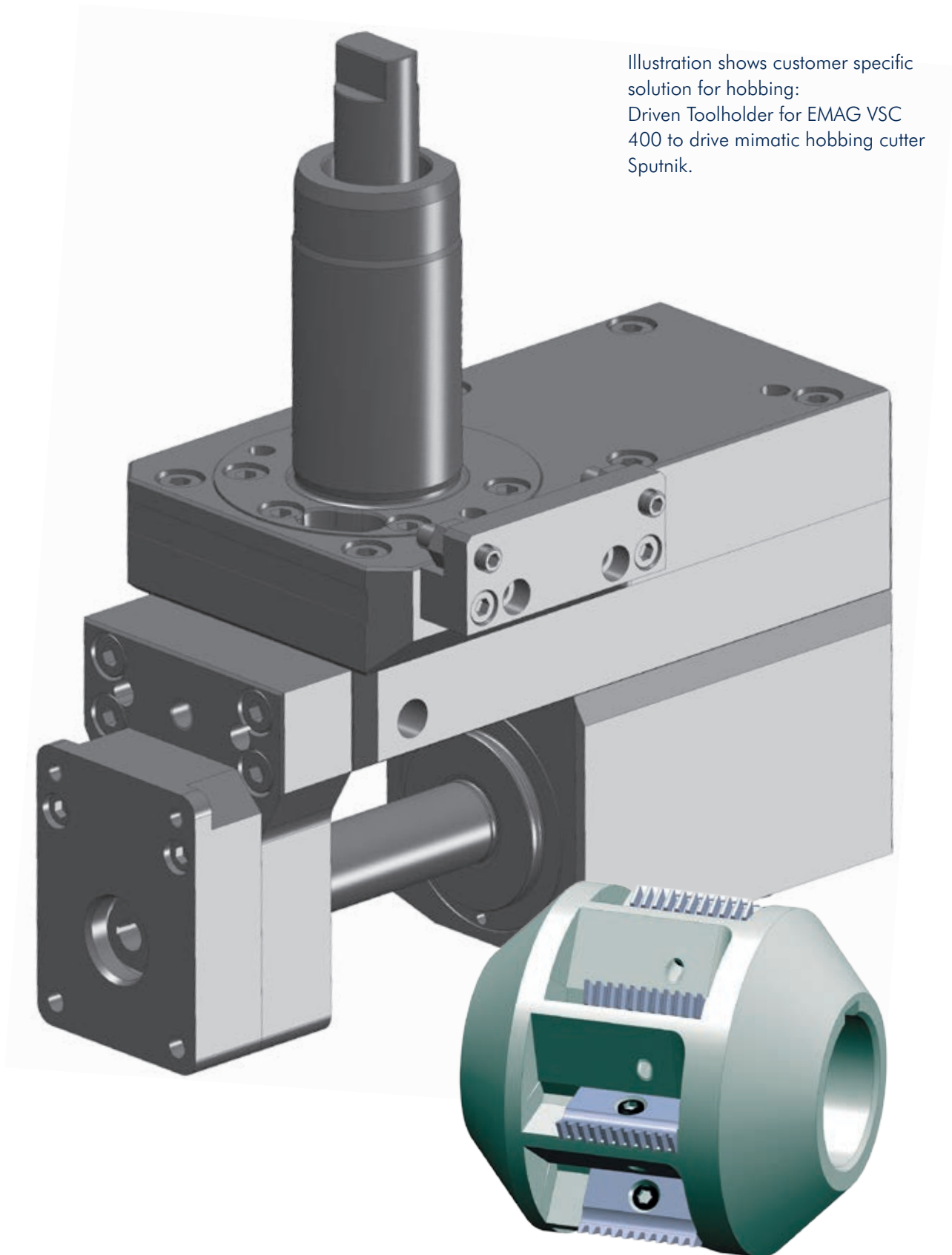


Illustration shows customer specific solution for hobbing:  
Driven Toolholder for EMAG VSC 400 to drive mimatic hobbing cutter Sputnik.



Management Service

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT  
 TÜV SÜD

# CERTIFICATE

The Certification Body  
of TÜV SÜD Management Service GmbH  
certifies that

**mimatic**<sup>®</sup>  
T o o l S y s t e m s

**mimatic GmbH**  
Westendstraße 3  
D-87488 Betzigau

has established and applies  
a Quality Management System for

**Development, Design, Production, Sales and  
Service of Driven Toolholders, Cutting Tools,  
Clamping Systems and Special Tools.**

An audit was performed, Report No. **70006182**  
Proof has been furnished that the requirements  
according to

**ISO 9001:2008**

are fulfilled. The certificate is valid until **2014-02-06**  
Certificate Registration No. **12 100 15724 TMS**

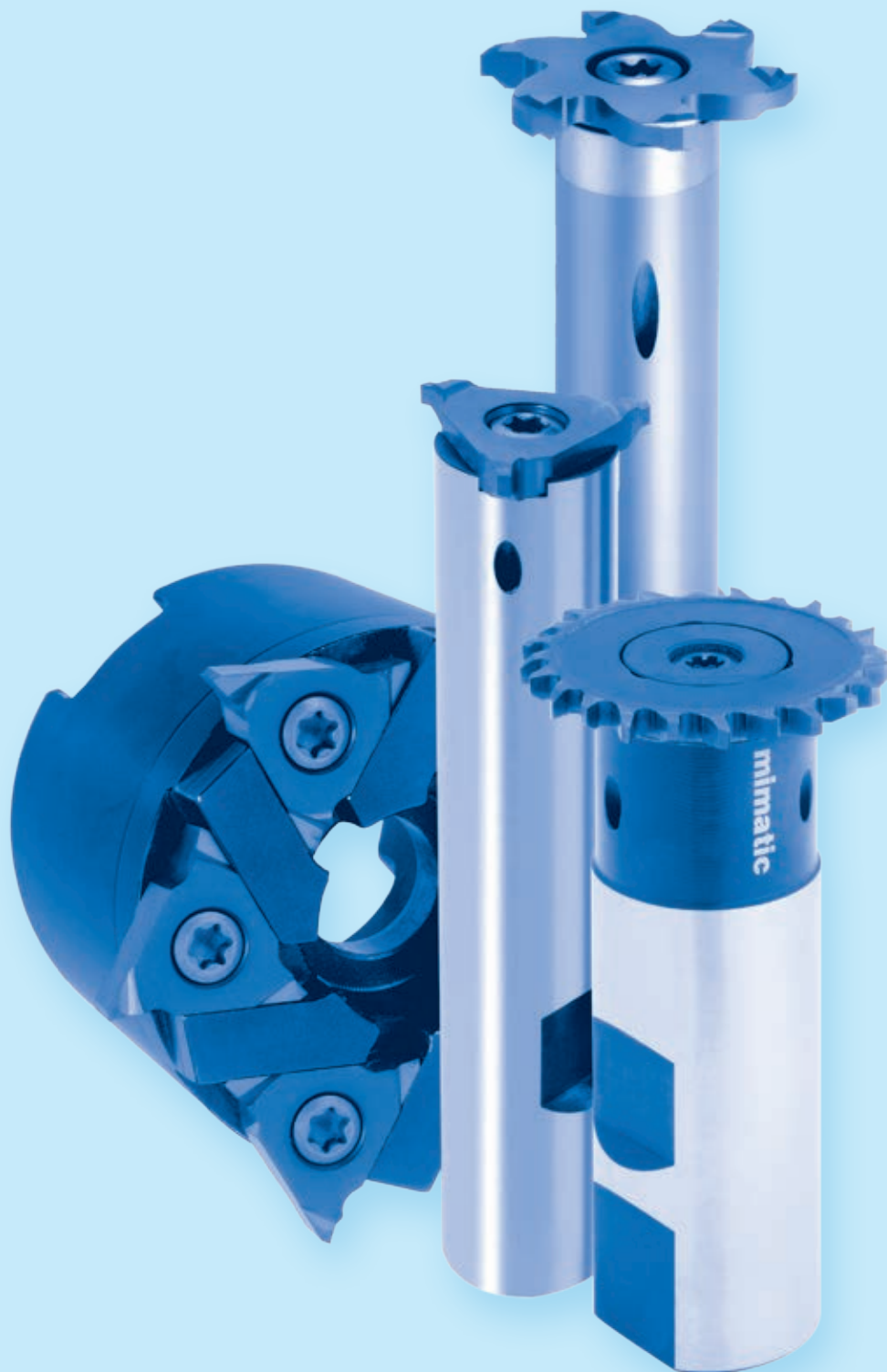
*M. Wegner*

Munich, 2013-02-26



QMS-TGA-ZM-07-92

## Slot Milling



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Table of Contents

### PolyMILL



#### Inserts

Slot Milling	97-98
Circlip grooves	99

#### Toolholders

with cylindrical shank	100
for driven toolholders	101
with tightening shank	102

### TriMILL



#### Inserts

Slot Milling	104
Circlip grooves	104-105
O-Ring grooves	105

#### Toolholders

with cylindrical shank	106-107
with tightening shank	106-107
Face milling cutter	107-108

### DeepMILL



#### Toolholders and Discs

Ø 32 mm	111
Ø 40 mm	112
Ø 50 mm	113
Ø 63 mm	114
Ø 80 mm	115

#### Special Toolholders

with locating bore	116
Sawblade arbor	116

Assembling instruction	117
Cutting data	180

### Keyway Slot Milling Cutter






















Keyway Slot Milling Cutter	118
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### Technical Data

Tips about circular and thread milling	119-120
Cutting data	179-180
Carbide grades	118



# Symbols

	Type designation		Blank inserts must be equipped with a clearance angle!
	Tool shank without clamping surface		Inserts without profile, ready for use with clearance angle.
	Tool shank with Weldon clamping surface		Inserts for guard ring slots
	Tool with Conical tool shank		Inserts for O-ring slots
	Tool with tightening thread		DIN standard
	Cutter with cross groove		Inserts with chamfered edges
	Smallest necessary bore-diameter		Inserts with chipbreakers from 5 mm cutting width
	Maximum cutting depth		For chamfering and deburring
	Internal coolant supply		Number of inserts (Polygon Cutter)
			Thread depth max.

# PolyMILL

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» Driven Tool Holders

## Circular Milling Tools with Polygonal Insert Seat and 6 Cutting Edges for a High Chipping Volume



The new generation of circular cutters allows,

- **Guard Ring Slots**
- **Metric Internal Threads acc. to DIN**
- **Whitworth Threads**

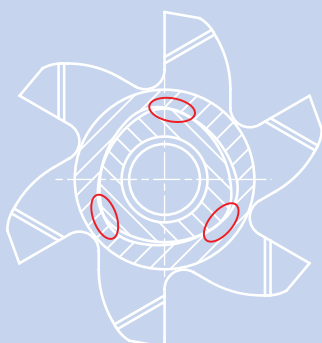
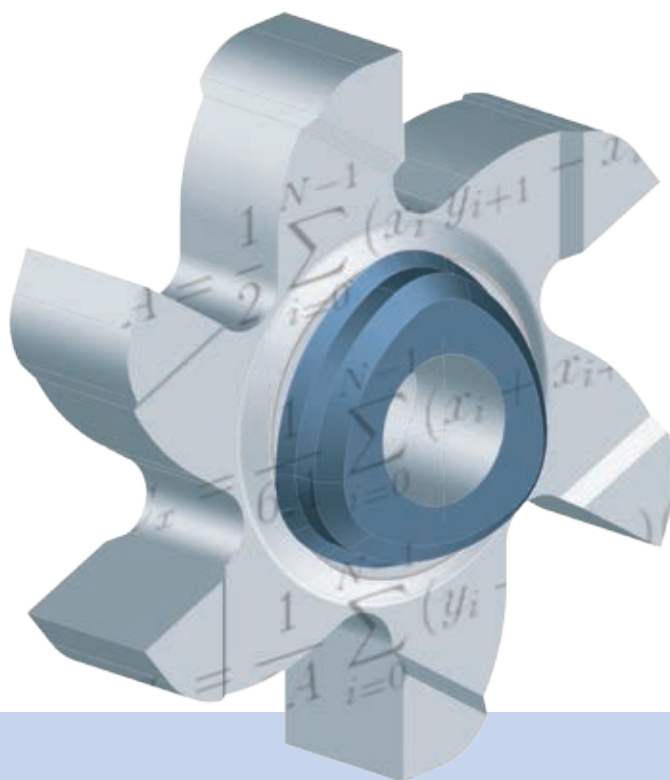
to be milled in components with great precision. The polygonal connection between the insert and cutter body improves the economy and quality of the machining process.

- **Longer Tool Lifetimes**
- **Higher Chipping Volume**
- **Higher Feeds**
- **Shorter Machining Times**

P16, P20 and P26 are the designations of the three basic types. They are available with various shank and insert dimensions that extend the application scope.


The milling cutters are available in various lengths. The carbide variants are made with a tool-steel head.

### The Polygon in the mimatic® P-Interface



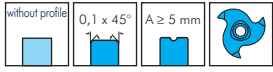
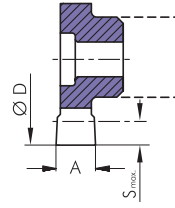
#### Advantages

- Concentricity over 3-point polygon
- Power transmission by 3-point polygon
- High stability through closed circular ring
- High resistance against breakage during interrupted cut

 = Transmission zones

# Slot Milling

- Insert holder see page 100-102
- Cutting data see page 179

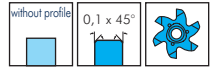
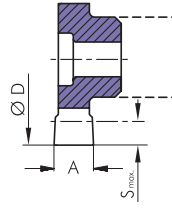


Ready for use with clearance angle

Type	A mm	A inch	D mm	Rake Angle	R mm	Smax. mm	Number of teeth	Order No.		
								FKN	TINAMATIC	
P12	P1210	0,74	.029	9,6	6°	0,10	1,20	3		171915
	P1210	0,84	.033	9,6	6°	0,10	1,20	3		171916
	P1210	1,0	.039	9,6	6°	0,10	1,20	3		171917
	P1210	1,2	.047	9,6	6°	0,10	1,20	3		171918
	P1210	1,4	.055	9,6	6°	0,10	1,20	3		171919
	P1210	1,5	.059	9,6	6°	0,10	1,20	3		171920
			.062	9,6	6°	0,10	1,20	3		173937
	P1210	1,7	.062	9,6	6°	0,10	1,20	3		171921
	P1210	2,0	.079	9,6	6°	0,10	1,20	3		171922
	P1210	2,5	.098	9,6	6°	0,10	1,20	3		171923
	P1212	1,5	.059	11,7	6°	0,10	2,25	3		171862
	P1212	2,0	.079	11,7	6°	0,15	2,25	3		171863
	P1212	2,5	.098	11,7	6°	0,15	2,25	3		171865
	P1212	3,0	.118	11,7	6°	0,15	2,25	3		171866
P1212	3,175	.125	11,7	6°	0,15	2,25	3		173938	
P16	P1616	3,5	.138	16	0°	0,10	3,50	3		142531
	P1616	3,5	.138	16	8°	0,10	3,50	3		142486
	P1616	3,5	.138	16	12°	0,10	3,50	3		142526
	P1616	5,0	.197	16	0°	0,10	3,50	3	142397	142511
	P1616	5,0	.197	16	8°	0,10	3,50	3	142502	142541
	P1616	5,0	.197	16	12°	0,10	3,50	3	142519	142457
P25	P2525	4,0	.157	25	0°	0,10	5,70	3	142514	142556
	P2525	4,0	.157	25	8°	0,10	5,70	3	142551	142546
	P2525	4,0	.157	25	12°	0,10	5,70	3	142585	142579
	P2525	5,0	.197	25	8°	0,10	5,70	3	107258	142538
	P2525	6,35	.250	25	8°	0,10	5,70	3		173939
	P2525	6,5	.256	25	0°	0,10	5,70	3	142522	142582
	P2525	6,5	.256	25	8°	0,10	5,70	3	142609	142610
	P2525	6,5	.256	25	12°	0,10	5,70	3	142631	142574
	P2525	8,0	.315	25	0°	0,10	5,70	3		142558
	P2525	8,0	.315	25	8°	0,10	5,70	3		142578
	P2525	8,0	.315	25	12°	0,10	5,70	3		142588

# Slot Milling

- Insert holder see page 100-102
- Cutting data see page 179

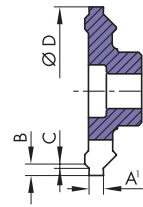


Ready for use with clearance angle

Type	A mm	A inch	D mm	Rake Angle	R mm	Smax. mm	Number of teeth	Order No.		
								TINAMATIC	TINAMATIC	
P16	P1616	3,0	.118	16,0	6°	0,10	3,5	6	171699	142494
	P1616	3,175	.125	16,0	6°	0,10	3,5	6	171699	173929
	P1616	4,0	.157	16,0	6°	0,10	3,5	6	171699	142565
	P1616	5,0	.197	16,0	6°	0,10	3,5	6	171699	142586
	P1618	1,2	.047	17,7	6°	0,10	4,0	6	171699	171937
	P1618	1,4	.055	17,7	6°	0,10	4,0	6	171699	171938
	P1618	1,5	.059	17,7	6°	0,10	4,0	6	171699	171939
	P1618	1,57	.062	17,7	6°	0,10	4,0	6	171699	173928
	P1618	1,7	.067	17,7	6°	0,10	4,0	6	171699	171940
	P1618	2,0	.079	17,7	6°	0,10	4,0	6	171699	171941
	P1618	2,39	.094	17,7	6°	0,15	4,0	6	171699	171942
	P1618	2,5	.098	17,7	6°	0,15	4,0	6	171699	171943
P20	P2020	3,0	.118	20,0	6°	0,10	4,2	6	171700	168673
	P2020	4,0	.157	20,0	6°	0,10	4,2	6	171700	168674
	P2020	5,0	.197	20,0	6°	0,10	4,2	6	171700	142655
	P2022	1,4	.055	21,7	6°	0,10	5,0	6	171700	171956
	P2022	1,5	.059	21,7	6°	0,10	5,0	6	171700	171957
	P2022	1,57	.062	21,7	6°	0,10	5,0	6	171700	173930
	P2022	1,7	.067	21,7	6°	0,10	5,0	6	171700	171958
	P2022	2,0	.079	21,7	6°	0,15	5,0	6	171700	171959
	P2022	2,39	.094	21,7	6°	0,15	5,0	6	171700	171960
	P2022	2,5	.098	21,7	6°	0,20	5,0	6	171700	171961
	P2022	3,0	.118	21,7	6°	0,20	5,0	6	163659	171962
	P2022	4,0	.157	21,7	6°	0,20	5,0	6	163659	171963
P25	P2526	3,0	.118	26,0	6°	0,10	6,2	6	171701	142601
	P2526	3,175	.125	26,0	6°	0,10	6,2	6	171701	173932
	P2526	4,0	.157	26,0	6°	0,10	6,2	6	171701	142677
	P2526	5,0	.197	26,0	6°	0,10	6,2	6	171701	142589
	P2526	6,35	.250	26,0	6°	0,10	6,2	6	171702	173931
	P2526	6,5	.256	26,0	6°	0,10	6,2	6	171702	142618
	P2528	1,5	.059	27,7	6°	0,10	6,8	6	171702	171981
	P2528	2,0	.079	27,7	6°	0,15	6,8	6	171702	171982
	P2528	2,39	.094	27,7	6°	0,15	6,8	6	171702	171983
	P2528	2,5	.098	27,7	6°	0,20	6,8	6	171702	171984
	P2528	3,0	.118	27,7	6°	0,20	6,8	6	171702	171985
	P2528	3,175	.125	27,7	6°	0,20	6,8	6	171702	171986
P2528	4,0	.157	28,7	6°	0,20	6,8	6	177186	171986	
P2528	5,0	.197	29,7	6°	0,20	6,8	6	177187	171986	

## Circlip Grooves

- Insert holder see page 100-102
- Cutting data see page 179



With chamfered edge

Type	DIN Width	D mm	A <sup>1</sup> <sub>-0,03</sub> mm	B mm	Cx45° mm	Number of teeth	Order No TINAMATIC	
P16	P1616	1,10	16	1,18	0,50	0,10	6	142423
	P1616	1,30	16	1,38	0,85	0,15	6	142528
	P1616	1,60	16	1,68	1,00	0,15	6	142561
	P1616	1,85	16	1,93	1,25	0,20	6	142562
P20	P2020	1,10	20	1,18	0,50	0,10	6	168675
	P2020	1,30	20	1,38	0,85	0,15	6	168676
	P2020	1,60	20	1,68	1,00	0,15	6	168677
	P2020	1,85	20	1,93	1,25	0,20	6	168678
	P2022	1,60	21,7	1,68	1,00	0,15	6	171968
	P2022	1,85	21,7	1,93	1,25	0,20	6	171969
	P2022	2,15	21,7	2,23	1,50	0,20	6	171970
	P2022	2,65	21,7	2,73	1,75	0,20	6	171971
P25	P2526	1,30	26	1,38	0,85	0,15	6	142646
	P2526	1,60	26	1,68	1,00	0,15	6	142660
	P2526	1,85	26	1,93	1,25	0,20	6	142607
	P2526	2,15	26	2,23	1,50	0,20	6	142591
	P2526	2,65	26	2,73	1,75	0,20	6	142597
	P2526	3,15	26	3,23	1,75	0,20	6	142661

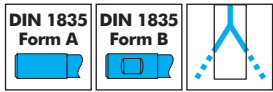
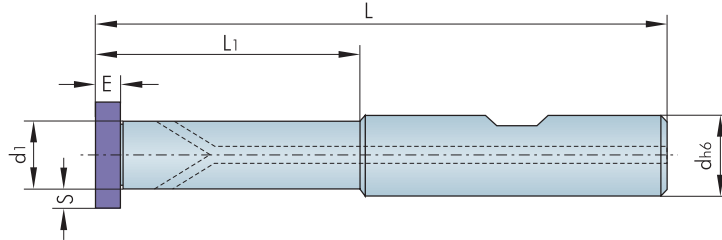


Without chamfered edge

Type	DIN Width	D mm	A <sup>1</sup> <sub>-0,03</sub> mm	B mm	R mm	Number of teeth	Order No TINAMATIC	
P12	P1210	0,90	9,6	0,98	1,20	0,3	3	172125
	P1212	1,10	11,7	1,18	1,00	0,3	3	171868
	P1212	1,30	11,7	1,38	1,00	0,3	3	171869
	P1212	1,60	11,7	1,68	1,00	0,3	3	171870
P16	P1616	1,10	16,0	1,18	0,90	0,3	6	142548
	P1616	1,30	16,0	1,38	1,10	0,3	6	142509
	P1616	1,60	16,0	1,68	1,25	0,3	6	142533
	P1616	1,85	16,0	1,93	1,25	0,3	6	142536
	P1618	1,10	17,7	1,18	0,90	0,3	6	171945
	P1618	1,30	17,7	1,38	1,10	0,3	6	171946
	P1618	1,60	17,7	1,68	1,25	0,3	6	171947
	P1618	1,85	17,7	1,93	1,25	0,3	6	171948
P20	P2020	1,10	20,0	1,18	0,90	0,3	6	168679
	P2020	1,30	20,0	1,38	1,10	0,3	6	168680
	P2020	1,60	20,0	1,68	1,25	0,3	6	168681
	P2020	1,85	20,0	1,93	1,25	0,3	6	168682
	P2022	1,60	21,7	1,68	1,25	0,3	6	171964
	P2022	1,85	21,7	1,93	1,25	0,3	6	171965
	P2022	2,15	21,7	2,23	1,75	0,3	6	171966
	P2022	2,65	21,7	2,73	1,75	0,3	6	171967
P25	P2526	1,30	26,0	1,38	1,10	0,3	6	142598
	P2526	1,60	26,0	1,68	1,25	0,3	6	142653
	P2526	1,85	26,0	1,93	1,25	0,3	6	142616
	P2526	2,15	26,0	2,23	1,75	0,3	6	142637
	P2526	2,65	26,0	2,73	1,75	0,3	6	142662
	P2526	3,15	26,0	3,23	2,20	0,3	6	142643

## Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 97-99
- Cutting data see page 179



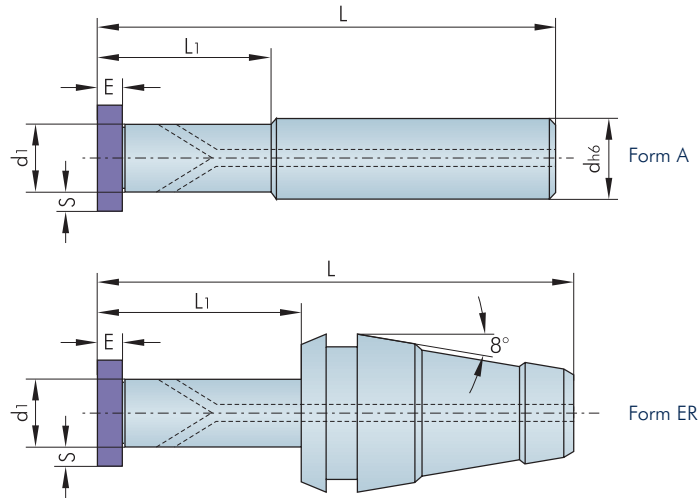
Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	S <sub>max.</sub> mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P12	123619	B	12	12	7,0	2,25	2,0	69,5	22,0	Steel	T8 IP 111656	M2,5x7 107596
	100228	B	12	12	7,0	2,25	2,0	69,5	22,0	Carbide		
	171778	A	12	12	7,0	2,25	2,0	69,5	22,0	Carbide		
	171780	B	12	12	7,0	2,25	2,0	82,0	32,0	Carbide		
	171781	A	12	12	7,0	2,25	2,0	82,0	32,0	Carbide		
	171783	B	12	12	7,0	2,25	2,0	102,0	42,0	Carbide		
P16	123573	B	18	12	9,0	4,00	3,5	71,5	25,0	Steel	T8 IP 111656	M3x12 143158
	123577	B	18	12	9,0	4,00	3,5	71,5	25,0	Carbide		
	171787	A	18	12	9,0	4,00	3,5	71,5	25,0	Carbide		
	123580	B	18	12	9,0	4,00	3,5	86,5	40,0	Carbide		
	171789	A	18	12	9,0	4,00	3,5	86,5	40,0	Carbide		
	123584	A	18	12	9,0	4,00	3,5	104,0	34,0	Carbide		
	123588	A	18	12	12,0	2,70	3,5	86,5	-	Carbide		
	123590	A	18	12	12,0	2,70	3,5	126,6	-	Carbide		
P20	123615	B	22	16	11,5	5,00	5,0	85,6	35,6	Steel	T15 IP 111671	M4x13 107597
	123616	B	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	171794	A	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	123617	B	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	171796	A	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	174314	A	22	16	16,0	2,70	5,0	111,0	-	Carbide		
P25	123592	B	28	16	13,6	6,80	4,0	84,2	35,0	Steel	T20 IP 111594	M5x13,5 107529
	123598	B	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	171855	A	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	123600	B	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	171857	A	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	123603	B	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	171859	A	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	123609	A	28	16	16,0	5,70	4,0	109,6	-	Carbide		
	123611	A	28	16	15,5	6,80	4,0	154,3	-	Carbide		
	123613	A	28	20	15,5	5,70	4,0	180,0	25,0	Carbide		

\* If inserts width <> dimension E are used, dimensions L and L<sub>1</sub> change accordingly.

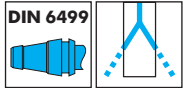
Screw torques max.		
107596	T08 IP	1,0 Nm
143158	T08 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

## Circular Milling Tools for Driven Toolholders

- Inserts see page 97-99
- Cutting data see page 179



4



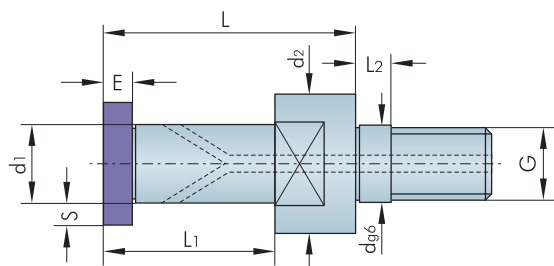
Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	Smax. mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P12	177170	A	12	10	7,0	2,25	2,0	57,0	10,0	Steel	T8 IP 111656	M2,5x7 107596
	177172	ER 16	12		7,0	2,25	2,0		10,0	Steel		
	177173	ER 20	12		7,0	2,25	2,0		15,0	Steel		
P16	177174	A	18	10	9,0	4,00	3,5	64,0	15,0	Steel	T8 IP 111656	M3x12 143158
	177176	ER 16	18		9,0	4,00	3,5		15,0	Steel		
	177177	ER 20	18		9,0	4,00	3,5		20,0	Steel		
P20	177178	A	22	12	11,5	5,00	5,0	68,0	20,0	Steel	T15 IP 111671	M4x13 107597
	177180	ER 20	22		11,5	5,00	5,0		20,0	Steel		
	177181	ER 25	22		11,5	5,00	5,0		25,6	Steel		
P25	177182	A	28	16	13,6	6,80	4,0	74,2	25,0	Steel	T20 IP 111594	M5x13,5 107529
	177184	ER 25	28		13,6	6,80	4,0		25,0	Steel		
	177185	ER 32	28		13,6	6,80	4,0		35,0	Steel		

Screw torques max.

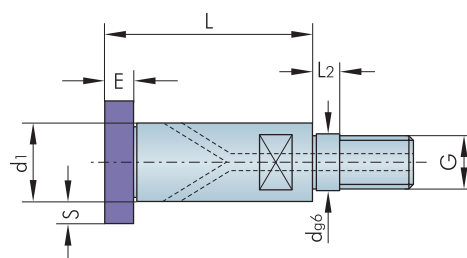
107596	T8 IP	1,0 Nm
143158	T8 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

## Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 97-99
- Cutting data see page 179



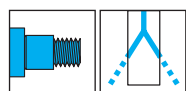
Picture 1



Picture 2



Please adapt cutting data to overhangs length



Type (D)	Order No.	Pic.	Bore Ø min. recommended	dg6 mm	d1 mm	d2 mm	Smax. mm	E mm	L* mm	L1* mm	L2 mm	G	Shaft	Spare part No.	
														Screwdriver	Screw
P12***	177676	2	12	5,5	9,5	-	1,1	3	13,5	-	5,0	M5	Steel	111656	107596
P16	123586	1	18	8,5	9,0	14,4	3,5	3,5	29,5	19,5	5,5	M8	Steel	111656	143158
P16**	177683	2	18	5,5	9,5	-	3,25	3	18,5	-	5,0	M5	Steel	111656	143158
P16***	177698	2	18	6,5	11,0	-	2,5	3	18,5	-	5,0	M6	Steel	111656	143158
P20	123618	1	22	10,5	11,5	18,0	4,2	5	35,0	25,0	5,5	M10	Steel	111671	107597
P20**	177734	2	22	6,5	11,5	-	4,2	5	20,5	-	5,0	M6	Steel	111671	107597
P20***	177735	2	22	8,5	13,5	-	3,25	5	20,5	-	5,5	M8	Steel	111671	107597
P25	123605	1	27	12,5	13,6	22,5	5,7	4	42,5	29,5	5,5	M12	Steel	111594	107529
P25**	177747	2	27	8,5	13,6	-	5,7	4	22,6	-	5,5	M8	Steel	111594	107529
P25***	177767	2	27	10,5	18,0	-	3,5	4	22,6	-	5,5	M10	Steel	111594	107529

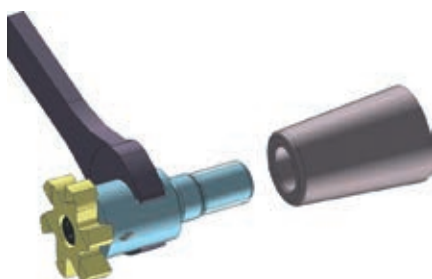
- \* If inserts width <> 4,0 mm are used, dimensions L and L<sub>1</sub> change accordingly.
- \*\* Slim design for thread milling
- \*\*\* Reinforced design

Screw torques max.

107596	T8 IP	1,0 Nm
143158	T8 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

## Assembling Instructions

- Recommended tightening torque for screw-in circular milling body



Thread size (G)	Wrench size mm	Tightening torque Nm
M5	7	8
M6	9	10
M8	11	25
M10	15	40
M12	19	60

## Changing Inserts

Clamp cutter before changing insert. Loosen insert screw. Remove used insert and clean the insert pocket before clamping new insert. Please use the appropriate TIP hex key for the tightening of the inserts and consider the screw tightening torques in the tables.



# TriMILL

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic.mt  
» Driven Tool Holders

## Circular Milling Tools for Contours

The circular milling principle allows outside and inside contours to be manufactured to individual requirements on all CNC machining centers and milling machines. High efficiency is achieved by short machining times, extended tool life, and by reducing or eliminating expensive special tools.

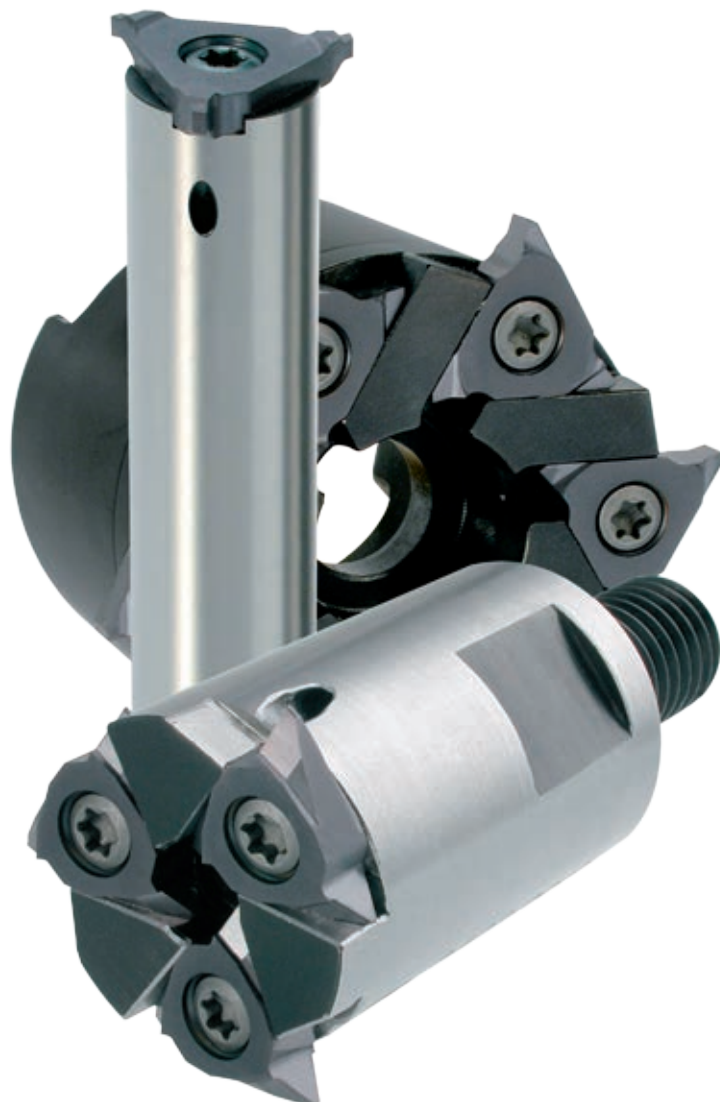
– **High-Precision Free Contours**

– **High-Precision Plunge Cuts**

can be executed with the utmost ease and without chip obstruction problems.

Blind holes can be tapped practically to the base without under-cutting. The use of uniform pitches also reduces storage and purchasing costs. As long as maximum dimensions are maintained, insert profiles can be customized to your specifications.

4

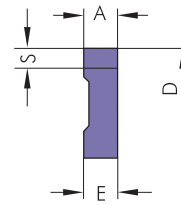


## Slot Milling

- Insert holder see page 106-108
- Cutting data see page 179



Ready for use with clearance angle



Type	A mm	D mm	E mm	S <sub>max.</sub> mm	Order No.	
					K10	TINAMATIC
04	2,00	7,9	2,34	0,35	141737	141719
	2,34	10,6	2,34	1,60	141634	141642
03	3,00	10,6	3,00	1,60	141621	141669
	3,50	17,5	3,50	2,60	141563	141533
02	5,00	17,5	5,00	2,60	141582	141535
	6,00	17,5	6,00	2,60	141571	141544
01	4,00	23,0	4,00	3,45	141372	141361
	6,50	23,0	6,50	3,45	141386	141396
023*	5,00	17,5	5,00	4,00	142016	142060
013	6,50	23,0	6,50	6,00	141963	141972

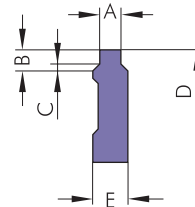
## Circlip Grooves

- Insert holder see page 106-108
- Cutting data see page 179



**DIN 471/472**

With chamfered edge



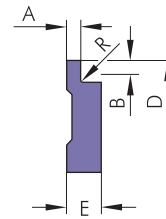
Type	G-Ring	D mm	E mm	A <sub>±0,03</sub> mm	B mm	Cx45° mm	Order No.	
							K10	TINAMATIC
03	1,10	10,6	2,34	1,18	0,50	0,10	141605	141556
	1,10	17,5	3,5	1,18	0,50	0,10	141392	141427
02	1,30	17,5	3,5	1,38	0,85	0,15	141374	141387
	1,60	17,5	3,5	1,68	1,00	0,15	141430	141399
	1,85	17,5	3,5	1,93	1,25	0,20	141419	141409
	2,15	17,5	3,5	2,23	1,50	0,20	141420	141333
	2,65	17,5	3,5	2,73	1,50	0,20	141446	141388
	1,10	23,0	4,0	1,18	0,50	0,10	141177	141161
01	1,30	23,0	4,0	1,38	0,70	0,15	141230	141209
	1,30	23,0	4,0	1,38	0,85	0,15	141198	141199
	1,60	23,0	4,0	1,68	0,85	0,15	141210	141237
	1,60	23,0	4,0	1,68	1,00	0,15	141207	141180
	1,85	23,0	4,0	1,93	1,25	0,20	141170	141193
	2,15	23,0	4,0	2,23	1,50	0,20	141217	141215
	2,65	23,0	4,0	2,73	1,50	0,20	141225	141222
	2,65	23,0	4,0	2,73	1,75	0,20	141227	141048
	3,15	23,0	4,0	3,23	1,75	0,20	141224	141186
	4,15	23,0	6,5	4,23	2,00	0,20	141171	141212
023	1,85	17,5	5,0	1,93	1,25	0,20	141977	141946
	2,15	17,5	5,0	2,23	1,50	0,20	141952	141949
	2,65	17,5	5,0	2,73	1,50	0,20	141992	141997
	2,65	17,5	5,0	2,73	1,75	0,20	141985	141970
	3,15	17,5	5,0	3,23	1,75	0,20	141984	141993
	4,15	17,5	5,0	4,23	2,50	0,20	141967	141973
013	1,85	23,0	6,5	1,93	1,25	0,20	141913	141914
	2,15	23,0	6,5	2,23	1,50	0,20	141867	141892
	2,65	23,0	6,5	2,73	1,50	0,20	141895	141915
	2,65	23,0	6,5	2,73	1,75	0,20	141906	141907
	3,15	23,0	6,5	3,23	1,75	0,20	141893	141924
	4,15	23,0	6,5	4,23	2,00	0,20	141904	141905
	4,15	23,0	6,5	4,23	2,50	0,20	141896	141927

## Circlip Grooves

- Insert holder see page 106-108
- Cutting data see page 179



Without chamfered edge

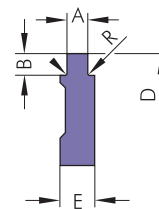


4

Type	G-Ring	D mm	E mm	A <sub>-0,03</sub> mm	B mm	R mm	Order No.	
							K10	TINAMATIC
04	0,90	7,9	2,34	0,98	0,30	0,3	141671	141726
	0,90	10,6	2,34	0,98	0,30	0,3	141623	141611
03	1,10	10,6	2,34	1,18	0,60	0,3	141558	141567
	1,30	10,6	2,34	1,38	0,80	0,3	141592	141609
	1,60	10,6	2,34	1,68	1,00	0,3	141638	141630
	1,85	10,6	2,34	1,93	1,40	0,3	141581	141574
	0,90	17,5	3,50	0,98	0,70	0,3	141414	141416
02	1,10	17,5	3,50	1,18	0,90	0,3	141447	141435
	1,30	17,5	3,50	1,38	1,10	0,3	141462	141431
	1,60	17,5	3,50	1,68	1,25	0,3	141474	141454
	1,85	17,5	3,50	1,93	1,25	0,3	141432	141436
	2,15	17,5	3,50	2,23	1,75	0,3	141445	141437
	2,65	17,5	3,50	2,73	1,75	0,3	141463	141477
	3,15	17,5	3,50	3,23	2,20	0,3	141438	141440
	0,90	23,0	4,00	0,98	0,70	0,3	141229	141254
01	1,10	23,0	4,00	1,18	0,90	0,3	141226	141245
	1,30	23,0	4,00	1,38	1,10	0,3	141249	141261
	1,60	23,0	4,00	1,68	1,25	0,3	141250	141255
	1,85	23,0	4,00	1,93	1,25	0,3	141263	141269
	2,15	23,0	4,00	2,23	1,75	0,3	141252	141258
	2,65	23,0	4,00	2,73	1,75	0,3	141275	141264
	3,15	23,0	4,00	3,23	2,20	0,3	141267	141293
	4,15	23,0	6,50	4,23	2,50	0,3	141253	141305
023	1,85	17,5	5,00	1,93	1,25	0,3	141990	141994
	2,15	17,5	5,00	2,23	1,75	0,3	142004	141980
	2,65	17,5	5,00	2,73	1,75	0,3	142011	141968
013	3,15	17,5	5,00	3,23	2,20	0,3	142008	142014
	2,15	23,0	6,50	2,23	1,75	0,3	141894	141937
	2,65	23,0	6,50	2,73	1,75	0,3	141922	141925
	3,15	23,0	6,50	3,23	2,20	0,3	141928	141930
	4,15	23,0	6,50	4,23	2,50	0,3	141933	141934
	5,15	23,0	6,50	5,23	3,50	0,3	141940	141932

## O-Ring Grooves

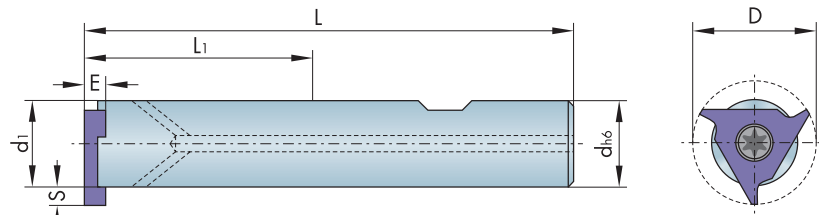
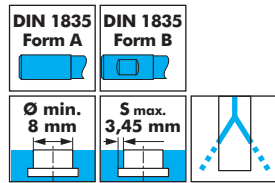
- Insert holder see page 106-108
- Cutting data see page 179



Type	G-Ring	D mm	E mm	A <sub>-0,03</sub> mm	B mm	R mm	Order No.	
							K10	TINAMATIC
03	1,80	10,6	3,0	2,28	1,45	0,2	141661	141654
02	1,80	17,5	3,5	2,28	1,45	0,2	141509	141510
	2,65	17,5	5,0	3,08	2,30	0,2	141512	141470
01	1,80	23,0	4,0	2,28	1,45	0,2	141239	141236
	2,65	23,0	4,0	3,08	2,30	0,2	141310	141277
	3,55	23,0	6,5	4,08	3,10	0,2	141294	141306
023	1,80	17,5	5,0	2,28	1,45	0,2	141986	142012
	2,65	17,5	5,0	3,08	2,30	0,2	141974	142019
013	2,65	23,0	6,5	3,08	2,30	0,2	141897	141919
	3,55	23,0	6,5	4,08	3,10	0,2	141929	141916

## Circular Milling Tools

- Inserts see page 104-105
- Cutting data see page 179
- Carbide grades see page 118



Type	Order No.	Form	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	E mm	*L mm	*L1 mm	Shaft	Spare part No.			
												Screw-driver	Screw		
04	123491*	B	8	7,9	10	7,2	0,35	2,00	59,20	19,20	Steel	T6 IP 111705	107530		
	123477*	B	11	10,6	10	7,4	1,60	2,34	59,54	19,54	Steel				
03	123478*	B	11	10,6	12	7,4	1,60	2,34	67,00	19,54	Steel			T15 IP 111671	107547
	123479*	A	11	10,6	12	7,4	1,60	2,34	67,00	19,54	Steel				
	123480	B	11	10,6	10	7,4	1,60	2,34	76,54	36,54	Carbide				
123489	A	11	10,6	8	8,0	1,25	2,34	80,00	-	Carbide					
02	123445	B	20	17,5	12	12,0	2,60	3,50	77,55	32,20	Steel	T20 IP 111594	107551		
	123446	B	20	17,5	16	12,0	2,60	3,50	82,10	32,20	Steel				
	123447	A	20	17,5	16	12,0	2,60	3,50	82,10	32,20	Steel				
	123448	B	20	17,5	12	12,0	2,60	3,50	112,20	67,20	Carbide				
	123470	A	20	17,5	12	12,0	2,60	3,50	82,80	-	Carbide				
123471	A	20	17,5	12	12,0	2,60	3,50	100,00	-	Carbide					
01	123474	A	20	17,5	12	12,0	2,60	3,50	125,00	-	Carbide	T20 IP 111594	107551		
	123412	B	25	23,0	16	16,0	3,45	4,00	91,00	42,5	Steel				
	123414	B	25	23,0	16	16,0	3,45	4,00	120	71,5	Steel				
	123415**	A	25	23,0	20	17,0	3,00	4,00	97,00	45	Steel				
	170320	A	25	23,0	16	17,0	3,00	4,00	141	92,5	Carbide				
	123416	B	25	23,0	16	17,0	3,00	4,00	141	92,5	Carbide				
123440	A	25	23,0	16	16,0	3,45	4,00	115	-	Carbide					
123441	A	25	23,0	16	16,0	3,45	4,00	152,5	-	Carbide					

\* Without internal coolant supply    \*\* Also suitable as basic body for a tandem cutter.

Screw torques max.  
Type 03 = 0,9 Nm, Size T6 IP  
Type 02 = 3,8 Nm, Size T15 IP  
Type 01 = 5,5 Nm, Size T20 IP

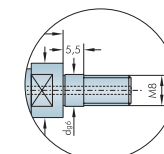
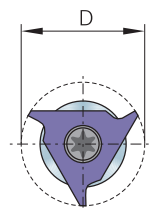
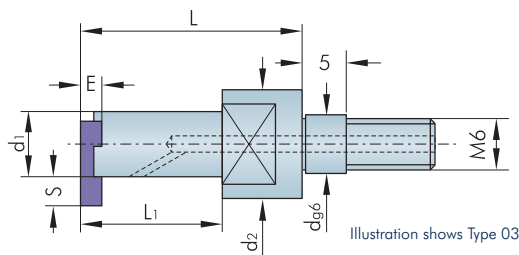


Illustration shows Type 02

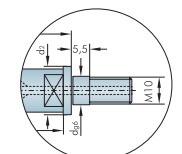
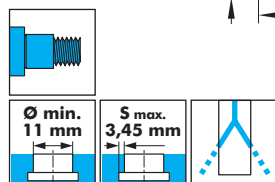


Illustration shows Type 01



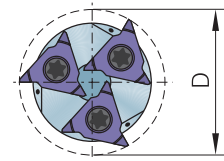
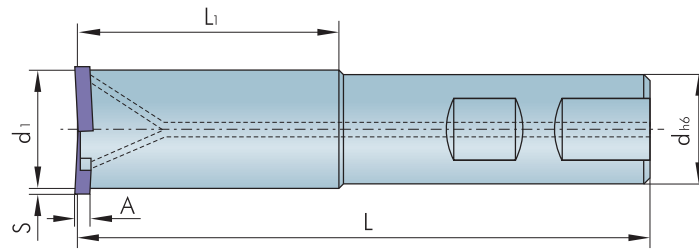
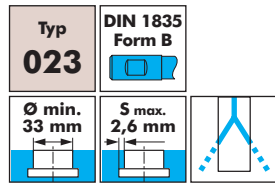
**Please adapt cutting data to overhangs length**

Type	Order No.	Bore Ø min.	D mm	dg6 mm	d1 mm	d2 mm	Smax. mm	E mm	*L mm	*L1 mm	Shaft	Spare part No.	
												Screw-driver	Screw
03	123481	11	10,6	6,5	7,4	10,0	1,60	2,34	25	16	Steel	111705	107530
02	123450	20	17,5	8,5	12,2	15,4	2,60	3,50	31	22	Steel	111671	107547
01	123419	25	23,0	10,5	16,1	18,0	3,45	4,00	36	33	Steel	111594	107551

Screw torques max.  
Type 03 = 0,9 Nm, Size T6 IP  
Type 02 = 3,8 Nm, Size T15 IP  
Type 01 = 5,5 Nm, Size T20 IP

## Circular Milling Tools

- Inserts see page 104-105
- Cutting data see page 179
- Carbide grades see page 118

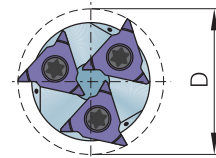
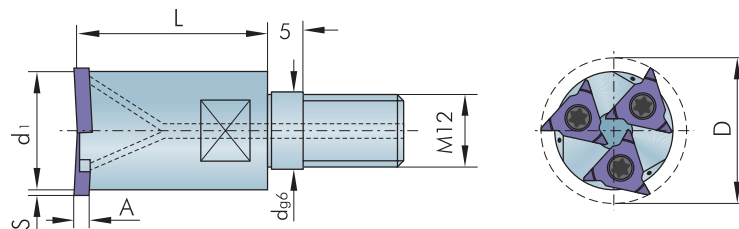
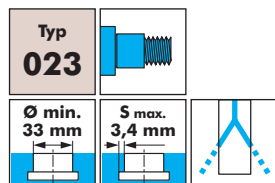


4

Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	A mm	L mm	L1 mm	Inserts	Shaft
123462	33	32	25	26,8	2,6	5	125	67	3	Steel

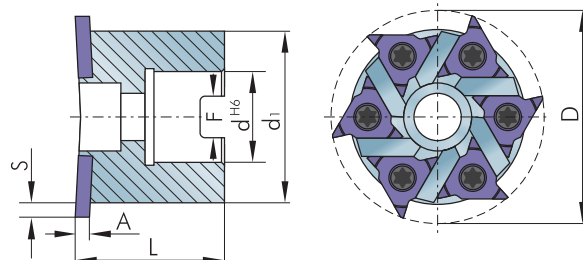
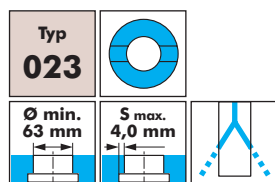
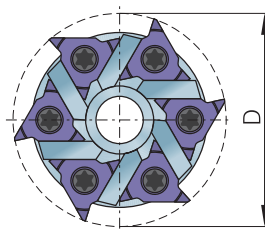
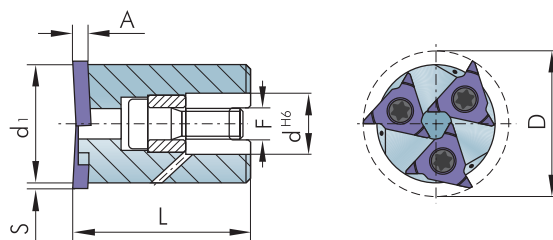
Spare part No.	
T15 IP Screw-driver	Screw
111671	107547
Screw torque max. 3,8 Nm	

**!** Please adapt cutting data to overhangs length



Order No.	Bore Ø min.	D mm	dg6 mm	d1 mm	Smax. mm	A mm	L mm	Inserts	Shaft
123465	33	32	12,5	24,3	3,8	5	40	3	Steel

Spare part No.	
T15 IP Screw-driver	Screw
111671	107547
Screw torque max. 3,8 Nm	



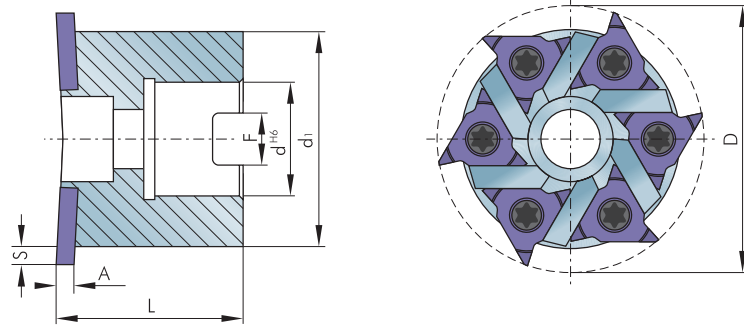
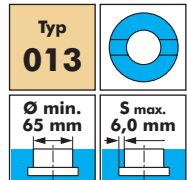
Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	A mm	F mm	L mm	Inserts
123464	40	38	16	31	3,4	5,0	8,4	46	3
123461*	55	50	22	42	3,9	5,0	10,4	40	6

Accessories	Spare part No.	
Key	T15 IP Screw-driver	Screw
134984	111671	107547
	111671	107547
Screw torque max. 3,8 Nm		

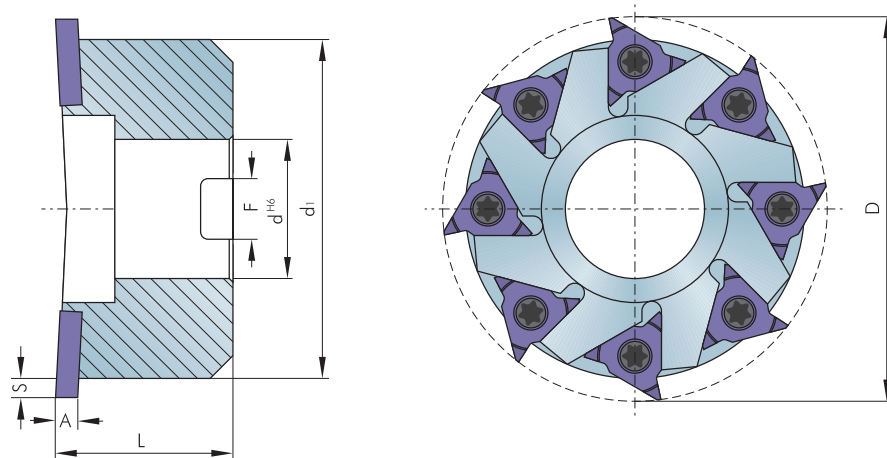
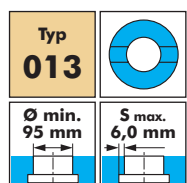
\* Cutter clamping screw internal hexagon  
Order No. 114684

## Circular Milling Tools

- Inserts see page 104-105
- Cutting data see page 179
- Carbide grades see page 118



Order No.	Bore Ø min.	D mm	dH6 mm	d1 mm	Smax. mm	A mm	F mm	L mm	Inserts	Spare part No.	
123435	65	63	27	51	6	6,5	12,4	44	6	<b>T20 IP</b> Screw-driver	Screw
										Screw torque max. 5,5 Nm	
										Cutter clamping screw internal hexagon	
										<b>Order No.</b>	114695



Order No.	Bore Ø min.	D mm	dH6 mm	d1 mm	Smax. mm	A mm	F mm	L mm	Inserts	Spare part No.	
123436	95	90	32	78	6	6,5	14,4	40	8	<b>T20 IP</b> Screw-driver	Screw
										Screw torque max. 5,5 Nm	

# DeepMILL

## Slot Milling, Grooving, Milling of Cooling Fins

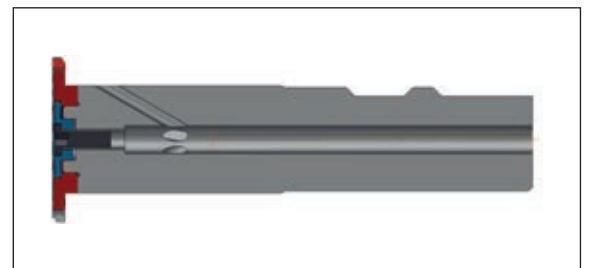
4

With PolyMILL and TriMILL solid carbide inserts, mimatic sets the bar for grooving and profile milling applications. With more than a decades worth of applications involving industry leading customers Mimatic is an established brand at the forefront of these applications.

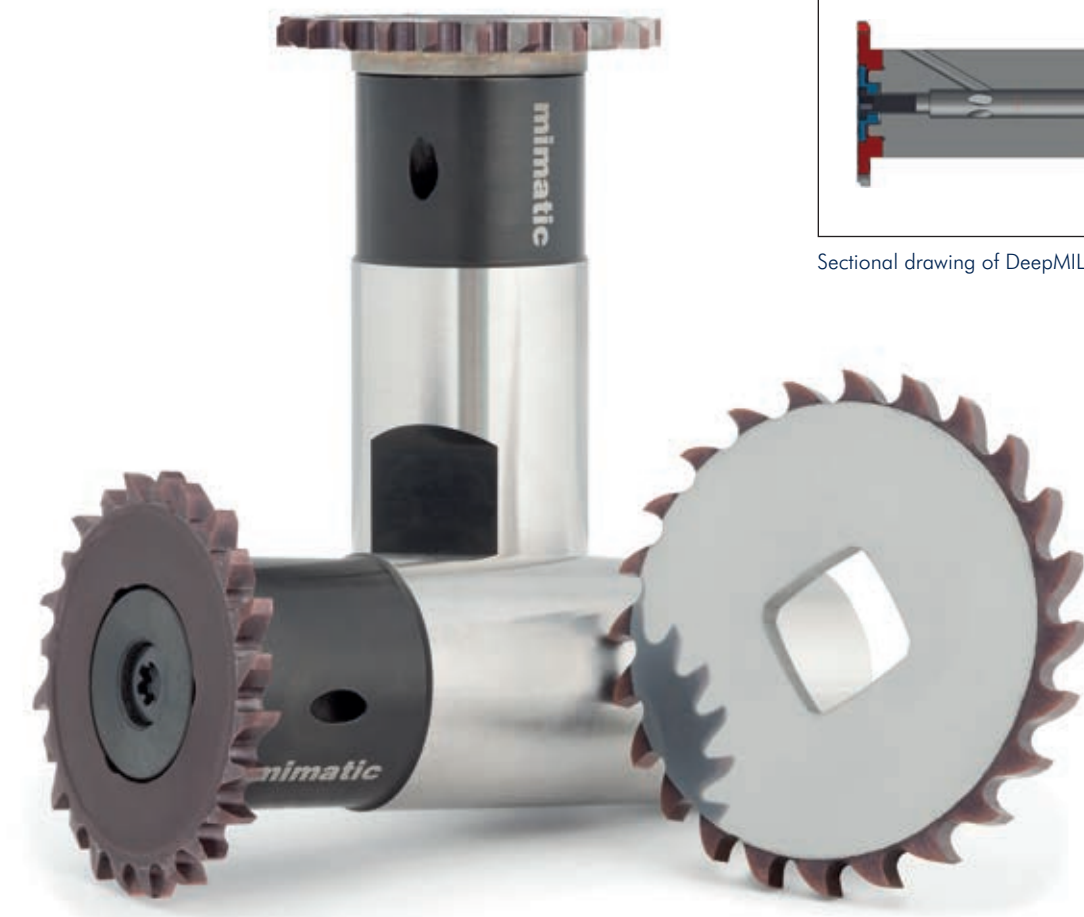
mimatic meets the permanent demand for higher power and larger cutting depths with new innovations. With the latest product development DeepMILL, the limit of the impossible has been exceeded again by mimatic - and this time by a quantum leap.

- Larger range of applications
- Defined tooth and cutting edge geometry
- mimatic core competence: Polygon interface → Quadragon interface
- High performance coatings
- Internal coolant direct to the edges
- Clamping with only one center screw
- Special chip space geometry

**The Result of mimatic Development:  
DeepMILL with a Up to Tenfold Cutting Performance.**



Sectional drawing of DeepMILL-G



# DeepMILL

## Milling Tools in New Dimensions of Performance



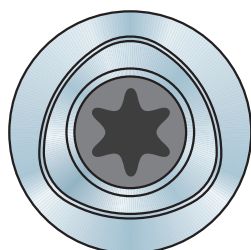
### DeepMILL-G

- With DeepMILL-G can be milled up to shoulders
- Cutting edges on the face can be used for special machining operations
- On request: Increased cutting depths (S) achievable with reductions in speed/feed
- + **Re-sharpen-Service 2x**
- + Minimum distance for operations to shoulders: 0,001 mm

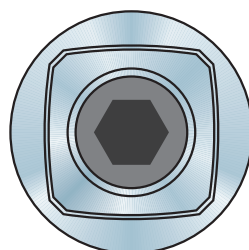
### DeepMILL-ECO

- DeepMILL-ECO is the economical alternate to DeepMILL-G
  - + deeper cutting depths
  - + more cost-effective
  - Minimum distance to shoulders: 1,8 mm
- On request: Increased cutting depths (S) achievable with reductions in speed/feed
- Re-sharpen-Service: 1x

## The mimatic Polygon Interface – A Success Story with Continuous Evolution: Quadrogon



mimatic  
Polygon Interface



mimatic  
Quadrogon\* Interface

Since their development and launch in 1994, the mimatic polygon interface is the guarantee for high cutting performance with maximum precision and repeatability in the circular milling.

In the tool systems PolyMILL and Poly-REAM, the polygon interface enables the reliable circular thread milling and reaming as well as T-slot milling and

grooving. In many practical applications, the interface has established itself as a key factor for successful milling operations under difficult conditions.

With the development of the new tool systems DeepMILL and PolySAW, the development of the polygon interface has evolved as well. Under the brand name mimatic Quadrogon, the inter-

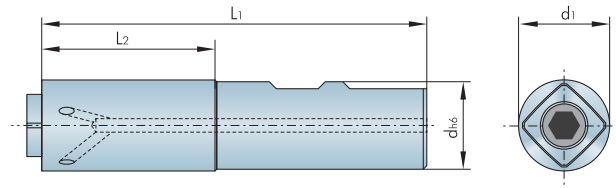
face has been optimized specifically for the needs of this new mimatic high-performance tool.

\* patent-protected.

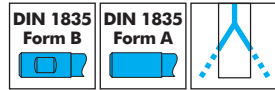


## Basic Holders

- Cutting data see page 180
- Carbide coating see page 118



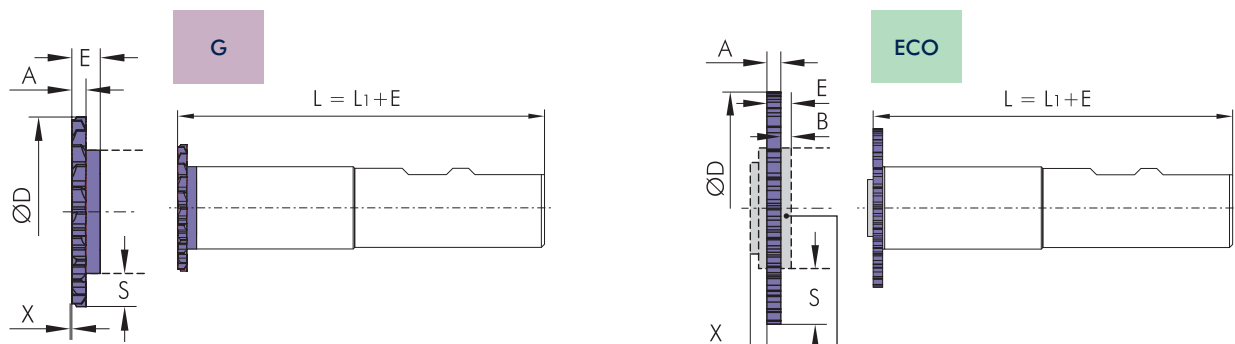
4



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	11	20	1835 B	91	40	18,8	163701	178296	SW 3
	11	20	1835 A	91	40	18,8	160050	178296	SW 3
	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4
ECO	11	16	1835 B	80	30	15	163708	178296	SW 3
	11	16	1835 A	80	30	15	160057	178296	SW 3
	13	20	1835 B	86	35	17	163709	178297	SW 4
	13	20	1835 A	86	35	17	160058	178297	SW 4

Screw torques max.  
Type 11 = max. 10,5 Nm  
Type 13 = max. 24,5 Nm

## Milling Discs



Milling depth max.

Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

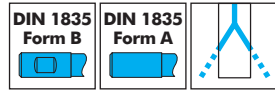
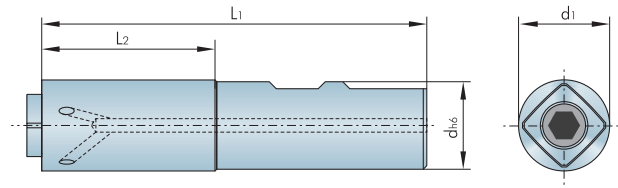
Disc is included in the delivery

System	Type	A* mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	13	2	5,2	5,0	0,001	32	6	-	20	164440	on request
	11	2	6,6	5,0	0,001	32	6	-	20	164402	on stock
	13	3	5,2	5,0	0,001	32	6	-	20	164441	on request
	11	3	6,6	5,0	0,001	32	6	-	20	164403	on stock
	13	4	5,2	5,0	0,001	32	6	-	20	164404	on stock
	11	4	6,6	5,0	0,001	32	6	-	20	164442	on request
	13	5	5,2	5,0	0,001	32	6	-	20	164405	on stock
	11	5	6,6	4,0	0,001	32	6	-	20	164443	on request
ECO	13	2	7,5	5,0	1,8	32	4,15	2,15	20	164542	on request
	11	2	8,5	5,0	1,8	32	4,15	2,15	20	164502	on stock
	13	3	7,5	5,0	1,8	32	3,65	0,65	20	164543	on request
	11	3	8,5	5,0	1,8	32	3,65	0,65	20	164503	on stock
	13	4	7,5	5,5	1,8	32	4	-	18	164504	on stock
	11	4	8,5	5,0	1,8	32	4	-	18	164540	on request
	13	5	7,5	4,0	1,8	32	5	-	18	164505	on stock
	11	5	8,5	4,0	1,8	32	5	-	18	164541	on request

\* narrower widths, see PolySAW \*\* more spare parts see page 117

## Basic Holders

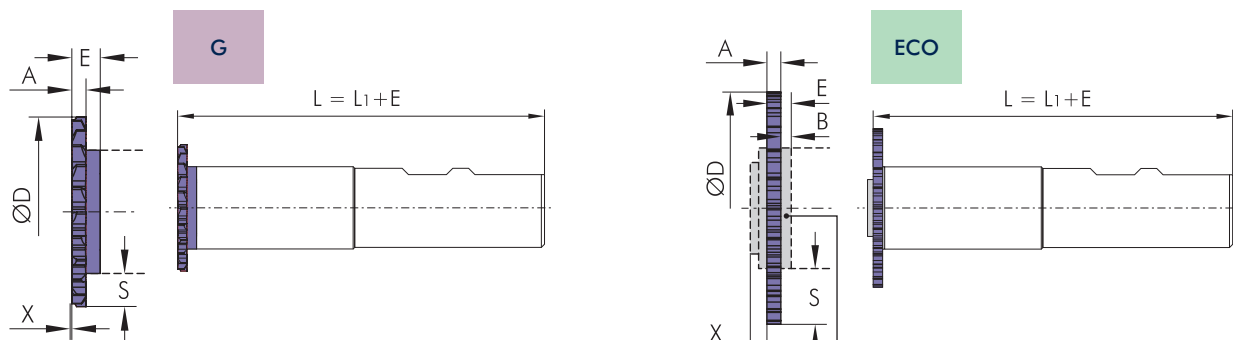
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4
	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3
ECO	13	20	1835 B	86	35	17	163709	178297	SW 4
	13	20	1835 A	86	35	17	160058	178297	SW 4
	16	20	1835 B	91	40	20	163710	178296	SW 3
	16	20	1835 A	91	40	20	160059	178296	SW 3

Screw torques max.  
Type 13 = max. 24,5 Nm  
Type 16 = max. 6 Nm

## Milling Discs



Milling depth max.

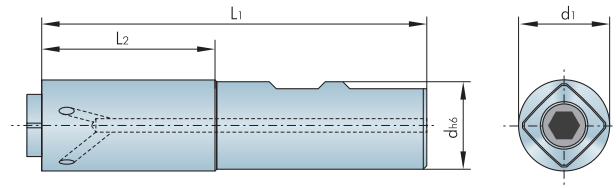
Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

Disc is included in the delivery

System	Type	A* mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	16	2	7,0	5,0	0,001	40	6	-	24	164444	on request
	13	2	9,2	5,0	0,001	40	6	-	24	164408	on stock
	16	3	7,0	5,0	0,001	40	6	-	24	164445	on request
	13	3	9,2	5,0	0,001	40	6	-	24	164409	on stock
	16	4	7,0	5,0	0,001	40	6	-	20	164410	on stock
	13	4	9,2	5,0	0,001	40	6	-	20	164446	on request
	16	5	7,0	5,0	0,001	40	6	-	20	164411	on stock
	13	5	9,2	4,5	0,001	40	6	-	20	164447	on request
ECO	16	2	10,0	5,0	1,8	40	4,15	2,15	24	164546	on request
	13	2	11,5	5,0	1,8	40	4,15	2,15	24	164508	on stock
	16	3	10,0	5,0	1,8	40	3,65	0,65	24	164547	on request
	13	3	11,5	5,0	1,8	40	3,65	0,65	24	164509	on stock
	16	4	10,0	6,0	1,8	40	4	-	20	164510	on stock
	13	4	11,5	6,0	1,8	40	4	-	20	164544	on request
	16	5	10,0	6,0	1,8	40	5	-	20	164511	on stock
	13	5	11,5	4,5	1,8	40	5	-	20	164545	on request

## Basic Holders

- Cutting data see page 180
- Carbide coating see page 118



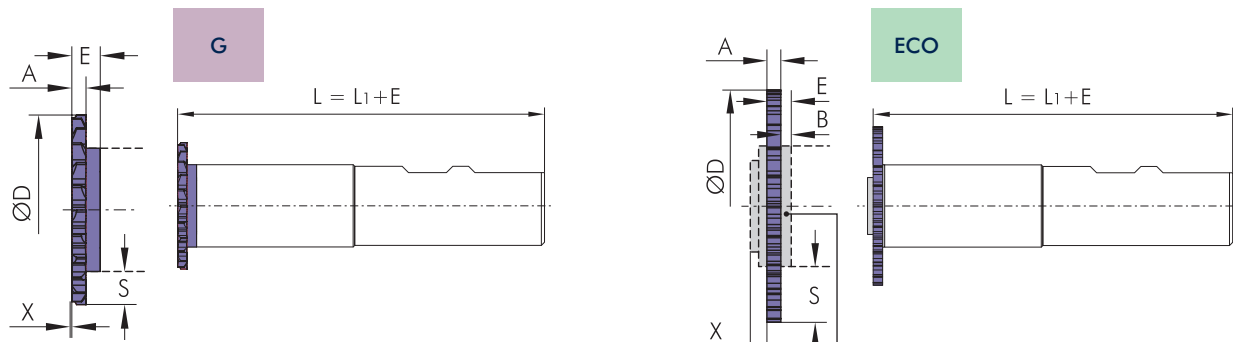
4



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3
	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3
ECO	16	20	1835 B	91	40	20	163710	178296	SW 3
	16	20	1835 A	91	40	20	160059	178296	SW 3
	19	25	1835 B	105	45	23	163711	178296	SW 3
	19	25	1835 A	105	45	23	160060	178296	SW 3

Screw torques max.  
Type 16 = max. 6 Nm  
Type 19 = max. 10,5 Nm

## Milling Discs



Milling depth max.

Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

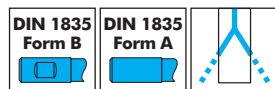
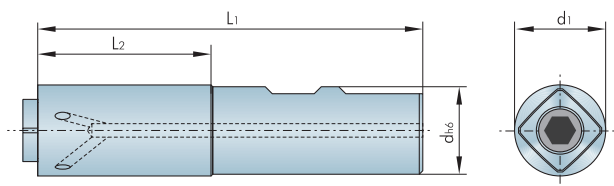
Disc is included in the delivery

System	Type	A* mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	19	2	10,0	7,0	0,001	50	6	-	24	164448	on request
	16	2	12,0	7,0	0,001	50	6	-	24	164414	on stock
	19	3	10,0	7,0	0,001	50	6	-	24	164449	on request
	16	3	12,0	7,0	0,001	50	6	-	24	164415	on stock
	19	4	10,0	7,0	0,001	50	6	-	24	164416	on stock
	16	4	12,0	7,0	0,001	50	6	-	24	164450	on request
	19	5	10,0	7,0	0,001	50	6	-	24	164417	on stock
	16	5	12,0	7,0	0,001	50	6	-	24	164451	on request
ECO	19	2	13,5	5,0	1,8	50	4,15	2,15	32	164550	on request
	16	2	15,0	5,0	1,8	50	4,15	2,15	32	164514	on stock
	19	3	13,5	7,0	1,8	50	3,65	0,65	24	164551	on request
	16	3	15,0	7,0	1,8	50	3,65	0,65	24	164515	on stock
	19	4	13,5	7,0	1,8	50	4	-	24	164516	on stock
	16	4	15,0	7,0	1,8	50	4	-	24	164548	on request
	19	5	13,5	7,0	1,8	50	5	-	24	164517	on stock
	16	5	15,0	6,5	1,8	50	5	-	24	164549	on request

\* narrower widths, see PolySAW \*\* more spare parts see page 117

## Basic Holders

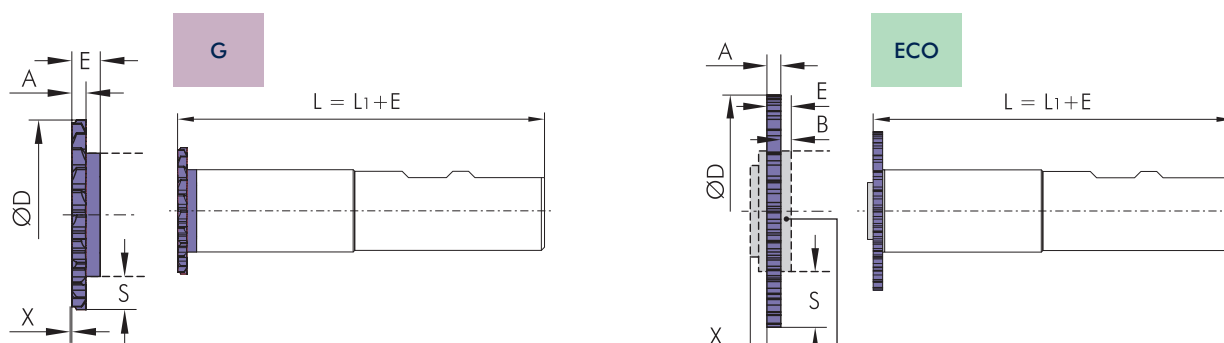
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3
	25	32	1835 B	127	60	38	163705	178297	SW 4
	25	32	1835 A	127	60	38	160054	178297	SW 4
ECO	25	32	1835 B	122	55	29	163712	178297	SW 4
	25	32	1835 A	122	55	29	160061	178297	SW 4
	19	25	1835 B	105	45	23	163711	178296	SW 3
	19	25	1835 A	105	45	23	160060	178296	SW 3

Screw torques max.  
Type 19 = max. 10,5 Nm  
Type 25 = max. 24,5 Nm

## Milling Discs



Milling depth max.

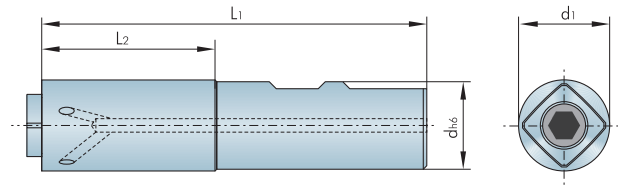
Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

Disc is included in the delivery

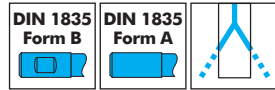
System	Type	A* mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	25	2	12,4	8	0,001	63	6	-	24	164452	on request
	19	2	16,5	8	0,001	63	6	-	24	164420	on stock
	25	3	12,4	8	0,001	63	6	-	24	164453	on request
	19	3	16,5	8	0,001	63	6	-	24	164421	on stock
	25	4	12,4	8	0,001	63	6	-	24	164422	on stock
	19	4	16,5	8	0,001	63	6	-	24	164454	on request
	25	5	12,4	8	0,001	63	6	-	24	164423	on stock
	19	5	16,5	8	0,001	63	6	-	24	164455	on request
ECO	25	2	17,0	5	1,8	63	4,15	2,15	40	164554	on request
	19	2	20,0	5	1,8	63	4,15	2,15	40	164520	on stock
	25	3	17,0	6	1,8	63	3,65	0,65	32	164555	on request
	19	3	20,0	6	1,8	63	3,65	0,65	32	164521	on stock
	25	4	17,0	6	1,8	63	4	-	32	164522	on stock
	19	4	20,0	6	1,8	63	4	-	32	164552	on request
	25	5	17,0	8	1,8	63	5	-	24	164523	on stock
	19	5	20,0	8	1,8	63	5	-	24	164553	on request

## Basic Holders

- Cutting data see page 180
- Carbide coating see page 118



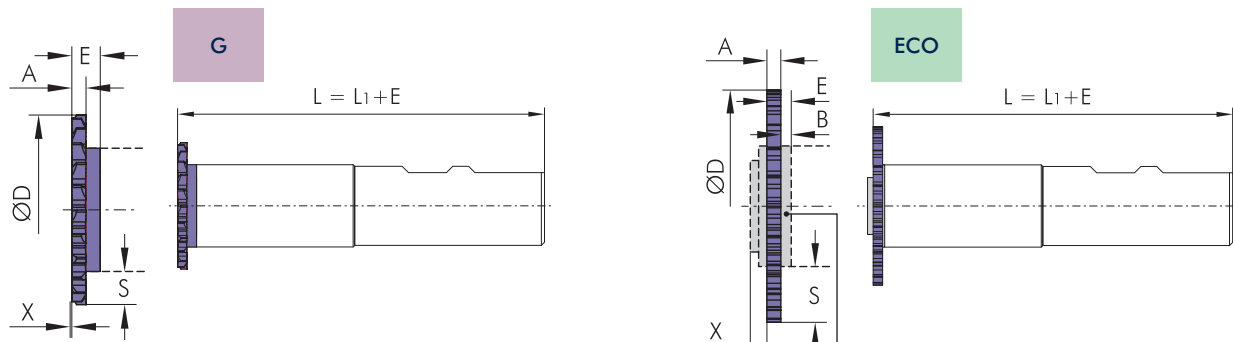
4



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	35	32	1835 B	132	65	49	163706	178297	SW 4
	35	32	1835 A	132	65	49	160055	178297	SW 4
	25	32	1835 B	127	60	38,2	163705	178297	SW 4
	25	32	1835 A	127	60	38,2	160054	178297	SW 4
ECO	35	32	1835 B	127	60	39	163713	178297	SW 4
	35	32	1835 A	127	60	39	160062	178297	SW 4
	25	32	1835 B	122	55	29	163712	178297	SW 4
	25	32	1835 A	122	55	29	160061	178297	SW 4

Screw torques max.  
Type 35 = max. 24,5 Nm  
Type 25 = max. 24,5 Nm

## Milling Discs



Milling depth max.

Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

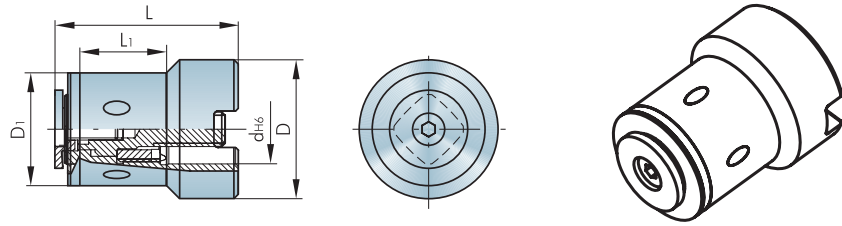
Disc is included in the delivery

System	Type	A* mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	35	2	15,5	10	0,001	80	6	-	24	164456	on request
	25	2	20,9	10	0,001	80	6	-	24	164426	on stock
	35	3	15,5	10	0,001	80	6	-	24	164457	on request
	25	3	20,9	10	0,001	80	6	-	24	164427	on stock
	35	4	15,5	10	0,001	80	6	-	24	164428	on stock
	25	4	20,9	10	0,001	80	6	-	24	164458	on request
	35	5	15,5	10	0,001	80	6	-	24	164429	on stock
	25	5	20,9	10	0,001	80	6	-	24	164459	on request
ECO	35	2	20,5	6	1,8	80	4,15	2,15	40	164558	on request
	25	2	25,5	6	1,8	80	4,15	2,15	40	164526	on stock
	35	3	20,5	6	1,8	80	3,65	0,65	40	164559	on request
	25	3	25,5	6	1,8	80	3,65	0,65	40	164527	on stock
	35	4	20,5	8	1,8	80	4	-	32	164528	on stock
	25	4	25,5	8	1,8	80	4	-	32	164556	on request
	35	5	20,5	8	1,8	80	5	-	32	164529	on stock
	25	5	25,5	8	1,8	80	5	-	32	164557	on request

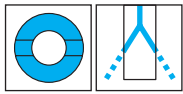
\* narrower widths, see PolySAW \*\* more spare parts see page 117

## Basic Holders with Location Bore

- Cutting data see page 180
- Carbide coating see page 118



When using PolySaw ECO, as well as DeepMill ECO, the cutting depth is reduced by 6 or 7 mm

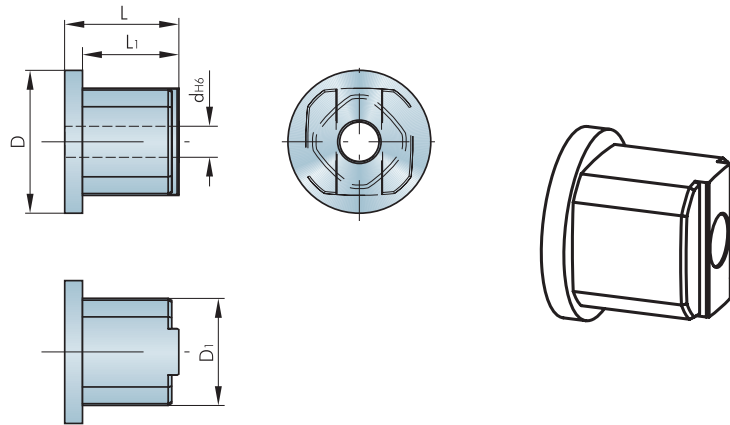


System	Typ	dH6 mm	L mm	L1 mm	D mm	D1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	ECO	16	43	20	32	26	179727	178296	SW 3
		19	43	20	32	30	179728	178296	SW 3
		25	43	20	32	29	156493	178297	SW 4

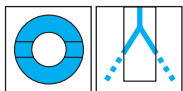
Screw torques max.  
Type 16 = max. 6 Nm  
Type 19 = max. 10,5 Nm  
Type 25 = max. 24,5 Nm

## Saw Blade Arbors for mimatic Saw Blade Holders

- Cutting data see page 180
- Carbide coating see page 118



When using PolySaw ECO, as well as DeepMill ECO, the cutting depth is reduced by 6 or 7 mm

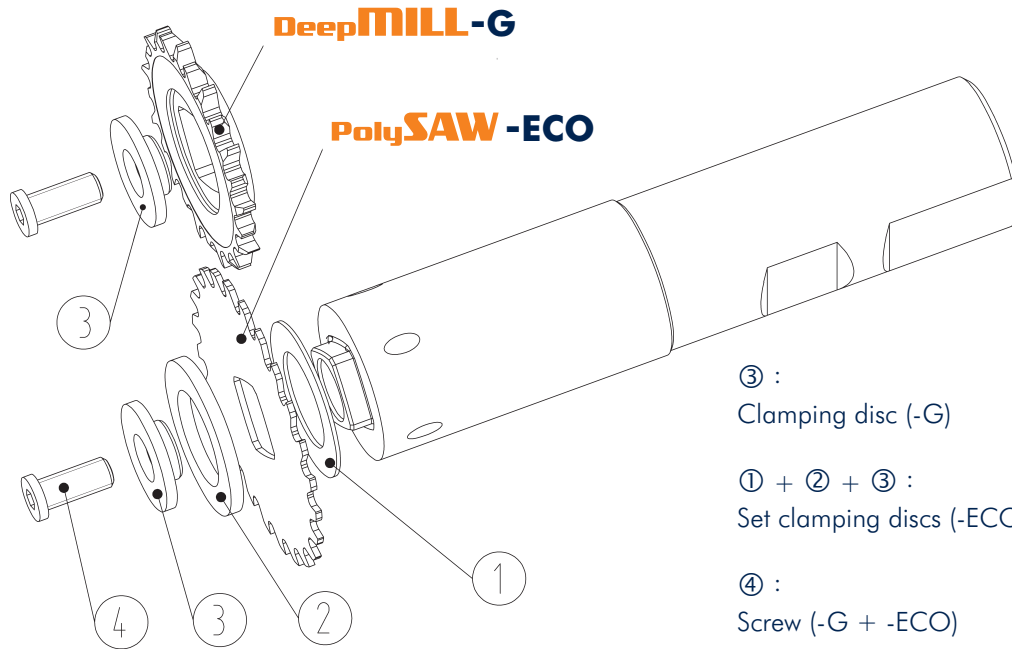


System	Typ	dH6 mm	L mm	L1 mm	D mm	D1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
ECO	25	10	32	27	30	25	179252	178297	SW 4
	35	10	32	27	30	35	180316	178297	SW 4

Screw torques max.  
Type 35 = max. 24,5 Nm  
Type 25 = max. 24,5 Nm

# DeepMILL / PolySAW

## Assembly and Spare Parts



- ③ : Clamping disc (-G)
- ① + ② + ③ : Set clamping discs (-ECO)
- ④ : Screw (-G + -ECO)

### Assembly notes

Please tighten the clamping screw with the specified torque. In the selection of the DeepMILL basic holder and machine tool holder should be chosen the shortest possible setup.

### Service

Please don't hesitate to take the advantage of the mimatic service. Mimatic engineers will offer machining recommendations to optimize your specific applications.

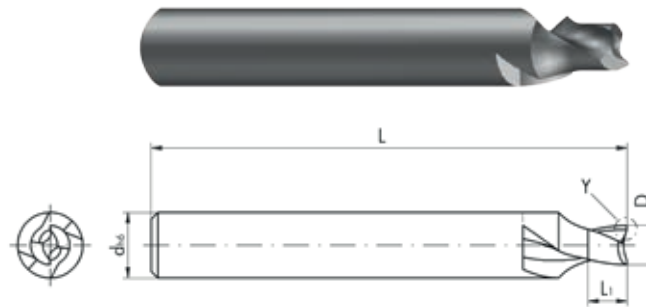
Type	Spare Parts		
	④ Screw	③ Clamping disc	① ② ③ Set Clamping discs
09	163842	–	163800
11	163843	–	163802
13	163844	–	163804
16	163850	175027	163806
19	163848	163845	163808
25	163849	163846	163810
35	163849	163847	163812

Screw torques max.

163842	Type 09	M4	3,8 Nm
163843	Type 11	M6	10,5 Nm
163844	Type 13	M8	24,5 Nm
163850	Type 16	M5	6,0 Nm
163848	Type 19	M6	10,5 Nm
163849	Type 24	M8	24,5 Nm
163849	Type 35	M8	24,5 Nm

## Keyway Slot Milling Cutters

- **CNC-Turning Machines with Y-Axis**  
Increased stiffness, higher precision
- **CNC-Turning Machines without Y-Axis**  
Optimized straight run-out
- **Short Process Times**



Type: right-hand cutting  
Tool design: double-edged  
spiral fluted  
15° helix angle  
without coolant

Nominal Slot Size D <sub>Ps</sub> mm	L <sub>1</sub> mm	d <sup>h6</sup> mm	L mm	Order No.	
				TINAMATIC	
				DIN 6535 HA	DIN 6535 HB
2	4	8	64,0	164341	164349
3	5	8	64,0	164342	164350
4	6	10	73,2	164343	164351
5	7	10	73,2	164344	164352
6	8	12	74,2	175538	164353
8	9	12	74,2	164345	164354
10	10	12	74,2	164346	164355
12	11	16	77,0	164347	164356
14	12	16	77,0	164348	164357

## Carbide Grades

### K

Uncoated universal grade for turning unalloyed grey cast iron, black heart castings, alloys and non-ferrous metals with stable machining conditions. High wear resistance.

### FKN

Uncoated grade with fine grain, specifically for titanium and other alloys as well as non-ferrous metals. The homogeneous structure ensures good edge toughness and resistance to wear at high cutting speeds.

### TINAMATIC

Grade with multi-layer wear-resistant coating for dry and high-speed machining. Very high thermal and chemical resistance in combination with long service life.

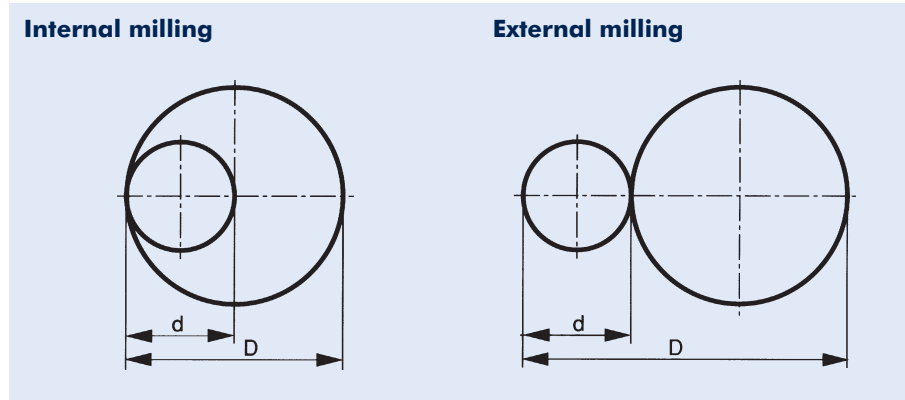
### P

Uncoated universal grade for turning steel. Good resistance to thermal and mechanical stress with high wear resistance and edge toughness.



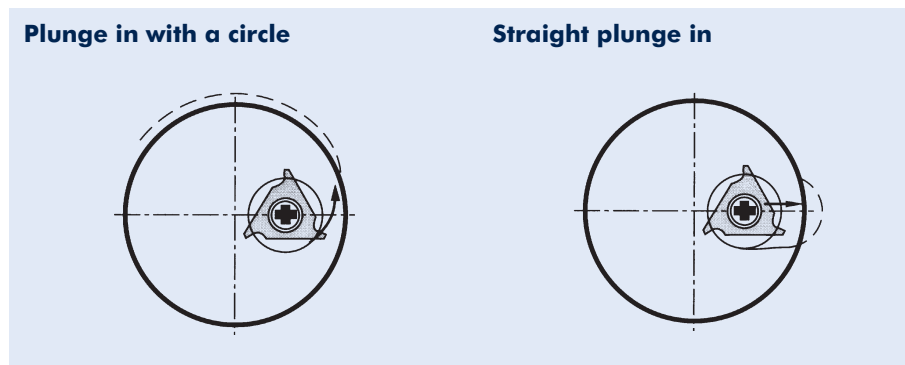
## Information about Circular Milling

4

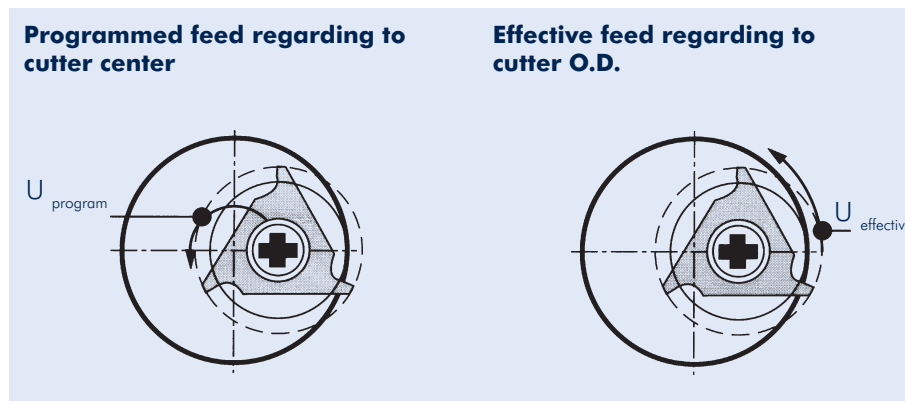


The best diameter relation is reached if the bore diameter to the cutter diameter is 2:1.

**Climb milling is recommended.**



If possible, always plunge in with a circle. If plunging in straight, only use 1/3 of the feed. After having reached the plunge depth, move with full speed.

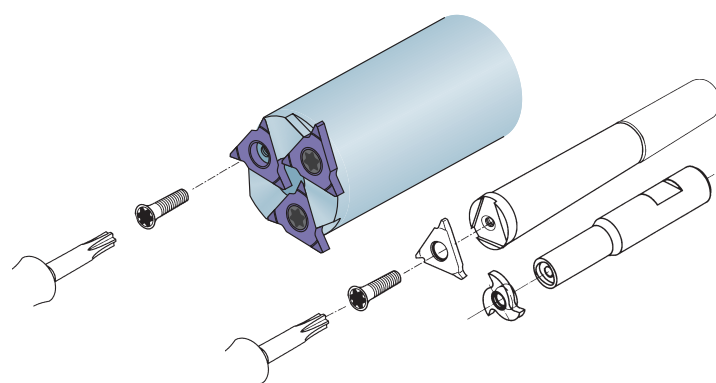


Always check the real feed speed at cutter O.D.

## Assembling Instructions

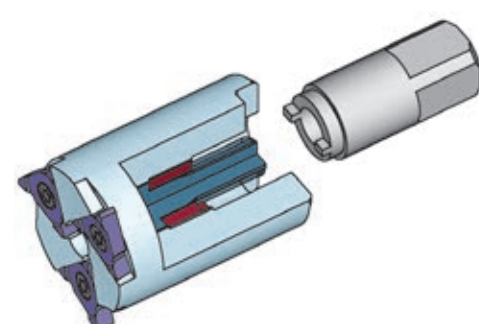
### Changing Inserts

Clamp cutter before changing insert. Loosen insert screw. Remove used insert and clean the insert pocket before clamping new insert. Please use the appropriate TIP hex key for the tightening of the inserts.



### Changing Clamping Screws

Only for circular milling cutter no. 123464



## Calculation Formula for the Circular Milling

$$v_c = \frac{d \cdot \pi \cdot n}{1000}$$

$$n = \frac{v_c \cdot 1000}{d \cdot \pi}$$

$$v_{f2} = f_z \cdot z \cdot n$$

**Calculating the feed rate of the cutting center path (Outer contour)**

$$v_{f3} = \frac{v_{f2} \cdot \left[ 2 \cdot \left( \frac{D}{2} - a_r + \frac{d}{2} \right) \right]}{D - (2 \cdot a_r)}$$

**Calculating the feed rate of the cutting center path (Inner contour)**

$$v_{f3} = \frac{v_{f2} \cdot \left[ 2 \cdot \left( \frac{D}{2} + a_r - \frac{d}{2} \right) \right]}{D + (2 \cdot a_r)}$$

**Plunge in feed „Plunge in the arc“**

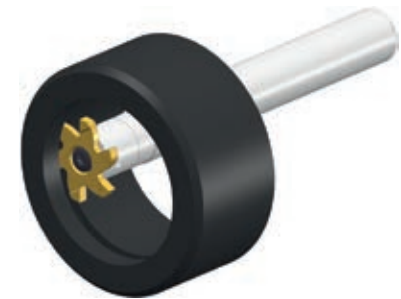
$$V_f = v_{f3}$$

**Calculation of the middle chip thickness**

$$h_m = \frac{f_z}{\sqrt{\frac{d}{a_r}}}$$

$$f_z = h_m \cdot \sqrt{\frac{d}{a_r}}$$

n (rpm)	Spindle speed
$v_c$ (m/min)	Cutting speed
d (mm)	Cutter diameter
D (mm)	Shaft or bore diameter
$v_f$ (mm/min)	Plunge feed
$v_{f2}$ (mm/min)	Effective feed speed
$v_{f3}$ (mm/min)	Programmed feed speed (Cutter center track)
$f_z$ (mm)	Feed per insert
z	Number of inserts
$a_r$ (mm)	Chip depth, radial
$h_m$ (mm/rev.)	Middle chip thickness

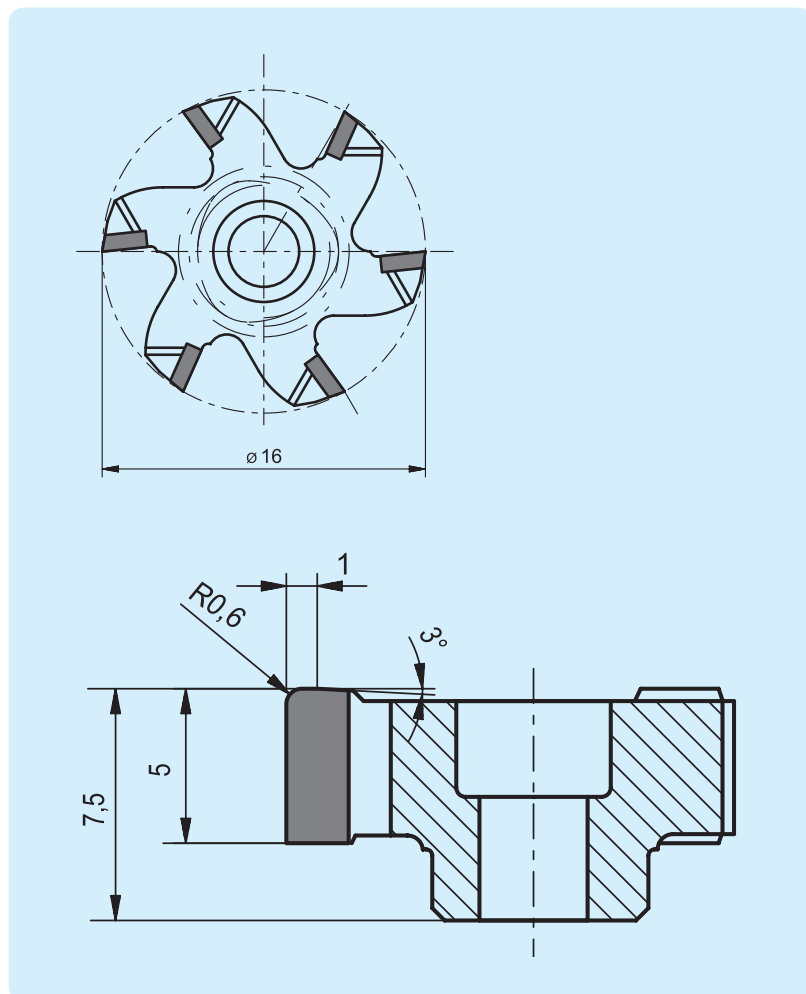




## PolyMILL- and TriMILL-Tools with PCD-Inserts

The established mimatic PolyMILL- and TriMILL tools for creating threads, grooves and special geometries are also available in PCD quality.

For machining of silicium-containing aluminum alloys or carbon-fibre reinforced composite materials, PCD (polycrystalline diamond) has proven itself.



Today, amazing components are manufactured from CFK materials, for example the wings of the A380.

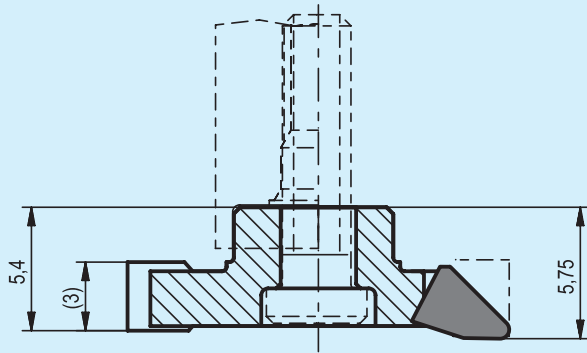
With rising energy costs, machining with these special materials, **you will be well prepared using mimatic cutting tools!**



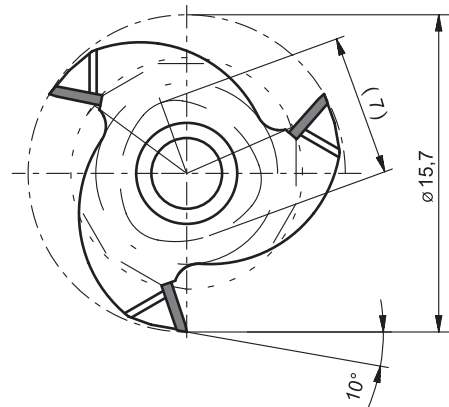
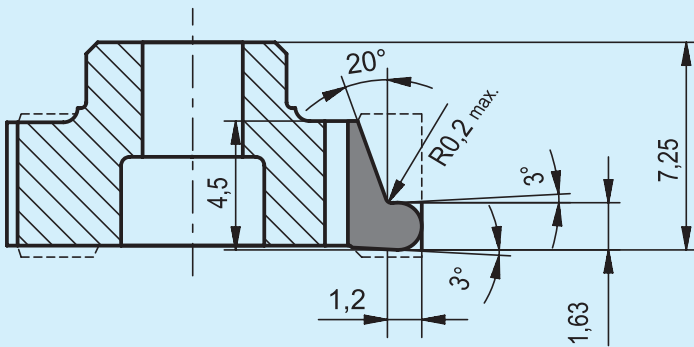
## PolyMILL- and TriMILL-Tools with PCD-Inserts

Examples of realized mimatic tools with mit PCD inserts: The tools are designed on demand.

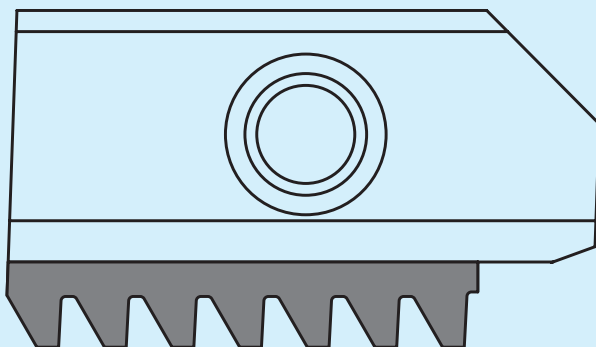
4



PolyMILL-tool with 6 PCD cutting edges for a special contour milling application



PolyMILL-tool with 3 PCD cutting edges for a special profile application



Insert with PCD cutting edge profile for thread milling application

**Contour and Radius Milling  
Chamfering and Deburring**



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Table of Contents

### PolyMILL



#### Inserts

Radius milling, concave shapes	127
Radius milling, convex shapes	127
Chamfering and deburring	128

#### Tool Holders

with cylindrical shank	129
------------------------	-----

### TriMILL



#### Inserts

Chamfering and deburring	130
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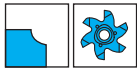
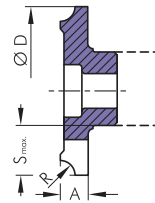
#### Tool Holders

with cylindrical shank	130
with tightening shank	131
Face milling cutter	131



## Radius Milling, Concave Shapes

- Insert holder see page 129
- Cutting data see page 179

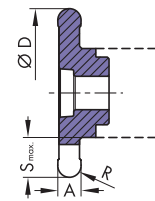


Type	D mm	A mm	R mm	S <sub>max</sub> mm	Number of teeth	Order No. TINAMATIC	
P25	P2526	26	3,0	0,5	0,5	6	179425
	P2526	26	3,0	1,0	1,0	6	179426
	P2526	26	4,0	1,5	1,5	6	179427
	P2526	26	4,0	2,0	2,0	6	177120
	P2526	26	4,0	2,5	2,5	6	179428
	P2526	26	4,0	3,0	3,0	6	177119
	P2526	26	6,5	4,0	4,0	6	179690
	P2526	26	6,5	5,0	5,0	6	179429

5

## Radius Milling, Convex Shapes

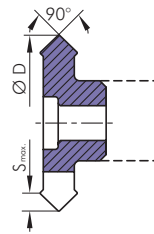
- Insert holder see page 129
- Cutting data see page 179



Type	D mm	A mm	R mm	S <sub>max</sub> mm	Number of teeth	Order No. TINAMATIC	
P12	P1210	9,6	2,2	1,1	1,20	3	171924
	P1212	11,7	2,2	1,1	2,25	3	171874
P16	P1618	17,7	2,2	1,1	4,20	6	171953
P20	P2022	21,7	2,0	1,0	5,00	6	171975
	P2022	21,7	2,4	1,2	5,00	6	171976
	P2022	21,7	2,6	1,3	5,00	6	175888
	P2022	21,7	2,8	1,4	5,00	6	171977
	P2022	21,7	3,0	1,5	5,00	6	171978
P25	P2526	26,0	5,0	2,5	6,20	6	175075

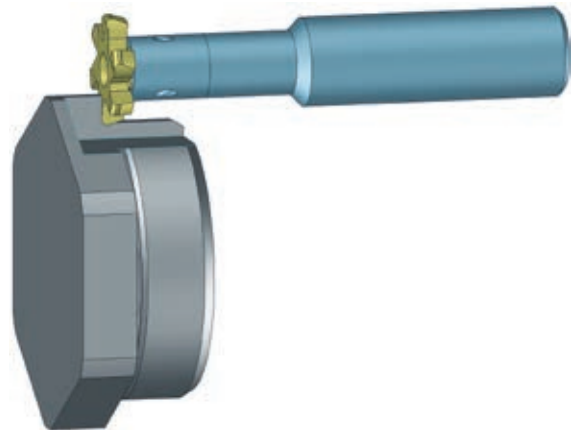
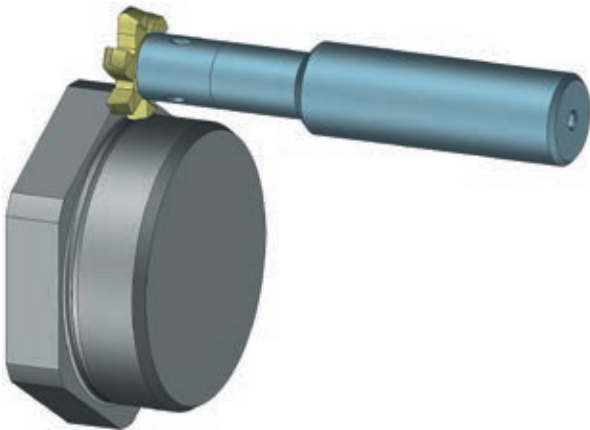
## Chamfering and Deburring

- Insert holder see page 129
- Cutting data see page 179

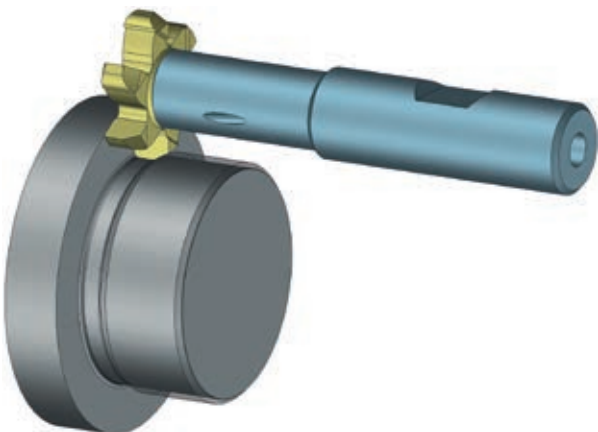


Type		D mm	S <sub>max.</sub> x 45° mm	Number of teeth	Order No. TINAMATIC
P12	P1210	9,6	1,2	3	171914
	P1212	11,7	1,5	3	171913
P16	P1616	16,0	1,9	6	142521
	P1618	17,7	1,3	6	171955
P20	P2020	20,0	1,9	6	168689
	P2022	21,7	1,6	6	171979
P25	P2526	26,0	2,1	6	142676

## Milling of Special Contours with PolyMILL Inserts



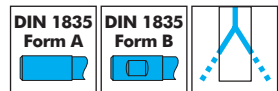
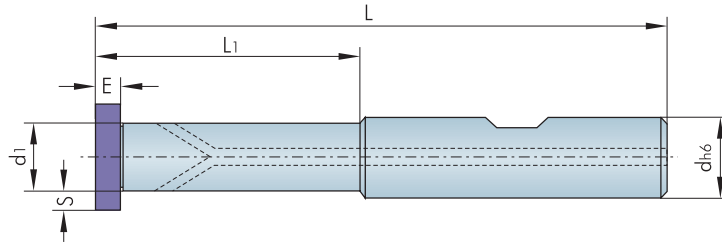
Milling an undercut according to DIN 509 Form E



Milling a thread undercut according to DIN 76

## Circular Milling Tools with Polygonal Insert Seat

- Inserts see page 127-128
- Cutting data see page 179



5

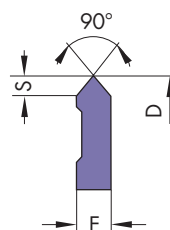
Type (D)	Order No.	Form	Bore Ø min. recommended	dh6 mm	d1 mm	Smax. mm	E mm	L* mm	L1* mm	Shaft	Spare part No.	
											Screw-driver	Screw
P12	123619	B	12	12	7,0	2,25	2,0	69,5	22,0	Steel	T8 IP 111656	M2,5x7 107596
	100228	B	12	12	7,0	2,25	2,0	69,5	22,0	Carbide		
	171778	A	12	12	7,0	2,25	2,0	69,5	22,0	Carbide		
	171780	B	12	12	7,0	2,25	2,0	82,0	32,0	Carbide		
	171781	A	12	12	7,0	2,25	2,0	82,0	32,0	Carbide		
	171783	B	12	12	7,0	2,25	2,0	102,0	42,0	Carbide		
P16	123573	B	18	12	9,0	4,00	3,5	71,5	25,0	Steel	T8 IP 111656	M3x12 143158
	123577	B	18	12	9,0	4,00	3,5	71,5	25,0	Carbide		
	171787	A	18	12	9,0	4,00	3,5	71,5	25,0	Carbide		
	123580	B	18	12	9,0	4,00	3,5	86,5	40,0	Carbide		
	171789	A	18	12	9,0	4,00	3,5	86,5	40,0	Carbide		
	123584	A	18	12	9,0	4,00	3,5	104,0	34,0	Carbide		
	123588	A	18	12	12,0	2,70	3,5	86,5	-	Carbide		
	123590	A	18	12	12,0	2,70	3,5	126,6	-	Carbide		
P20	123615	B	22	16	11,5	5,00	5,0	85,6	35,6	Steel	T15 IP 111671	M4x13 107597
	123616	B	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	171794	A	22	16	11,5	5,00	5,0	85,6	35,6	Carbide		
	123617	B	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	171796	A	22	16	11,5	5,00	5,0	105,6	55,6	Carbide		
	174314	A	22	16	16,0	2,70	5,0	111,0	-	Carbide		
P25	123592	B	28	16	13,6	6,80	4,0	84,2	35,0	Steel	T20 IP 111594	M5x13,5 107529
	123598	B	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	171855	A	28	16	13,6	6,80	4,0	84,2	35,0	Carbide		
	123600	B	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	171857	A	28	16	13,6	6,80	4,0	99,2	50,0	Carbide		
	123603	B	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	171859	A	28	16	13,6	6,80	4,0	114,2	65,0	Carbide		
	123609	A	28	16	16,0	5,70	4,0	109,6	-	Carbide		
	123611	A	28	16	15,5	6,80	4,0	154,3	-	Carbide		
	123613	A	28	20	15,5	5,70	4,0	180,0	25,0	Carbide		

\* If inserts width <> dimension E are used, dimensions L and L<sub>1</sub> change accordingly.

Screw torques max.		
107596	T08 IP	1,0 Nm
143158	T08 IP	1,1 Nm
107597	T15 IP	3,8 Nm
107529	T20 IP	5,5 Nm

## Chamfering and Deburring

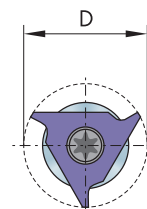
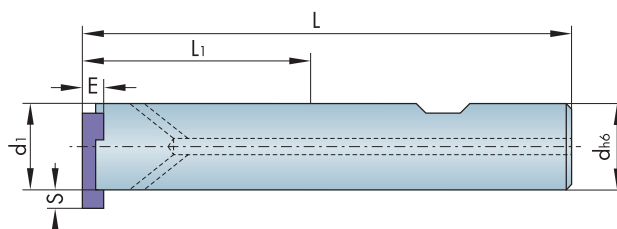
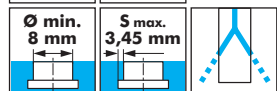
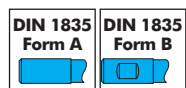
- Insert holder see page 130-131
- Cutting data see page 179



Type	S <sub>max.</sub> x 45° mm	D mm	E mm	Order No.	
				K10	TINAMATIC
04	0,3	7,9	2,34		141690
03	1,5	10,6	3,00	141688	141694
02	2,2	17,5	5,00	141529	141495
01	3,1	23,0	6,50	141354	141382
023	2,3	17,5	5,00		142033

## Circular Milling Tools

- Inserts see above
- Cutting data see page 179
- Carbide grades see page 118



Type	Order No.	Form	Bore Ø min.	D mm	dh6 mm	d1 mm	S <sub>max.</sub> mm	E mm	*L mm	*L1 mm	Shaft	Spare part No.	
												Screw-driver	Screw
04	123491*	B	8	7,9	10	7,1	0,35	2,00	59,20	19,20	Steel	T6 IP 111705	107530
	123477*	B	11	10,6	10	7,4	1,60	2,34	59,54	19,54	Steel		
	123478*	B	11	10,6	12	7,4	1,60	2,34	67,00	19,54	Steel		
03	123479*	A	11	10,6	12	7,4	1,60	2,34	67,00	19,54	Steel		
	123480	B	11	10,6	10	7,4	1,60	2,34	76,54	36,54	Carbide		
	123489	A	11	10,6	8	8,0	1,25	2,34	80,00	-	Carbide		
02	123445	B	20	17,5	12	12,0	2,60	3,50	77,55	32,20	Steel	T15 IP 111671	107547
	123446	B	20	17,5	16	12,0	2,60	3,50	82,10	32,20	Steel		
	123447	A	20	17,5	16	12,0	2,60	3,50	82,10	32,20	Steel		
	123448	B	20	17,5	12	12,0	2,60	3,50	112,20	67,20	Carbide		
	123470	A	20	17,5	12	12,0	2,60	3,50	82,80	-	Carbide		
	123471	A	20	17,5	12	12,0	2,60	3,50	100,00	-	Carbide		
01	123474	A	20	17,5	12	12,0	2,60	3,50	125,00	-	Carbide		
	123412	B	25	23,0	16	16,0	3,45	4,00	91,00	42,5	Steel	T20 IP 111594	107551
	123414	B	25	23,0	16	16,0	3,45	4,00	120	71,5	Steel		
	123415**	A	25	23,0	20	17,0	3,00	4,00	97,00	45	Steel		
	170320	A	25	23,0	16	17,0	3,00	4,00	141	92,5	Carbide		
123416	B	25	23,0	16	17,0	3,00	4,00	141	92,5	Carbide			
123440	A	25	23,0	16	16,0	3,45	4,00	115	-	Carbide			
123441	A	25	23,0	16	16,0	3,00	4,00	152,5	-	Carbide			

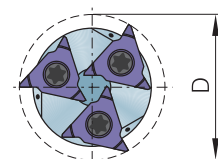
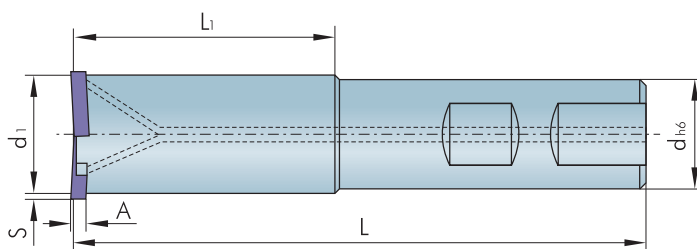
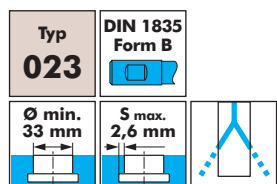
\* Without internal coolant supply    \*\* Also suitable as basic body for a tandem cutter.

Screw torques max.

107530	T06 IP	0,9 Nm
107547	T15 IP	3,8 Nm
107551	T20 IP	5,5 Nm

## Circular Milling Tools

- Inserts see page 130
- Cutting data see page 179
- Carbide grades see page 118



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	A mm	L mm	L1 mm	Inserts	Shaft
123462	33	32	25	26,8	2,6	5	125	67	3	Steel

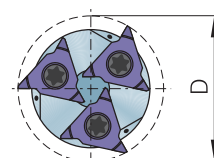
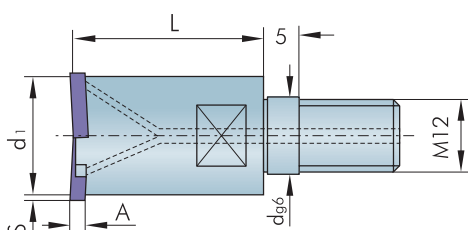
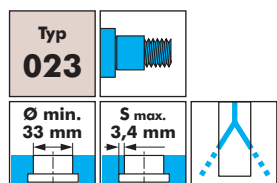
Spare part No.

**T15 IP**  
Screw-driver

Screw

111671 107547

Screw torque max. 3,8 Nm



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	A mm	L mm	Inserts	Shaft
123465	33	32	12,5	24,3	3,8	5	40	3	Steel

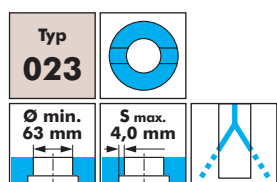
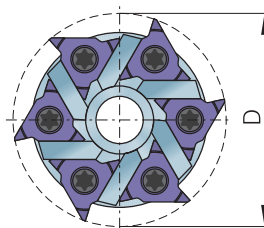
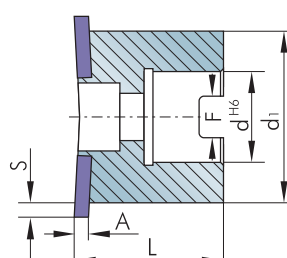
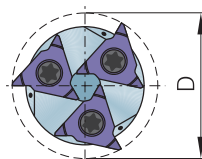
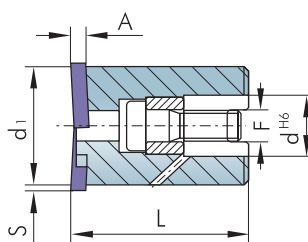
Spare part No.

**T15 IP**  
Screw-driver

Screw

111671 107547

Screw torque max. 3,8 Nm



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	Smax. mm	A mm	F mm	L mm	Inserts
123464	40	38	16	31	3,4	5,0	8,4	46	3
123461*	55	50	22	42	3,9	5,0	10,4	40	6

Accessories



Key

134984

Spare part No.

**T15 IP**  
Screw-driver

Screw

111671 107547

111671 107547

Screw torque max. 3,8 Nm

\* Cutter clamping screw internal hexagon

Order No. 114684

Sawing, Cutting, Slitting



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

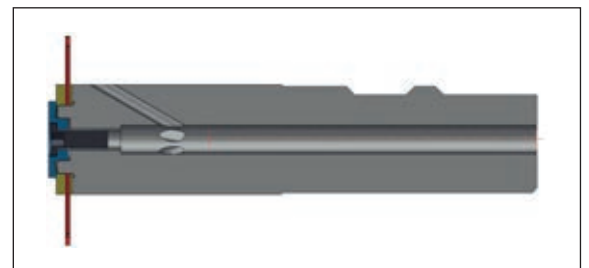
# PolySAW

## Cutting, Sawing, Slitting

The expectations of the performance and to the application range of cutting tools continuously evolve. In response to the demand for small yet powerful and specifically process safe operating sawblades, mimatic has developed the tooling system PolySAW.

- Larger range of applications
- Defined tooth and cutting edge geometry
- mimatic core competence: Polygon interface → Quadragon interface
- High performance coatings
- Internal coolant direct to the edges
- Clamping with only one center screw
- Special chip space geometry

These technical parameters resulted in the mimatic development result PolySAW with a up to tenfold cutting performance in comparison to conventional solid carbide circular saws.



Sectional drawing of PolySAW-ECO



# PolySAW

## Sawing Tools in New Dimensions of Performance



### PolySAW -G

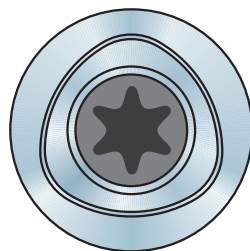
- With PolySAW-G profiles can be machined up to the shoulder
- On request: Increased sawing depths (S) achievable with reductions in speed/feed
- + **Re-sharpen-Service 2x**
- + Minimum distance for operations to shoulders: 0,001 mm

### PolySAW -ECO

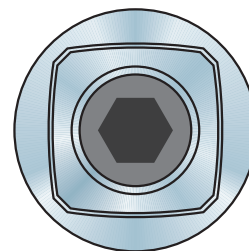
- PolySAW-ECO is the economical alternate to PolySAW-G
- + deeper sawing depths (S)
- + more cost-effective
- + Re-sharpen-Service 1x
- Minimum distance to shoulders:  
2,45 mm (A = 1,5 mm) to  
3,05 mm (A = 1,0 mm)

6

## The mimatic Polygon Interface – A Success Story with Continuous Evolution: Quadrogon



mimatic  
Polygon Interface



mimatic  
Quadrogon\* Interface

Since their development and launch in 1994, the mimatic polygon interface is the guarantee for high cutting performance with maximum precision and repeatability in the circular milling.

In the tool systems PolyMILL and Poly-REAM, the polygon interface enables the reliable circular thread milling and reaming as well as T-slot milling and

grooving. In many practical applications, the interface has established itself as a key factor for successful milling operations under difficult conditions.

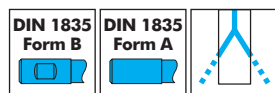
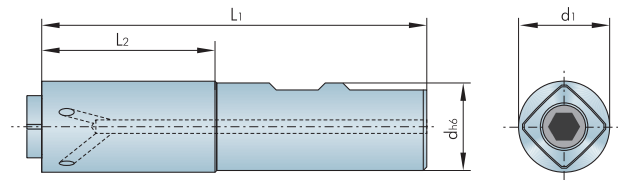
With the development of the new tool systems DeepMILL and PolySAW, the development of the polygon interface has evolved as well. Under the brand name mimatic Quadrogon, the inter-

face has been optimized specifically for the needs of this new mimatic high-performance tool.

\* patent-protected.

## Basic Holders

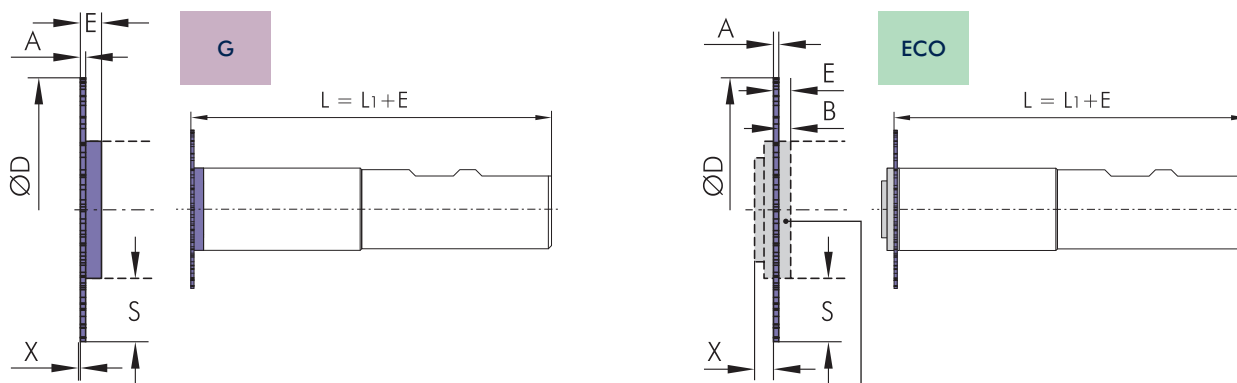
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	11	20	1835 B	91	40	18,8	163701	178296	SW 3
	11	20	1835 A	91	40	18,8	160050	178296	SW 3
	9	20	1835 B	86	35	16,8	163700	178297	SW 4
	9	20	1835 A	86	35	16,8	160049	178297	SW 4
ECO	13	20	1835 B	86	35	17	163709	178297	SW 4
	13	20	1835 A	86	35	17	160058	178297	SW 4
	11	16	1835 B	80	30	15	163708	178296	SW 3
	11	16	1835 A	80	30	15	160057	178296	SW 3

Screw torques max.  
 Type 09 = max. 3,8 Nm  
 Type 11 = max. 10,5 Nm  
 Type 13 = max. 24,5 Nm

## Milling Discs



Milling depth max.

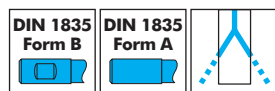
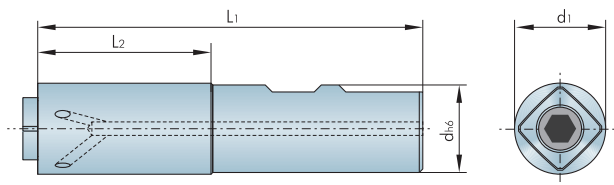
Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

Disc is included in the delivery

System	Type	A mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No.	Deliverable
										TINAMATIC	
G	11	1,0	6,6	4	0,001	32	6	-	24	164430	on request
	9	1,0	7,6	4	0,001	32	6	-	24	164400	on stock
	11	1,5	6,6	4	0,001	32	6	-	24	164431	on request
	9	1,5	7,6	4	0,001	32	6	-	24	164401	on stock
ECO	13	1,0	7,5	4	3,95	32	1,65	0,65	24	164530	on request
	11	1,0	8,5	4	3,95	32	1,65	0,65	24	164500	on stock
	13	1,5	7,5	4	1,80	32	3,65	2,15	20	164531	on request
	11	1,5	8,5	4	1,80	32	3,65	2,15	20	164501	on stock
Especially for aluminium processing:											
G	9	1,0	7,6	4	0,001	32	6	-	16	179693	on stock
	9	1,5	7,6	4	0,001	32	6	-	16	179698	on stock

## Basic Holders

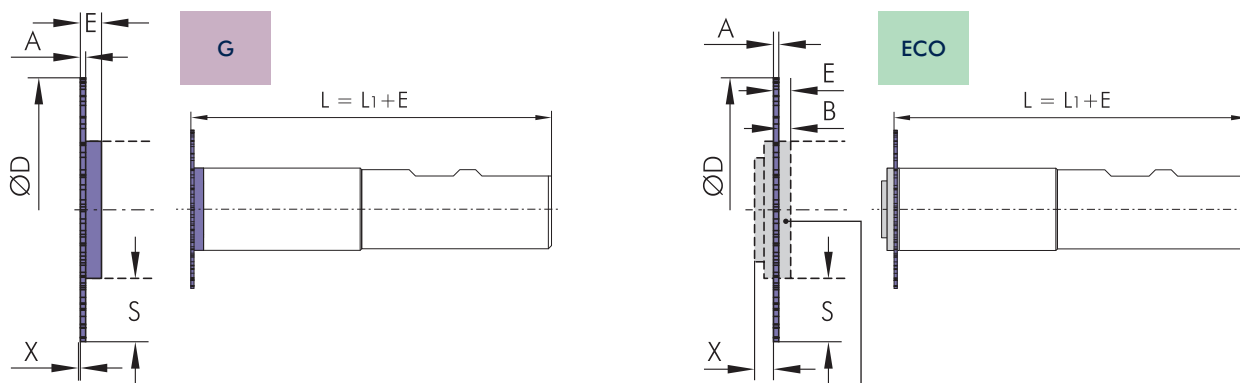
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4
	11	20	1835 B	91	40	18,8	163701	178296	SW 3
	11	20	1835 A	91	40	18,8	160050	178296	SW 3
ECO	16	20	1835 B	91	40	20	163710	178296	SW 3
	16	20	1835 A	91	40	20	160059	178296	SW 3
	13	20	1835 B	86	35	17	163709	178297	SW 4
	13	20	1835 A	86	35	17	160058	178297	SW 4

Screw torques max.  
Type 11 = max. 10,5 Nm  
Type 13 = max. 24,5 Nm  
Type 16 = max. 6 Nm

## Milling Discs



Milling depth max.

Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

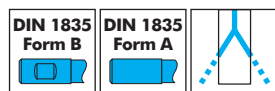
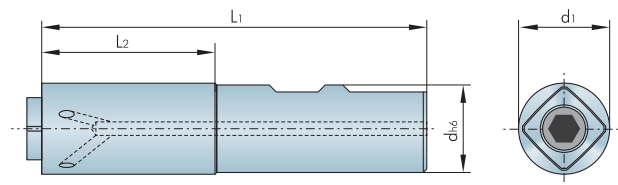
Disc is included in the delivery

System	Type	A mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	13	1,0	9,2	4	0,001	40	6	-	32	164432	on request
	11	1,0	10,6	4	0,001	40	6	-	32	164406	on stock
	13	1,5	9,2	4	0,001	40	6	-	32	164433	on request
	11	1,5	10,5	4	0,001	40	6	-	32	164407	on stock
ECO	16	1,0	10,0	4	3,95	40	1,65	0,65	32	164532	on request
	13	1,0	11,5	4	3,95	40	1,65	0,65	32	164506	on stock
	16	1,5	10,0	4	1,80	40	3,65	2,15	32	164533	on request
	13	1,5	11,5	4	1,80	40	3,65	2,15	32	164507	on stock
Especially for aluminium processing:											
G	11	1,0	10,6	5	0,001	40	6	-	20	179694	on stock
	11	1,5	10,6	5	0,001	40	6	-	20	179699	on stock

\*\* more spare parts see page 117

## Basic Holders

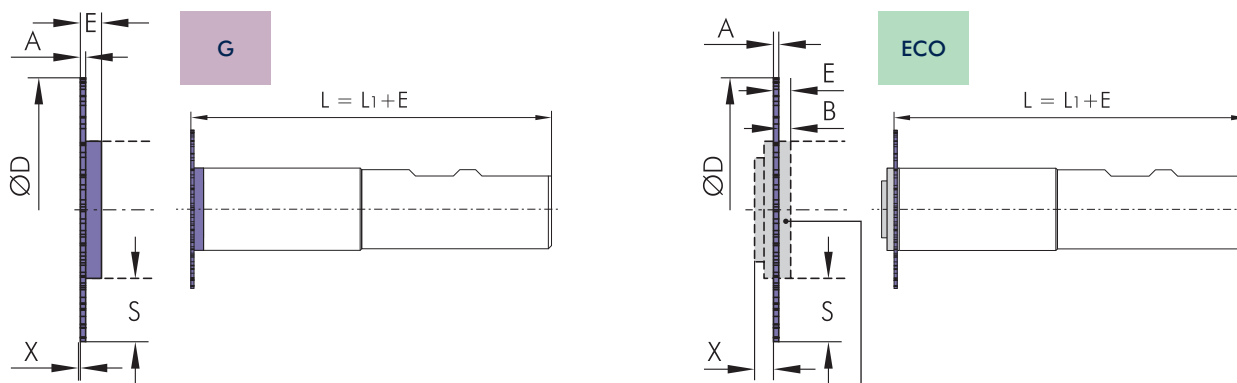
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3
	13	25	1835 B	105	45	21,6	163702	178297	SW 4
	13	25	1835 A	105	45	21,6	160051	178297	SW 4
ECO	19	25	1835 B	105	45	23	163711	178296	SW 3
	19	25	1835 A	105	45	23	160060	178296	SW 3
	16	20	1835 B	91	40	20	163710	178296	SW 3
	16	20	1835 A	91	40	20	160059	178296	SW 3

Screw torques max.  
Type 13 = max. 24,5 Nm  
Type 16 = max. 6 Nm  
Type 19 = max. 10,5 Nm

## Milling Discs



Milling depth max.

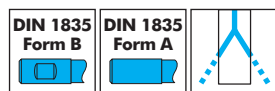
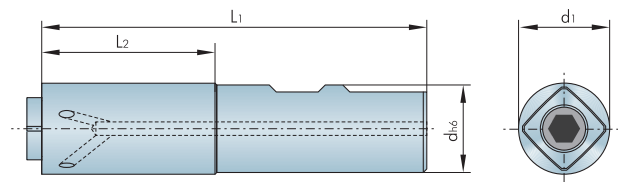
Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

Disc is included in the delivery

System	Type	A mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No.	Deliverable
										TINAMATIC	
G	16	1,0	12,0	5	0,001	50	6	-	32	164434	on request
	13	1,0	14,2	5	0,001	50	6	-	32	164412	on stock
	16	1,5	12,0	5	0,001	50	6	-	32	164435	on request
	13	1,5	14,2	5	0,001	50	6	-	32	164413	on stock
ECO	19	1,0	13,5	4	3,95	50	1,65	0,65	40	164534	on request
	16	1,0	15,0	4	3,95	50	1,65	0,65	40	164512	on stock
	19	1,5	13,5	4	1,80	50	3,65	2,15	32	164535	on request
	16	1,5	15,0	4	1,80	50	3,65	2,15	32	164513	on stock
Especially for aluminium processing:											
G	13	1,0	14,2	5	0,001	50	6	-	20	179695	on stock
	13	1,5	14,2	5	0,001	50	6	-	20	179700	on stock

## Basic Holders

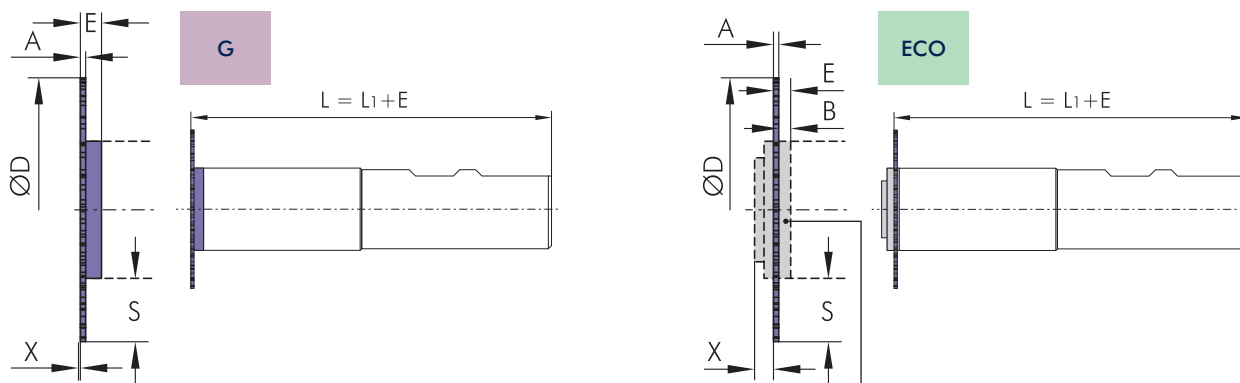
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3
	16	25	1835 B	110	50	26	163703	178296	SW 3
	16	25	1835 A	110	50	26	160052	178296	SW 3
ECO	25	25	1835 B	122	55	29	163712	178297	SW 4
	25	25	1835 A	122	55	29	160061	178297	SW 4
	19	20	1835 B	105	45	23	163711	178296	SW 3
	19	20	1835 A	105	45	23	160060	178296	SW 3

Screw torques max.  
 Type 16 = max. 6 Nm  
 Type 19 = max. 10,5 Nm  
 Type 25 = max. 24,5 Nm

## Milling Discs



Milling depth max.

Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

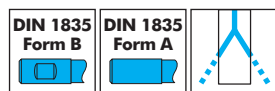
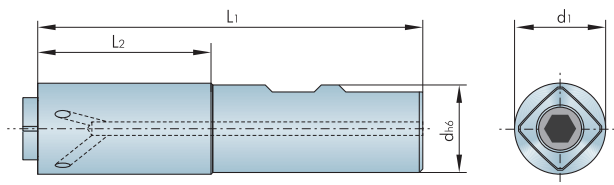
Disc is included in the delivery

System	Type	A mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	19	1,0	16,5	5	0,001	63	6	-	40	164436	on request
	16	1,0	18,5	5	0,001	63	6	-	40	164418	on stock
	19	1,5	16,5	5	0,001	63	6	-	40	164437	on request
	16	1,5	18,5	5	0,001	63	6	-	40	164419	on stock
ECO	25	1,0	17,0	4	3,95	63	1,65	0,65	48	164536	on request
	19	1,0	20,0	4	3,95	63	1,65	0,65	48	164518	on stock
	25	1,5	17,0	4	1,80	63	3,65	2,15	40	164537	on request
	19	1,5	20,0	4	1,80	63	3,65	2,15	40	164519	on stock
Especially for aluminium processing:											
G	16	1,0	18,5	6	0,001	63	6	-	24	179696	on stock
	16	1,5	18,5	6	0,001	63	6	-	24	179701	on stock

\*\* more spare parts see page 117

## Basic Holders

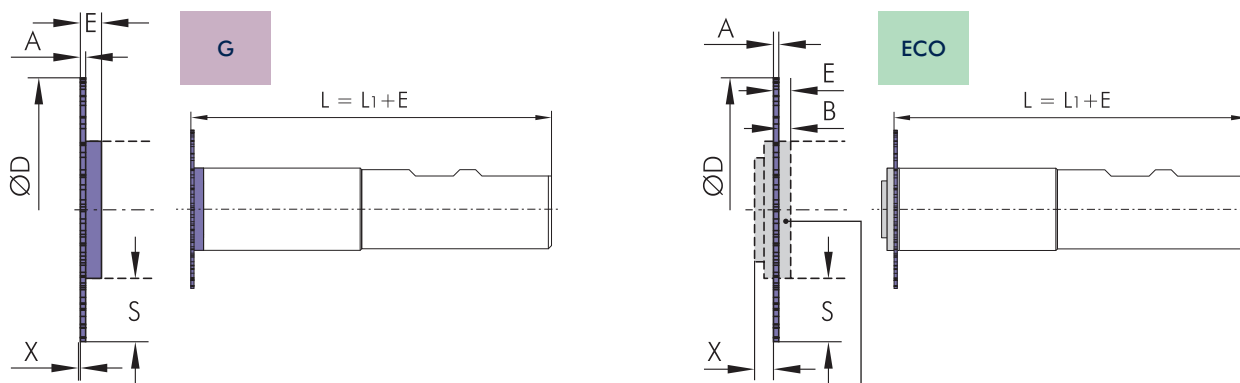
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dh6 mm	DIN	L1 mm	L2 mm	d1 mm	Complete holder	Spare Parts **	
							Bestell-Nr.	Screwdriver	Size
G	19	32	1835 B	122	55	30	163704	178296	SW 3
	19	32	1835 A	122	55	30	160053	178296	SW 3
	25	32	1835 B	127	60	38,2	163705	178297	SW 4
	25	32	1835 A	127	60	38,2	160054	178297	SW 4
ECO	25	32	1835 B	122	55	29	163712	178297	SW 4
	25	32	1835 A	122	55	29	160061	178297	SW 4
	35	32	1835 B	127	60	39	163713	178297	SW 4
	35	32	1835 A	127	60	39	160062	178297	SW 4

Screw torques max.  
 Type 19 = max. 10,5 Nm  
 Type 25 = max. 24,5 Nm  
 Type 35 = max. 24,5 Nm

## Milling Discs



Milling depth max.

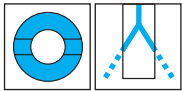
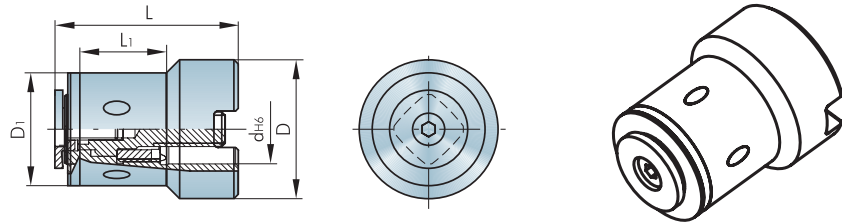
Recommended cutting depth of the 1st cut for a material with approx. 800 N/mm<sup>2</sup>

Disc is included in the delivery

System	Type	A mm	S max. mm	S1 mm	X mm	D mm	E mm	B mm	Number of teeth	Order No. TINAMATIC	Deliverable
G	25	1,0	20,9	6	0,001	80	6	-	40	164438	on request
	19	1,0	25,0	6	0,001	80	6	-	40	164424	on stock
	25	1,5	20,9	5	0,001	80	6	-	40	164439	on request
	19	1,5	25,0	6	0,001	80	6	-	40	164425	on stock
ECO	35	1,0	20,5	4	3,95	80	1,65	0,65	64	164538	on request
	25	1,0	25,5	4	3,95	80	1,65	0,65	64	164524	on stock
	35	1,5	20,5	5	1,80	80	3,65	2,15	48	164539	on request
	25	1,5	25,5	5	1,80	80	3,65	2,15	48	164525	on stock
Especially for aluminium processing:											
G	19	1,0	18,5	8	0,001	80	6	-	24	179697	on stock
	19	1,5	18,5	8	0,001	80	6	-	24	179702	on stock

## Basic Holders with Location Bore

- Cutting data see page 180
- Carbide coating see page 118

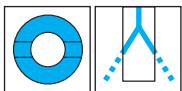
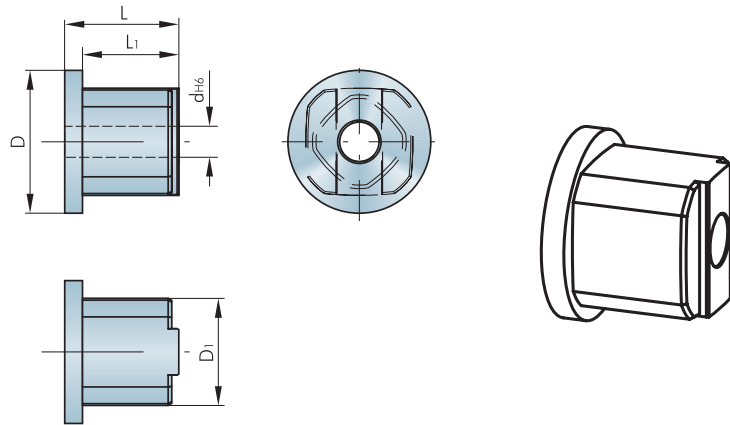


System	Typ	dH6 mm	L mm	L1 mm	D mm	D1 mm	Complete holder		Spare Parts **	
							Bestell-Nr.	Screwdriver	Size	
G	ECO	16	43	20	32	26	179727	178296	SW 3	
		19	43	20	32	30	179728	178296	SW 3	
		25	50	20	40	38,2	179817	178297	SW 4	
		35	65	-	48	49	179818	178297	SW 4	

Screw torques max.  
 Type 16 = max. 6 Nm  
 Type 19 = max. 10,5 Nm  
 Type 25 = max. 24,5 Nm  
 Type 35 = max. 24,5 Nm

## Saw Blade Arbors for mimatic Saw Blade Holders

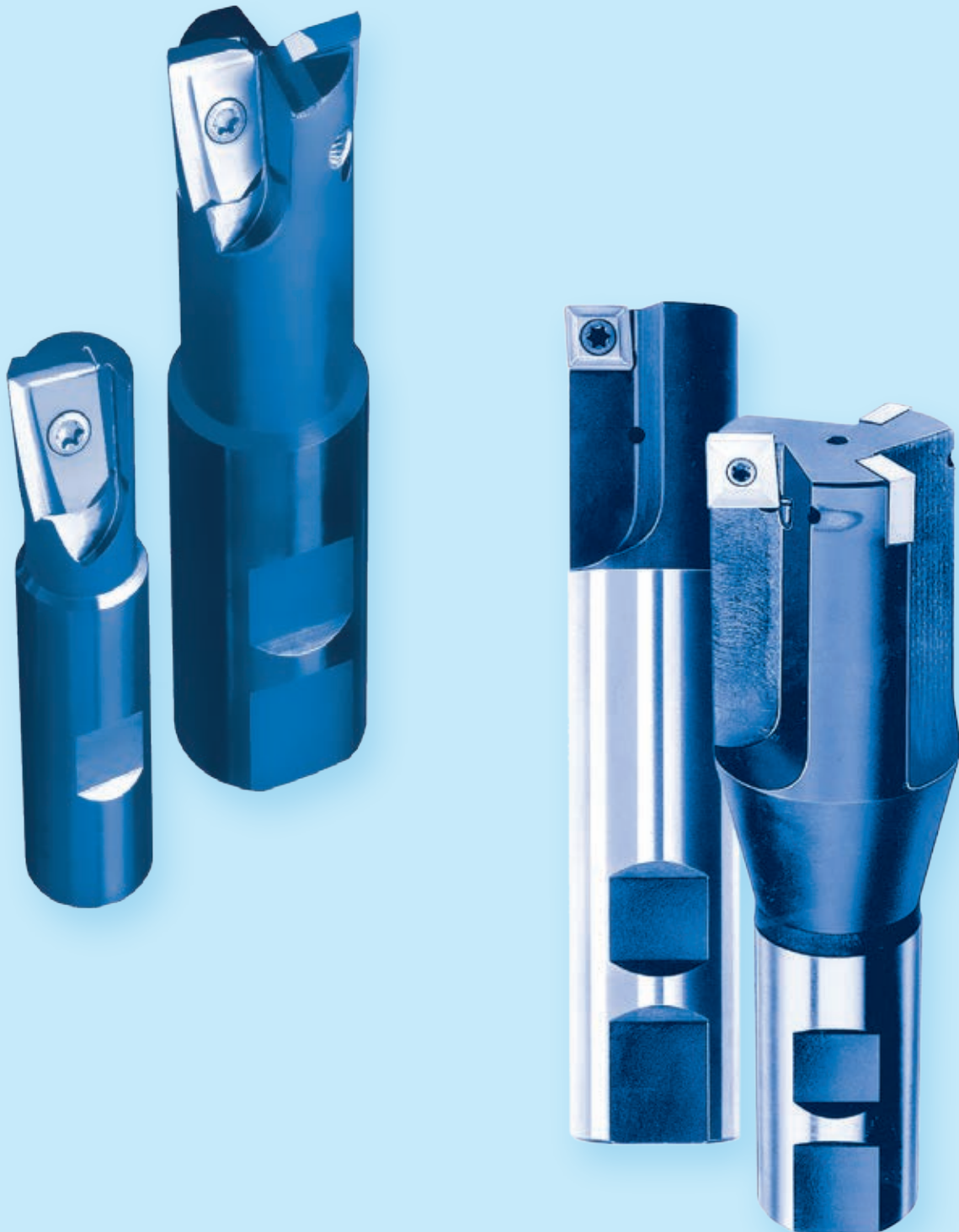
- Cutting data see page 180
- Carbide coating see page 118



System	Typ	dH6 mm	L mm	L1 mm	D mm	D1 mm	Complete holder		Spare Parts **	
							Bestell-Nr.	Screwdriver	Size	
ECO	25	10	32	27	30	25	179252	178297	SW 4	
	35	12	32	27	30	35	180316	178297	SW 4	

Screw torques max.  
 Type 25 = max. 24,5 Nm  
 Type 35 = max. 24,5 Nm

**Drill Milling, Counterboring**





## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

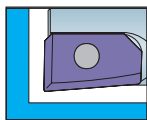
<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Table of Contents

### TrioCUT



#### Inserts + Toolholders

Type 12	Bore-dia. min. 14 mm	145
Type 17	Bore-dia. min. 19 mm	146
Type 20	Bore-dia. min. 22 mm	147
Type 25	Bore-dia. min. 26 mm	148



#### CT Tools

Fixed dimension countersink	149-150
Fixed dimension countersink with S.C. shank	151
Counterbore MONO	152
Counterbore MULTI	153
Eccentric clamping sleeve	154
Inserts	155

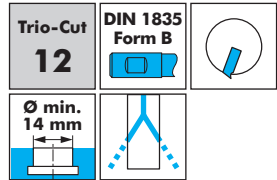
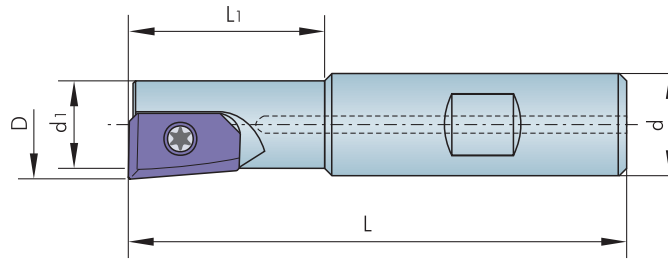
#### Technical Data

Spanleitstufen und Schneidkanten	156
Hartmetallsorten im Einsatz	156
Hartmetallsorten	157
Wendeplatten-Auswahlhilfe für CT-Aufbohrer	157
Schnittdaten-Richtwerte für CT-Aufbohrer	181
Schnittdaten-Richtwerte für CT-Flachsenker	181

# TrioCUT

## Circular Milling Tools

- Cutting data see page 181
- Carbide grades see page 118
- Inserts see below



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Operation	Shaft	Spare part No.	
									T8 IP Screw-driver	Screw
123620	14	12	16	9,4	74	18	only thread milling	Steel	111656	115567
123621	14	12	16	11,0	74	18	only drill milling	Steel	111656	115567

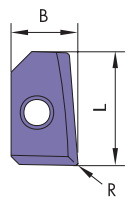
Screw torque max. 1,1 Nm

7

## Circular Milling Inserts



Type	L mm	R mm	B mm	Milling depth mm	Order No.
					TINAMATIC
12	12	0,5	7,5	8 (Bore Ø 12-14) 18 (Bore Ø 14-20)	142702

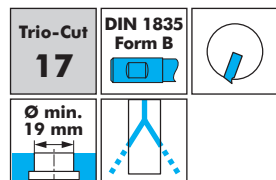
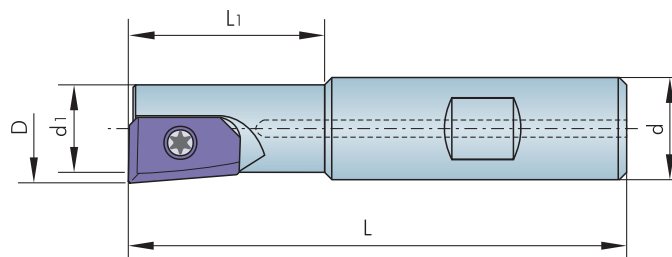


Only for Milling Cutters 123621

# TrioCUT

## Circular Milling Tools

- Cutting data see page 181
- Carbide grades see page 118
- Inserts see below



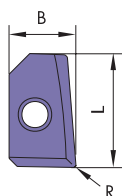
Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T15 IP Screw-driver	Screw
123631	19	17	16	13,7	79	30	Steel	111671	115628
123633	19	17	20	13,7	92	30	Steel	111671	115628

Screw torque max. 3,8 Nm

## Circular Milling Inserts



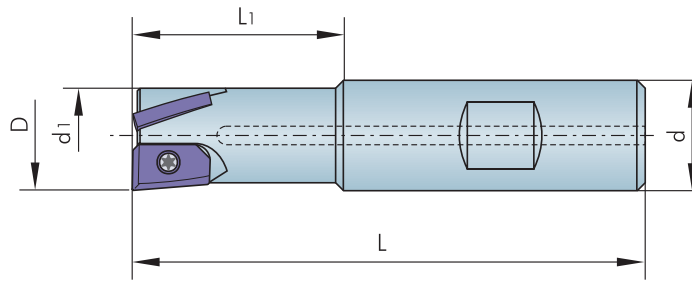
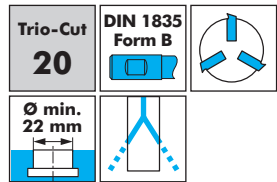
Type	L mm	R mm	B mm	Milling depth mm	Order No.
					TINAMATIC
17	17,5	0,4	11	12 (Bore Ø 17-19)	142733
17	17,5	0,8	11	30 (Bore Ø 20-32)	142768
17	17,5	1,2	11	30 (Bore Ø 20-32)	142710



# TrioCUT

## Circular Milling Tools

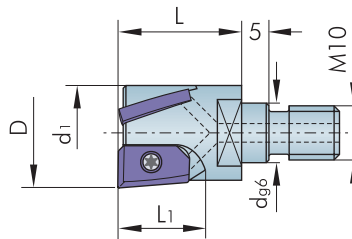
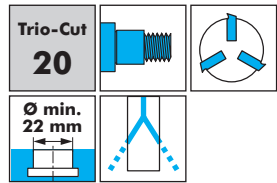
- Cutting data see page 181
- Carbide grades see page 118
- Inserts see below



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T8 IP Screw-driver	Screw
123622	22	20	20	17,5	83	32	Steel	111656	115567

Screw torque max. 1,1 Nm

**!** Please adapt cutting data to overhangs length

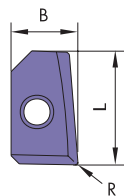


Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T8 IP Screw-driver	Screw
123623	22	20	10,5	17,5	21	16	Steel	111656	115567

Screw torque max. 1,1 Nm

## Circular Milling Inserts

Trio-Cut  
**20**

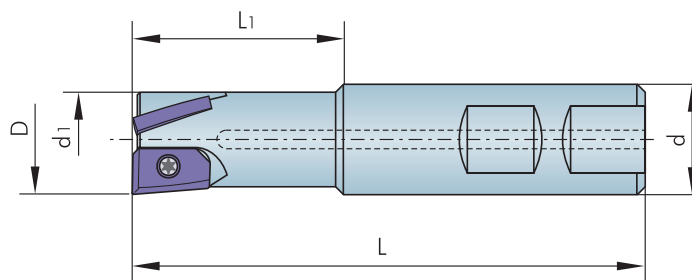
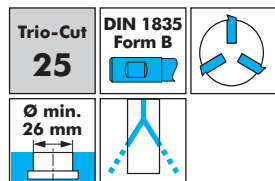


Type	L mm	R mm	B mm	Milling depth mm	Order No. TINAMATIC
20	12	0,8	7,5	32 (Bore Ø 26-40)	142683

# TrioCUT

## Circular Milling Tools

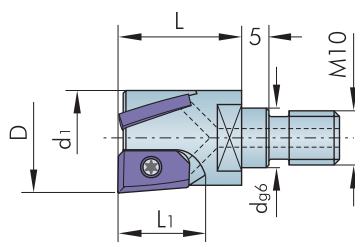
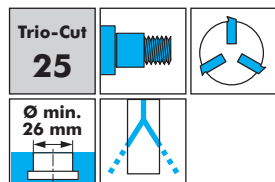
- Cutting data see page 181
- Carbide grades see page 118
- Inserts see below



Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T15 IP Screw-driver	Screw
123638	26	25	25	21,7	107,6	50	Steel	111671	115628
123639	26	25	25	21,7	142,6	85	Heavy metal	111671	115628

Screw torque max. 3,8 Nm

**!** Please adapt cutting data to overhangs length



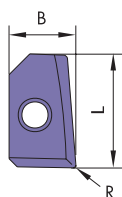
Order No.	Bore Ø min.	D mm	dh6 mm	d1 mm	L mm	L1 mm	Shaft	Spare part No.	
								T15 IP Screw-driver	Screw
166204	26	25	10,5	21,7	30	19	Steel	111671	115628

Screw torque max. 3,8 Nm

## Circular Milling Inserts



Trio-Cut  
**25**

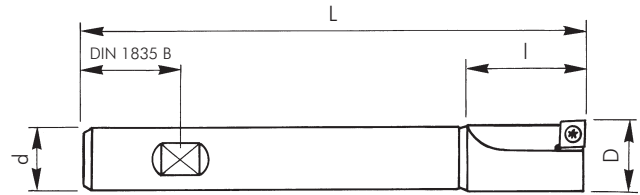


Type	L mm	R mm	B mm	Milling depth mm	Order No. TINAMATIC
25	17,5	0,8	11	50/85 (Bore Ø 30-50)	142769
25	17,5	1,2	11	50/85 (Bore Ø 30-50)	142742

Only for Milling Cutters 123620

## CT Fixed Dimension Countersink

- Cutting data see page 181
- Inserts see page 155



Order No.	D mm	D1 min. mm	L mm	l mm	d h6 mm	l2 max. mm	Number of edges	Insert
115645	9,8	9,3	85	20	8	40	1	
115663	10,8	10,3	95	20	10	50	1	
115664	11,8	11,3	100	25	10	50	1	
115562	12,8	12,3	105	30	10	50	1	
115589	13,8	13,3	110	35	10	50	1	
115553	14,8	14,3	120	30	12	60	1	
115622	15,8	15,3	125	35	12	60	1	
115527	16,8	16,3	133	30	16	80	1	
115570	17,8	15,8	138	35	16	80	1	
115536	18,8	16,8	143	40	16	80	1	
115639	19,8	17,8	148	45	16	80	1	
115646	20,8	18,8	153	50	16	80	1	
115671	21,8	19,8	158	55	16	80	1	
115665	22,8	20	165	41	20	100	1	
115607	23,8	21	170	46	20	100	1	
115666	24,8	22	175	51	20	100	1	
115563	25,8	23	180	56	20	100	1	
115623	26,8	24	185	41	20	100	1	
115680	27,8	25	190	46	20	100	1	
115672	28,8	26	195	51	20	100	1	
115640	29,8	27	195	51	20	100	1	
115624	30,8	28	195	51	20	100	1	
115608	31,8	29	195	51	20	100	1	

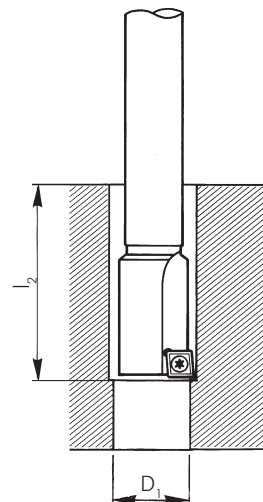
MPHT 060202.N12  
MPHT 060202.N13  
MPHT 060202.N14  
MPHW 060202.N15  
MPHX 060202.L16

Spare part No.	
Screw-driver	Screw
T8 111544	115619

Screw torque max. 1,1 Nm

CT fixed dimension countersinks are suitable for counterboring of pre-drilled or casted holes to  $-0,15 / -0,30$  mm to the nominal diameter.

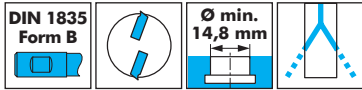
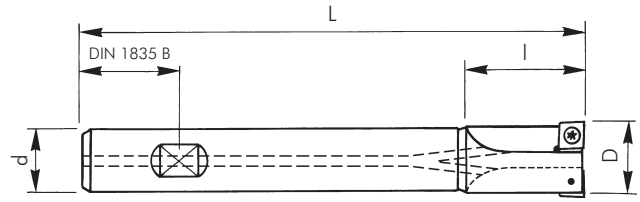
The tolerance of  $D = \pm 0.05$  mm is achieved by grinded precision carbide indexable cutting inserts.



7

# CT Fixed Dimension Countersink

- Cutting data see page 181
- Inserts see page 155



Order No.	D mm	D1 min. mm	L mm	l mm	d h6 mm	l2 max. mm	Number of edges	Insert
115554	15,8	14,8	125	35	12	60	2	MPHT 060202.N12 MPHT 060202.N13 MPHT 060202.N14 MPHW 060202.N15 MPHX 060202.L16
115599	16,8	14,8	133	40	16	80	2	
115689	17,8	15,8	138	40	16	80	2	
115543	18,8	16,8	143	40	16	80	2	
115707	19,8	17,8	148	40	16	80	2	
115648	20,8	18,8	153	45	16	80	2	
115544	21,8	19,8	158	45	16	80	2	
115654	22,8	20	165	45	16	80	2	
115690	23,8	21	170	50	20	100	2	
115571	24,8	22	175	50	20	100	2	
115708	25,8	23	180	50	20	100	2	
115716	26,8	24	185	50	20	100	2	
115545	27,8	25	190	50	20	100	2	
115625	28,8	26	195	50	20	100	2	
115667	29,8	27	195	50	20	100	2	
115655	30,8	28	195	55	25	125	2	
115631	31,8	29	195	55	25	125	2	

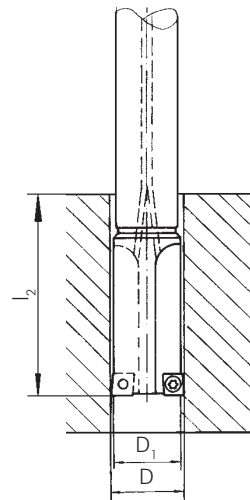
Spare part No.	
Screw-driver	Screw
T8 111544	115619

Screw torque max. 1,1 Nm

CT fixed dimension countersinks are suitable for counterboring of pre-drilled or casted holes to  $-0,15 / -0,20$  mm mm to the nominal diameter.

The integrated cooling duct results in improved life time characteristics of the carbide indexable inserts.

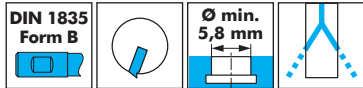
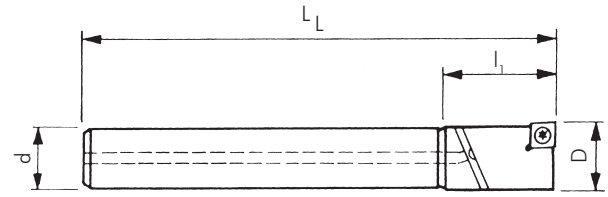
The tolerance of  $D = \pm 0.05$  mm is achieved by grinded precision carbide indexable cutting inserts.





# CT Fixed Dimension Countersink with Solid Carbide Shank

- Cutting data see page 181
- Inserts see page 155

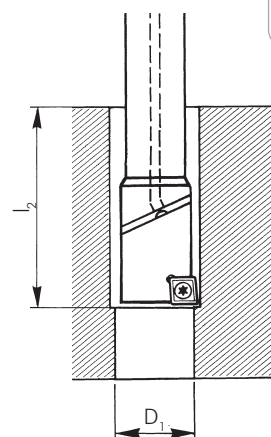


Order No.	D mm	D1 min. mm	L mm	l mm	d h6 mm	l2 max. mm	Number of edges	Insert	Spare part No.	
									Screw- driver	Screw
115699	6,8	5,8	110	20	6		1	CPGX 04T102	T6 111697	115596
115649	7,8	6,8	110	14	6	1				
115691	8,8	7,4	110	14	6	1				
115717	9,8	9,3	85	20	8		1	MPHT 060202.N12 MPHT 060202.N13 MPHT 060202.N14 MPHW 060202.N15 MPHX 060202.L16	T8 111544	115619
115725	10,8	10,3	95	20	8	1				
115656	11,8	11,3	100	20	10	1				
115718	12,8	12,3	105	20	10	1				
115518	13,8	13,3	110	20	10	1				
115641	14,8	14,3	120	20	12	1				
115632	15,8	15,3	125	20	12	1				
115709	16,8	16,3	133	30	12	1				
115681	17,8	15,8	138	40	16	1				
115590	18,8	16,8	143	40	16	1				
115710	19,8	17,8	148	40	16	1				
115650	20,8	18,8	153	40	16	1				
115633	21,8	19,8	158	40	16	1				
115668	22,8	20	165	40	20	1				
115651	23,8	21	170	40	20	1				
115734	24,8	22	175	40	20	1				
115657	25,8	23	180	40	20	1				
115682	26,8	24	185	40	20	1				
115634	27,8	25	190	40	20	1				
115711	28,8	26	195	40	20	1				
115735	29,8	27	195	40	20	1				
115642	30,8	28	195	40	20	1				
115743	31,8	29	195	40	20	1				

7

CT fixed dimension countersinks are suitable for counterboring of pre-drilled or casted holes to  $-0,15 / -0,30$  mm mm to the nominal diameter.

The tolerance of  $D = \pm 0.05$  mm is achieved by grinded precision carbide indexable cutting inserts.



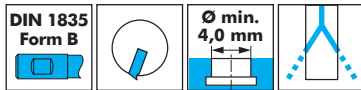
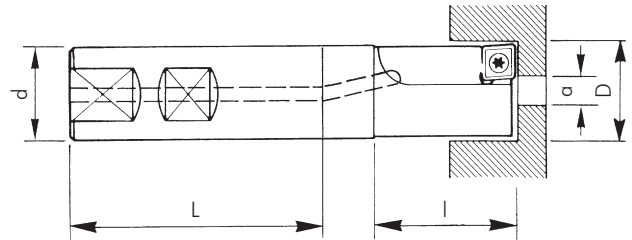
Screw torques max.

115596	T6 IP	0,9 Nm
115619	T8 IP	1,1 Nm

## CT Counterbore MONO

- Cutting data see page 181
- Inserts see page 155

CT MONO counterbores are suitable for producing cuts for cylinder head bolts, ejector pins, on cuts, sealing surfaces, etc. The integrated cooling duct of the countersink results in improved life time characteristics of the carbide indexable inserts.



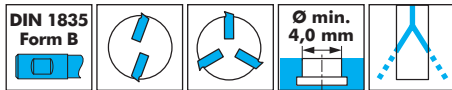
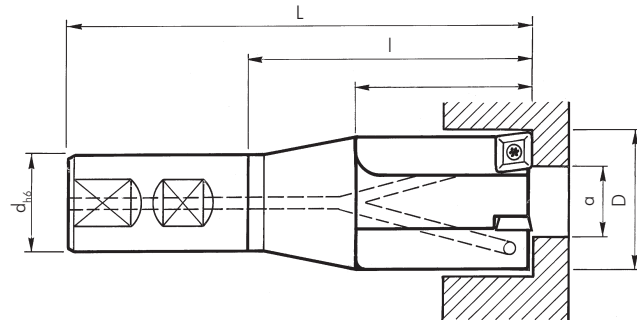
Order No.	D mm	D1 min. mm	L mm	l mm	d h6 mm	Number of edges	Insert	Spare part No.	
								Screw- driver	Screw
115746	10	4	80	23	12	1	MPHT 060202.N12 MPHT 060202.N13 MPHT 060202.N14 MPHW 060202.N15 MPHX 060202.L16 MPMT 060204.N12	T8 111544	115619
115727	11	4	80	23	12	1			
115693	12	4	80	26	12	1			
115797	13	5	80	26	12	1			
115685	14	5	80	26	12	1			
115659	15	5	80	26	12	1			
115739	16	5	90	31	16	1			
115772	17	6	90	31	16	1			
115728	18	8	90	31	16	1			
115675	19	8	90	31	16	1			
115702	20	5	100	36	20	1	MCHT 09T304.N12 MCHT 09T304.N13 MCHT 09T304.N14 MCHW 09T304.N15 MCHX 09T304.L16 MCMT 09T308.N12	T15 IP 111671	115628
115790	21	5	100	36	20	1			
115729	22	6	100	36	20	1			
115723	23	6	100	36	20	1			
115730	24	8	100	36	20	1			
115740	25	8	120	43	25	1			
115791	26	10	120	43	25	1			
115660	27	10	120	43	25	1			
115741	28	12	120	43	25	1			
115686	29	12	120	43	25	1			
115764	30	14	120	43	25	1			
115715	31	14	120	43	25	1			
115780	32	16	120	43	25	1			
115798	33	16	120	43	25	1			

Screw torques max.  
**115619** T8 IP 1,1 Nm  
**115628** T15 IP 3,8 Nm

## CT Counterbore MULTI

- Cutting data see page 181
- Inserts see page 155

CT MULTI counterbores are suitable for producing cuts for cylinder head bolts, ejector pins, on cuts, sealing surfaces, etc. The integrated cooling duct of the countersink results in improved life time characteristics of the carbide indexable inserts.



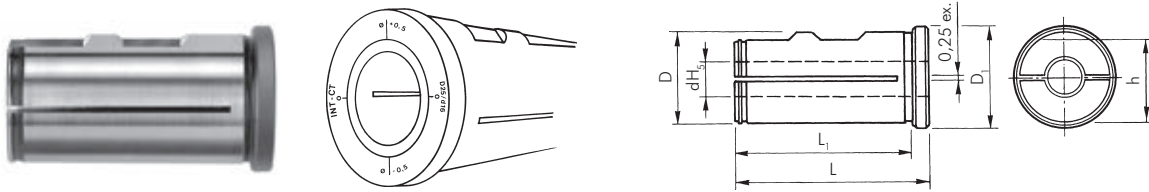
7

Order No.	D mm	D1 min. mm	L mm	l mm	d h6 mm	Number of edges	Insert	Spare part No.	
								Screw- driver	Screw
115687	15	4	100	40	20	2	MPHT 060202.N12 MPHT 060202.N13 MPHT 060202.N14 MPHW 060202.N15 MPHX 060202.L16 MPMT 060204.N12	T8 111544	115619
115731	18	6	100	40	20	2			
115781	20	8	100	40	20	2			
115742	22	10	100	40	20	2			
115688	24	6	136	68	25	2	MCHT 09T304.N12 MCHT 09T304.N13 MCHT 09T304.N14 MCHW 09T304.N15 MCHX 09T304.L16 MCMT 09T308.N12	T15 IP 111671	115628
115815	26	8	136	68	25	2			
115676	28	10	136	68	25	2			
115694	30	12	136	66	32	3			
115695	33	15	136	66	32	3			
115807	36	18	136	66	32	3			
115824	40	16	136	66	32	3	MBHT 120404.N12 MBHT 120404.N13 MBHT 120404.N14 MBHW120404.N15 MBHX 120404.L16 MBMT 120408.N12	T15 111651	115579
115808	43	19	136	66	32	3			
115747	48	24	146	81	32	3			
115696	53	29	146	81	32	3			
115782	57	33	146	81	32	3			

Screw torques max.  
**115619** T8 IP 1,1 Nm  
**115628** T15 IP 3,8 Nm  
**115579** T15 3,8 Nm

## CT Eccentric Clamping Sleeve

Tools with cylindrical shanks and a cutting edges, such as counterbores, can be adjusted to  $\pm 0.5$  in diameter by simply turning to + or - with this Eccentric clamping sleeve. Thus, it is possible to produce intermediate sizes and special tolerances with standard tools.



Order No.	D mm	d H5 mm	L mm	L1 mm	D1 mm	h h13 mm
115744	25	6	61	56	29	23
115752	25	8	61	56	29	23
115673	25	10	61	56	29	23
115719	25	12	61	56	29	23
115712	25	16	61	56	29	23
115726	32	6	65	60	36	30
115643	32	8	65	60	36	30
115761	32	10	65	60	36	30
115762	32	12	65	60	36	30
115674	32	16	65	60	36	30
115753	32	20	65	60	36	30
115713	32	25	65	60	36	30

## Carbide Inserts for CT Tools

ISO		DX6 P30	CH1 K10	KM 22 TiAlN	PMK 92 TiAlN	CT 50 Cermet	CT 53 Cermet/TiAlN
MBHT 120404.N12		115438			115530		
MBHT 120404.N13			115440	115502			
MBHT 120404.N14		115449			115539		
MBHW 120404.N15						115541	115618
MBHX 120404.L16						115603	115531
MBMT 120408.N12		115488	115441	115480	115609		
MCHT 09T304.N12		115409			115584		
MCHT 09T304.N13			115510	115462			
MCHT 09T304.N14		115439			115610		
MCHW 09T304.N15						115586	115615
MCHX 09T304.L16						115627	115515
MCMT 09T308.N12		115403	115415	115538	115491		
MPHT 060202.N12		115388			115592		
MPHT 060202.N13			115490	115555			
MPHT 060202.N14		115489			115550		
MPHW 060202.N15						115594	115532
MPHX 060202.L16						115508	115509
MPMT 060204.N12		115457	115458	115556	115565		

7

ISO		DX	CH1 K10	XPX K10/TiN	KM 21 K10/AlO <sub>2</sub>	PMK 32 TiN	KM 22 TiAlN	PMK 63 Al <sub>2</sub> O <sub>3</sub> /TiN
CPGX 04T102.L52			115521				115452	
CPGX 04T102.L53		115414				115423		
CPGX 04T102.L54			115497					

## CT Chip Breakers and Cutting Edges CT Carbide Grades in Use

Chip breaker		Operation				Material				
		Milling	Counter-sinking	Counter-boring	Steel	Steel < 800	Inox Titan	Ni-Co	Cast Iron	Aluminium
N 12		●	●	●	●	●	○		●	
N 13		●	●	●			○			●
N 14		●	●	●	●	●	●		○	
N 15		●	○	○	●	●			●	
R 16			●	●	●	○	●			
N 17		●	●				○			●
N 18		●			●	●	●	○	●	
N 19		●	●		●	●	○			
N 20		●						○	○	●
L 52								●	●	
L 53					●	●	●			
L 54									●	






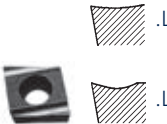
Grade	Carbide Quality					Material					
	Carbide	CERMET	TiAlN	TiN	Al <sub>2</sub> O <sub>3</sub>	Steel < 800	Steel > 800	Inox Titan	Ni-Co Leg.	Cast Iron	Aluminium
DX	X					●					
DX6	X					●					
CH1	X									●	●
XPK	X			●		○	●	●	●	○	
XPT	X		●	●		●	●	●	●	○	
PMK32	X		●			●	●	●	○	○	
KM22	X		●						○	●	
KM21	X			●	●			○		●	
PMK92	X		●			●	●	○		○	
PMK91	X				●	●	●	○			
PMK63	X			●	●	●	●	●			
CT50		X				●	●			●	
CT53		X	●			●	●			●	

● very good      ○ good      X Basic substrate

## CT Carbide Grades Insert Selection Guide for CT Countersinks

<b>DX6</b>	Uncoated carbide grade for milling, countersinking and drilling, mainly for steel machining.	<b>PMK 63</b>	Abrasion-resistant grade with TiN/Al <sub>2</sub> O <sub>3</sub> coating for milling for steel.
<b>CH1</b>	Uncoated multi range grade for the aluminum and cast iron machining for milling, countersinking and reaming.	<b>PMK 92</b>	TiAlN-coated grade for milling, countersinking and drilling in steel.
<b>XPK</b>	TiN-coated grade, especially for steel $\geq 800$ N/mm <sup>2</sup> , titanium, Ni- and Co based alloys.	<b>CT 50</b>	Tough CERMET grade, specially for milling for slight cuts.
<b>KM 21</b>	Abrasion-resistant grade with aluminum oxide coating, specially designed for casting.	<b>CT 53</b>	Tough CERMET grade with TiAlN coating, specially for milling, countersinking and drilling in steel or cast iron.
<b>KM 22</b>	TiAlN-coated grade for machining titanium and cast iron.	<b>PMK 32</b>	Abrasion-resistant grade with TiAlN coating for turning of steel and titanium.
<b>DX</b>	Uncoated multi range grade, to turn mainly for the steel machining.		

7

<p>MPHT 060202.N12</p> <div style="display: flex; align-items: center; justify-content: space-around;">  <div style="text-align: right;"> <div style="background-color: #cccccc; padding: 2px 5px; margin-bottom: 5px;">DX6</div> <div style="background-color: #4a7ebb; padding: 2px 5px;">PMK92</div> </div> </div> <p>for steel +Inox</p>	<p>MPHT 060202.N14</p> <div style="display: flex; align-items: center; justify-content: space-around;">  <div style="text-align: right;"> <div style="background-color: #cccccc; padding: 2px 5px; margin-bottom: 5px;">DX6</div> <div style="background-color: #4a7ebb; padding: 2px 5px;">PMK92</div> </div> </div> <p>for steel +Inox</p>	<p>MPHX 060202.L16</p> <div style="display: flex; align-items: center; justify-content: space-around;">  <div style="text-align: right;"> <div style="background-color: #cccccc; padding: 2px 5px; margin-bottom: 5px;">CT50</div> <div style="background-color: #4a7ebb; padding: 2px 5px;">CT53</div> </div> </div> <p>for long chipping material</p>
<p>MPHT 060202.N13</p> <div style="display: flex; align-items: center; justify-content: space-around;">  <div style="text-align: right;"> <div style="background-color: #cccccc; padding: 2px 5px; margin-bottom: 5px;">CH1</div> <div style="background-color: #4a7ebb; padding: 2px 5px;">KM22</div> </div> </div> <p>for light metal</p>	<p>MPHW 060202.N15</p> <div style="display: flex; align-items: center; justify-content: space-around;">  <div style="text-align: right;"> <div style="background-color: #cccccc; padding: 2px 5px; margin-bottom: 5px;">CT50</div> <div style="background-color: #4a7ebb; padding: 2px 5px;">CT53</div> </div> </div> <p>for short chipping material</p>	<p>CPGX 04T102.</p> <div style="display: flex; align-items: center; justify-content: space-around;">  <div style="text-align: right;"> <div style="background-color: #cccccc; padding: 2px 5px; margin-bottom: 5px;">CH1</div> <div style="background-color: #4a7ebb; padding: 2px 5px; margin-bottom: 5px;">KM22</div> <div style="background-color: #cccccc; padding: 2px 5px; margin-bottom: 5px;">DX</div> <div style="background-color: #e6e600; padding: 2px 5px; margin-bottom: 5px;">PMK32</div> <div style="background-color: #cccccc; padding: 2px 5px;">CH1</div> </div> </div> <p>.L52 .L53 .L54</p>

## Reaming





## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

# PolyREAM

## RPK-Reamers with Polygonal Insert Seat for High Chip Removal

A new generation of Reamers to machine blind and through holes in components with greater accuracy. The polygonal connection between the insert and the shank provides improved strength allowing greater cutting forces which in turn makes for economical machining.

Two basic types RPK 40 and RPK 42 are available, which cover a wide range of applications by their different shanks and cutting insert designs. Changing the insert is quick and easy. The front clamping screw absorbs none of the cutting forces and is merely there to hold the insert in place. Different overall lengths are available.

### Advantages

- High-tensile connection by polygonal insert seat
- Easy insert change
- Internal coolant supply directly to the cutting edge
- High concentricity
- Longer durabilities
- High precision
- Higher volume of metal removed by reaming
- Higher feeds
- Shorter processing times
- Special dimensions available

### Configurations

- Shank sizes 16 / 20 mm
- Lengths design short / long
- Left-hand twist for through holes
- Straight grooves for blind bores
- Diameter sizes: 12,00 - 20,20 mm
- Any gate geometries
- Any tolerances
- Cutting materials: carbide / Cermet
- Coatings: TINAMATIC

### mimatic® Tool Systems for Sustainability and Efficiency

**BLUECOMPETENCE**

Alliance Member

Partner of the Engineering Industry Sustainability Initiative

Tools according to the policy of BLUECOMPETENCE are marked in this catalogue. More information on the program (Initiative) of the VDMA see pages 16-17.



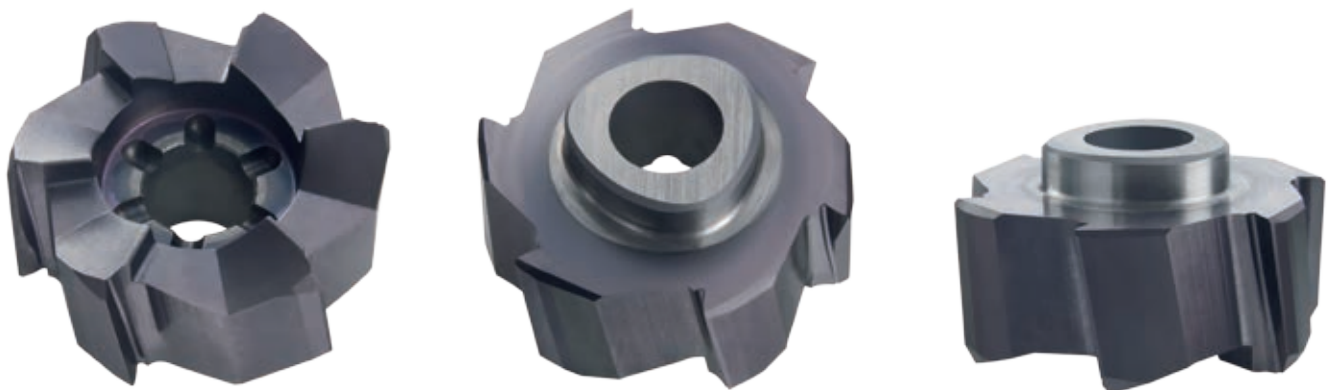
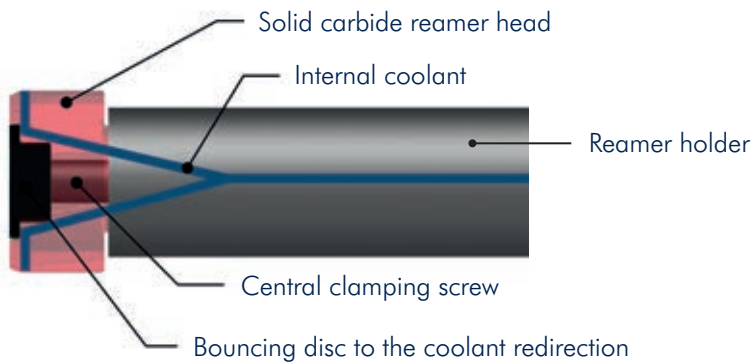
## Order-Key for Your Individual Customizing of Reamers

Order numbers for reamers are predefined for common applications within the order tables. Alternatively, the user can completely individually

customize its own ream (intermediate dimension, geometry, cutting material, tolerance,...). An additional key is generated with the

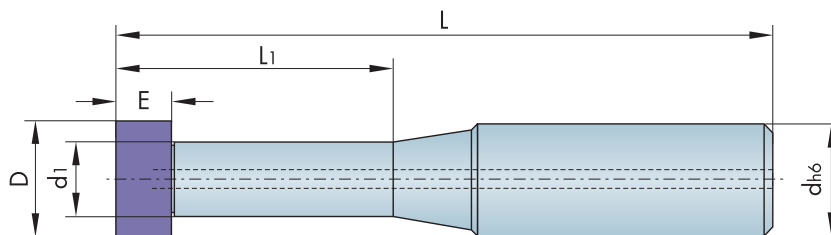
following table that serves your initial order. For subsequent orders, you will receive a short order number assigned.

Type	Size	Diameter	Tolerance	Gate geometry	Cutting mat.	Coating					
RPK 40 = Straight grooves for blind bores  RPK 42 = Left-hand twist for through holes	J = 16 M = 20	Specifying in mm	• +10 -10 • H7	see page 164 and in the table below	1 = Carbide 7 = Cermet	0 = without (blank) 1 = TINAMATIC (Thin layer)					
<b>Example:</b>											
R	P	K	40	M	20,100	+10 -12	L	B	G	1	1

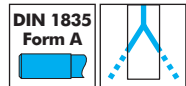


## Reamer Holders with Polygonal Interface

- Gate Geometries Page 164
- Cutting data see page 180



Typ  
**RPS  
400**



Shank size	Order No.	D min.-max.	Drilling depth	dh6 mm	d1 mm	E mm	L mm	L1 mm	Description	Shank mat.	Spare part No.		
											T15 / T20 IP Screw-driver	Screw	Bouncing disc
J	169208	12,00-16,20	3 x D	16	11	9	110	38	RPS400J3D6	Steel	111671	107473	107536
J	169209	12,00-16,20	5 x D	16	11	9	140	68	RPS400J5D6	Steel	111671	107473	107536
M	169210	16,21-20,20	3 x D	20	14	9	125	50	RPS400M3D6	Steel	111594	169815	169812
M	169211	16,21-20,20	5 x D	20	14	9	175	100	RPS400M5D6	Steel	111594	169815	169812

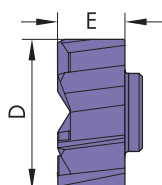
Screw torques max.  
**107473** T15 IP 3,8 Nm  
**169815** T20 IP 5,5 Nm

## Reamer Heads with Polygonal Interface

- Grooves with left-hand twist for through holes
- For steel materials (P, M)
- Cutting data see page 180



Please generate order-key for individual customizing and intermediate sizes (see page 161)



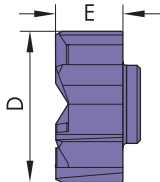
Shank size	Type	D mm	Tolerance	E mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 42	12,00	H7	9	6	LBG	RPK42J12,00H7LBG11	169490
J	RPK 42	13,00	H7	9	6	LBG	RPK42J13,00H7LBG11	169492
J	RPK 42	14,00	H7	9	6	LBG	RPK42J14,00H7LBG11	169494
J	RPK 42	15,00	H7	9	6	LBG	RPK42J15,00H7LBG11	169496
J	RPK 42	16,00	H7	9	6	LBG	RPK42J16,00H7LBG11	169498
M	RPK 42	17,00	H7	9	6	LBG	RPK42M17,00H7LBG11	169500
M	RPK 42	18,00	H7	9	6	LBG	RPK42M18,00H7LBG11	169502
M	RPK 42	19,00	H7	9	6	LBG	RPK42M19,00H7LBG11	169504
M	RPK 42	20,00	H7	9	6	LBG	RPK42M20,00H7LBG11	169506

## Reamer Heads with Polygonal Interface

- Straight grooves for blind bores
- For steel materials (P, M)
- Cutting data see page 180



Please generate order-key for individual customizing and intermediate sizes (see page 161)

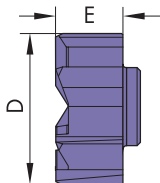


Shank size	Type	D mm	Tolerance	E mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 40	12,00	H7	9	6	LBG	RPK40J12,00H7LBG11	169489
J	RPK 40	13,00	H7	9	6	LBG	RPK40J13,00H7LBG11	169491
J	RPK 40	14,00	H7	9	6	LBG	RPK40J14,00H7LBG11	169493
J	RPK 40	15,00	H7	9	6	LBG	RPK40J15,00H7LBG11	169495
J	RPK 40	16,00	H7	9	6	LBG	RPK40J16,00H7LBG11	169497
M	RPK 40	17,00	H7	9	6	LBG	RPK40M17,00H7LBG11	169499
M	RPK 40	18,00	H7	9	6	LBG	RPK40M18,00H7LBG11	169501
M	RPK 40	19,00	H7	9	6	LBG	RPK40M19,00H7LBG11	169503
M	RPK 40	20,00	H7	9	6	LBG	RPK40M20,00H7LBG11	169505

- Straight grooves for blind bores
- For cast iron materials (K)
- Cutting data see page 180



Please generate order-key for individual customizing and intermediate sizes (see page 161)

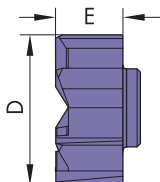


Shank size	Type	D mm	Tolerance	E mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 40	12,00	H7	9	6	CND	RPK40J12,00H7CND11	169945
J	RPK 40	13,00	H7	9	6	CND	RPK40J13,00H7CND11	169947
J	RPK 40	14,00	H7	9	6	CND	RPK40J14,00H7CND11	169949
J	RPK 40	15,00	H7	9	6	CND	RPK40J15,00H7CND11	169951
J	RPK 40	16,00	H7	9	6	CND	RPK40J16,00H7CND11	169953
M	RPK 40	17,00	H7	9	6	CND	RPK40M17,00H7CND11	169955
M	RPK 40	18,00	H7	9	6	CND	RPK40M18,00H7CND11	169957
M	RPK 40	19,00	H7	9	6	CND	RPK40M19,00H7CND11	169959
M	RPK 40	20,00	H7	9	6	CND	RPK40M20,00H7CND11	169961

- Straight grooves for blind bores
- For aluminium cast alloys (N)
- Cutting data see page 180



Please generate order-key for individual customizing and intermediate sizes (see page 161)



Shank size	Type	D mm	Tolerance	E mm	Number of edges	Gate geometry	Description	Order No. TINAMATIC
J	RPK 40	12,00	H7	9	6	CNG	RPK40J12,00H7CNG11	169946
J	RPK 40	13,00	H7	9	6	CNG	RPK40J13,00H7CNG11	169948
J	RPK 40	14,00	H7	9	6	CNG	RPK40J14,00H7CNG11	169950
J	RPK 40	15,00	H7	9	6	CNG	RPK40J15,00H7CNG11	169952
J	RPK 40	16,00	H7	9	6	CNG	RPK40J16,00H7CNG11	169954
M	RPK 40	17,00	H7	9	6	CNG	RPK40M17,00H7CNG11	169956
M	RPK 40	18,00	H7	9	6	CNG	RPK40M18,00H7CNG11	169958
M	RPK 40	19,00	H7	9	6	CNG	RPK40M19,00H7CNG11	169960
M	RPK 40	20,00	H7	9	6	CNG	RPK40M20,00H7CNG11	169962

# PolyREAM

## Gate Geometries

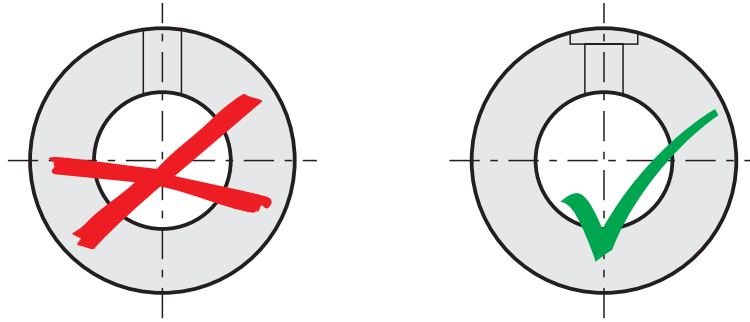
Gate geometry	Chip breaker		Chip angle		Gate code	
	Code	Code	Code	Code		
	L	YES	B	0°	D	LBD
		NO	N			LND
		YES	B	6°	G	LBG
		NO	N			LNG
		YES	B	12°	R	LBR
		NO	N			LNR
	E	YES	B	0°	D	EBD
		NO	N			END
		YES	B	6°	G	EBG
		NO	N			ENG
		YES	B	12°	R	EBR
		NO	N			ENR
	G	YES	B	0°	D	GBD
		NO	N			GND
		YES	B	6°	G	GBG
		NO	N			GNG
		YES	B	12°	R	GBR
		NO	N			GNR
	C	YES	B	0°	D	CBD
		NO	N			CND
		YES	B	6°	G	CBG
		NO	N			CNG
		YES	B	12°	R	CBR
		NO	N			CNR
	A	YES	B	0°	D	ABD
		NO	N			AND
		YES	B	6°	G	ABG
		NO	N			ANG
		YES	B	12°	R	ABR
		NO	N			ANR
	D	YES	B	0°	D	DBD
		NO	N			DND
		YES	B	6°	G	DBG
		NO	N			DNG
		YES	B	12°	R	DBR
		NO	N			DNR
	R	YES	B	0°	D	RBD
		NO	N			RND
		YES	B	6°	G	RBG
		NO	N			RNG
		YES	B	12°	R	RBR
		NO	N			RNR
	W	YES	B	0°	D	WBD
		NO	N			WND
		YES	B	6°	G	WBG
		NO	N			WNG
		YES	B	12°	R	WBR
		NO	N			WNR
SPECIAL	S					001 - 999

# PolyREAM

## Ream Addition

Ream diameter (mm)	Ream addition (mm to the dia.)
≤ 16,00	0,10 - 0,25
> 16,00	0,20 - 0,30

## Information



Before reaming – radial on round parts – the part must be spot-faced

**Axial Grooving, adjustable**





## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

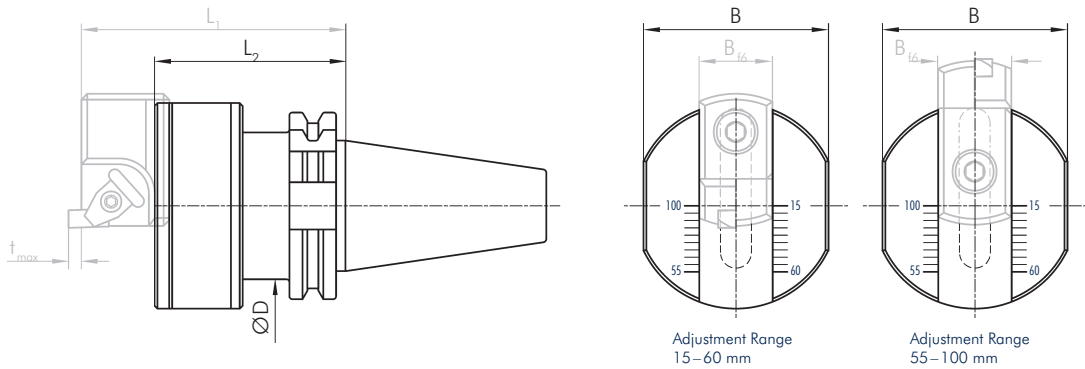
## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Axial Cutting Tools with scalable Cutting Diameter and Fine-adjustment

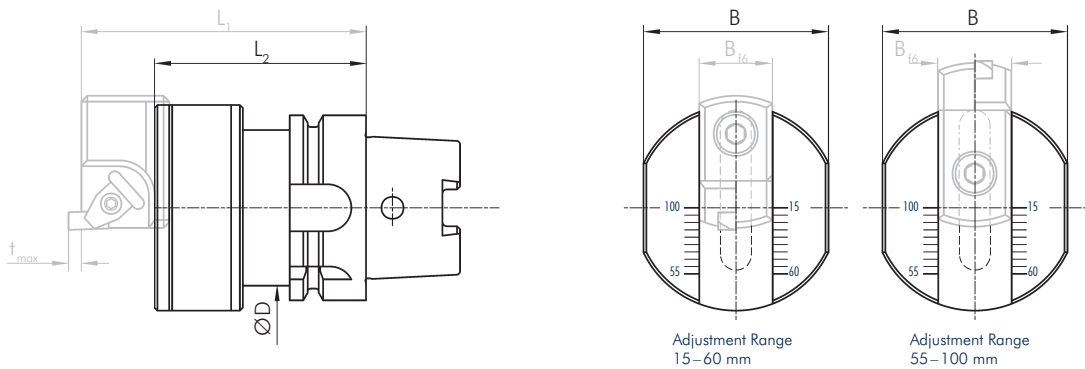
■ All Axial-Cutting Tools without Insert Holders

### DIN 69871 MAS-BT



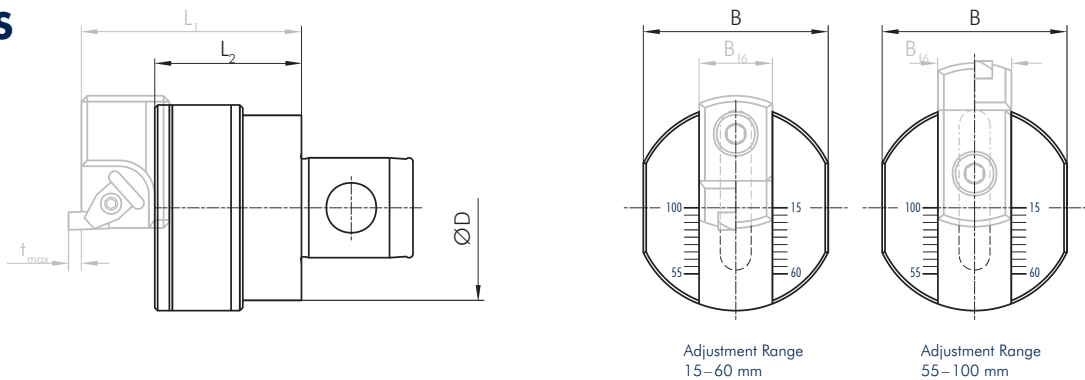
Order No.	Adjustment Range Ø mm	Shank size	Insert size	L1 mm	L2 mm	B mm	Bf6 mm	D mm	tmax. mm
133134	15 – 100	SK 40	A 6R	90	65	63	25	40	4,0
133151	15 – 100	SK 50	A 6R	90	65	63	25	75	4,0
133109	55 – 100	BT 40	A 6R	90	65	63	25	40	4,0

### DIN 69893



Order No.	Adjustment Range Ø mm	Shank size	Insert size	L1 mm	L2 mm	B mm	Bf6 mm	D mm	tmax. mm
133118	15 – 100	HSK 63	A 6R	97	72	63	25	53	4,0

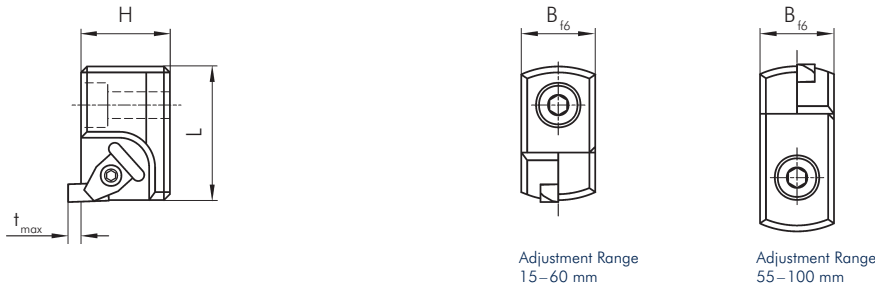
### Komet® ABS



Order No.	Adjustment Range Ø mm	Shank size	Insert size	L1 mm	L2 mm	B mm	Bf6 mm	D mm	tmax. mm
133096	15 – 60	ABS 50	A 6R	75	48	63	25	50	4,0
133135	15 – 100	ABS 63	A 6R	75	50	63	25	63	4,0

## Insert Holders

■ Special-Insert holders on request



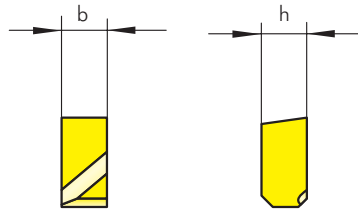
Order No.	Adjustment Range Ø mm	Insert size	L mm	Bf6 mm	H mm	tmax. mm	Spare part No.	
							Clamping claw	Screw
133117	15 – 60	A6R	45	25	30	4,0	107540	114688
133090	55 – 100	A6R	62	25	30	4,0	107540	114688

Screw torque 0,9 Nm

## Unprofiled Carbide Inserts

■ Cutting data see page 181

Righthand version shown



Size	Design	b	h	K10	P25	FKN
A 6R	right	6	6	142841	142770	142855

Various forms of insert profiles.  
Other profiles according to DIN or drawing are available on request.



### Order form for Axial Cutting Inserts

Size	Ø Dmin. - Dmax. mm	Please note your cutting width mm	K10	P25	FKN	TiAlNF
A 6R right	15-25					
A 6R right	23-40					
A 6R right	35-60					
A 6R right	55-85					
A 6R right	75-100					
A 6R right	95-100					

## Function and Handling

### Technical Data

Complete tool, consisting of

- Axial-Cutting-Tool
- 2 insert holders for cutting range
  - a) 15 – 60 mm
  - b) 55 – 100 mm

### Advantages

This tool makes operations possible in workpieces, which cannot be clamped on turning machines.

### Applications

Making grooves (DIN- or special grooves) up to a

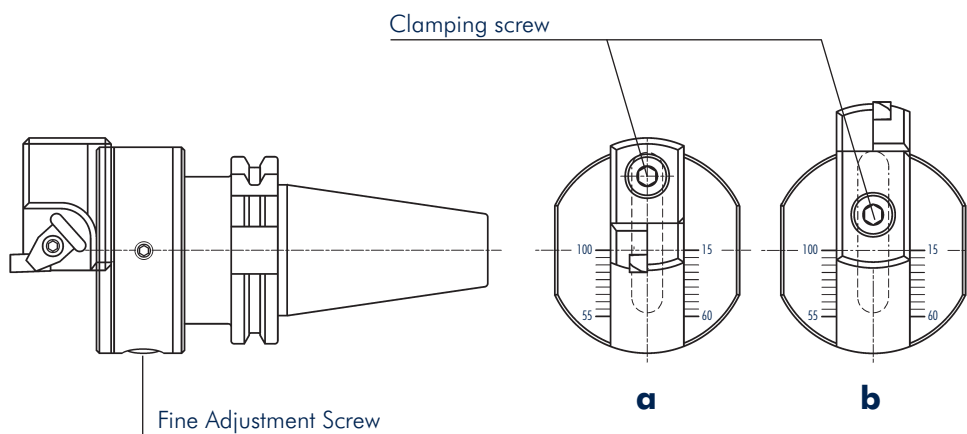
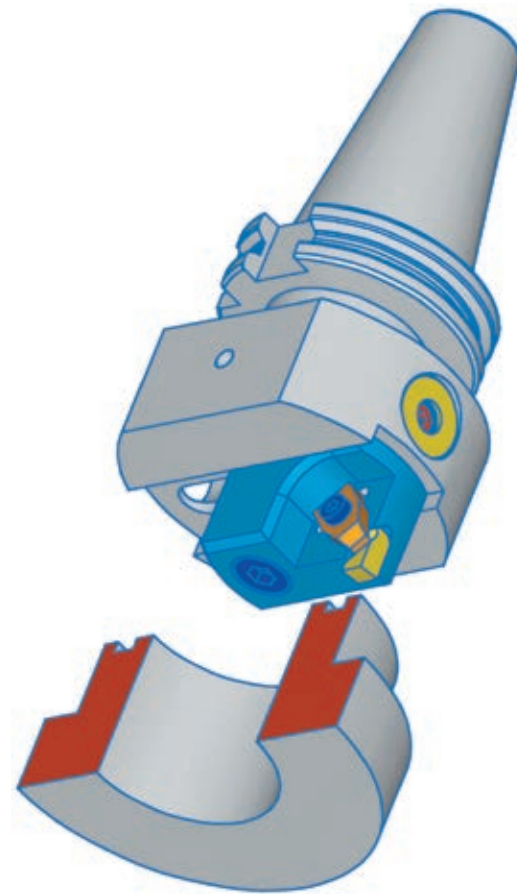
- Cutting depth of max. 4,0 mm
- Cutting width of max. 6 mm

### Rough Adjustment

1. Removing the clamping screw
2. Rough adjustment of the insertholder over the screening system (2,5 mm)
3. Low tighten the clamping screw

### Fine Adjustment

1. Fine adjustment over the fine adjustment screw
2. Tighten the clamping screw





Management Service

# CERTIFICATE

The Certification Body  
of TÜV SÜD Management Service GmbH

certifies that

**mimatic**<sup>®</sup>  
T o o l S y s t e m s

**mimatic GmbH**  
Westendstraße 3  
D-87488 Betzigau

has established and applies  
a Quality Management System for

**Development, Design, Production, Sales and  
Service of Driven Toolholders, Cutting Tools,  
Clamping Systems and Special Tools.**

An audit was performed, Report No. **70006182**  
Proof has been furnished that the requirements  
according to

**ISO 9001:2008**

are fulfilled. The certificate is valid until **2014-02-06**

Certificate Registration No. **12 100 15724 TMS**

*M. Wegner*

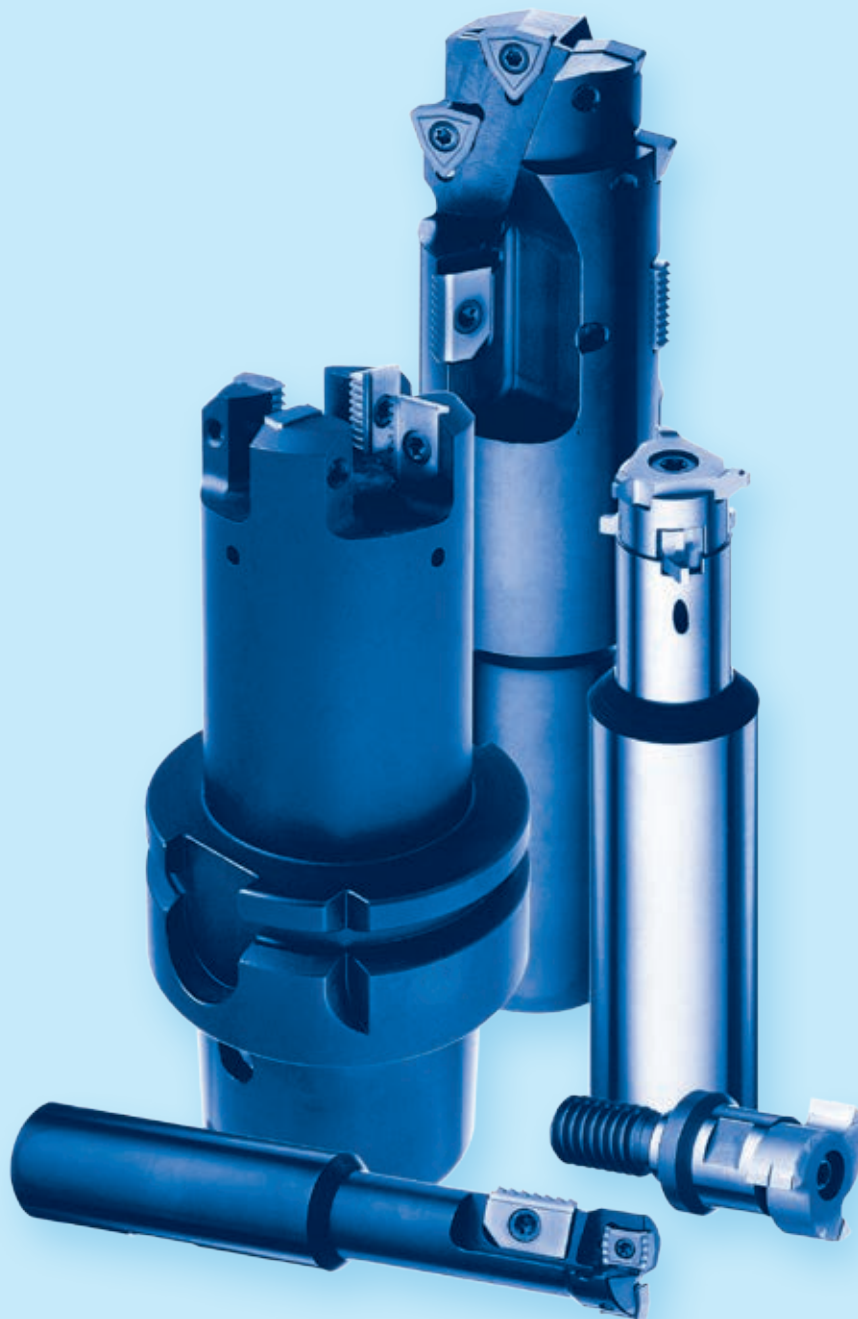
Munich, 2013-02-26



QMS-TGA-ZM-07-92

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ CERTIFICADO ◆ CERTIFICAT  
 TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD TÜV SÜD

## Special- and Combination Tools



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
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<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
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## TOOL CLAMPING

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	Precision Chucks	532-543	19

## Special Solutions

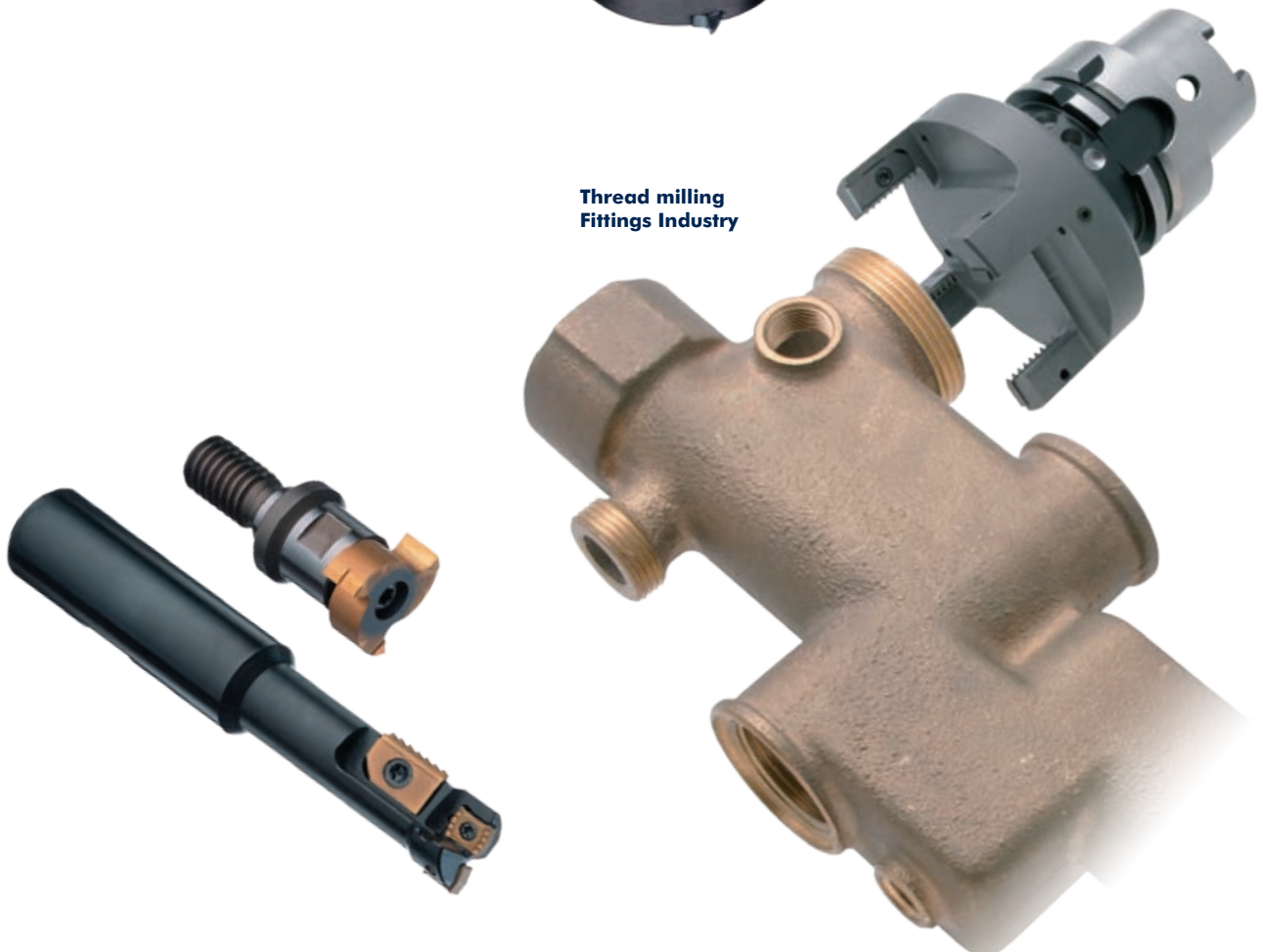
Here you see examples of our products and our expertise in the area of special cutting tools. Do you have a special application or a production problem?

Ask us – we gladly accept the challenge and develop together with you a solution in the areas of:

- **Milling**
- **Thread Milling**
- **Slots**
- **Chamfering**
- **Facing**
- **Grooving**

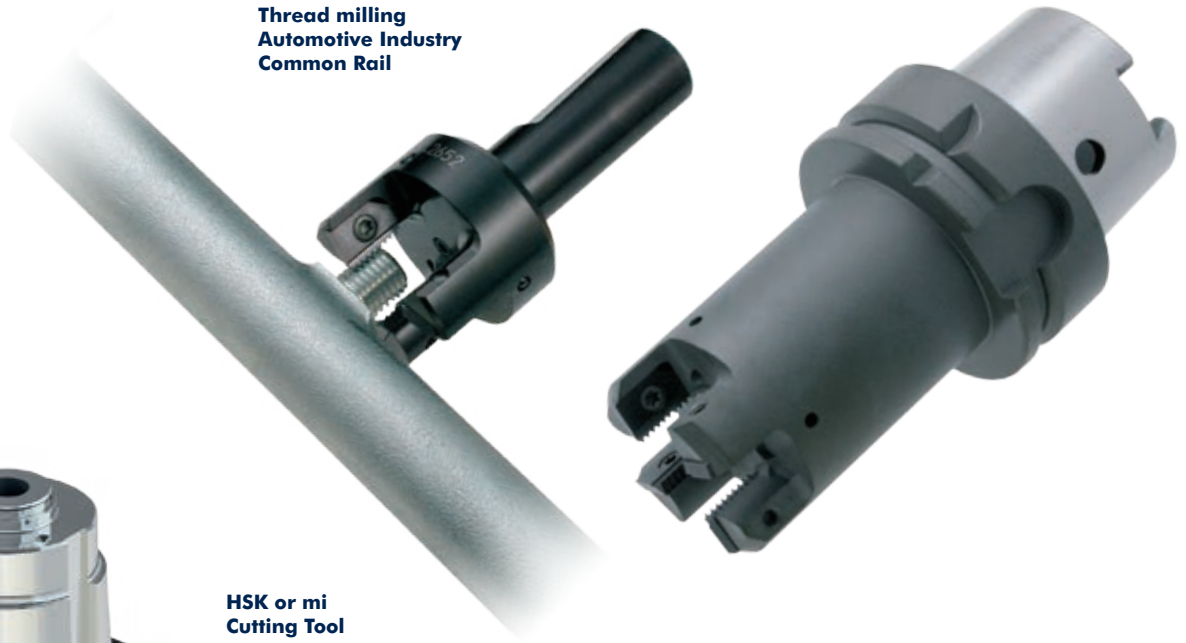


**Thread milling  
Fittings Industry**





**Thread milling**  
Automotive Industry  
Common Rail



**HSK or mi  
Cutting Tool**

- jigging
  - chamfering
- Materials:  
1. 20MnVS6  
2. X15 CrNiSi20  
(DIN 1.4828)



**HSK or mi  
Cutting Tool**

- drilling
- planing
- VHM twist drill
- chamfering



**HSK or mi  
Milling Tool**

- 5 different CT plates
- chamfering
  - milling threads
  - milling planes
  - counterboring
- Material:  
AlMgSi1 (DIN 3.2315)

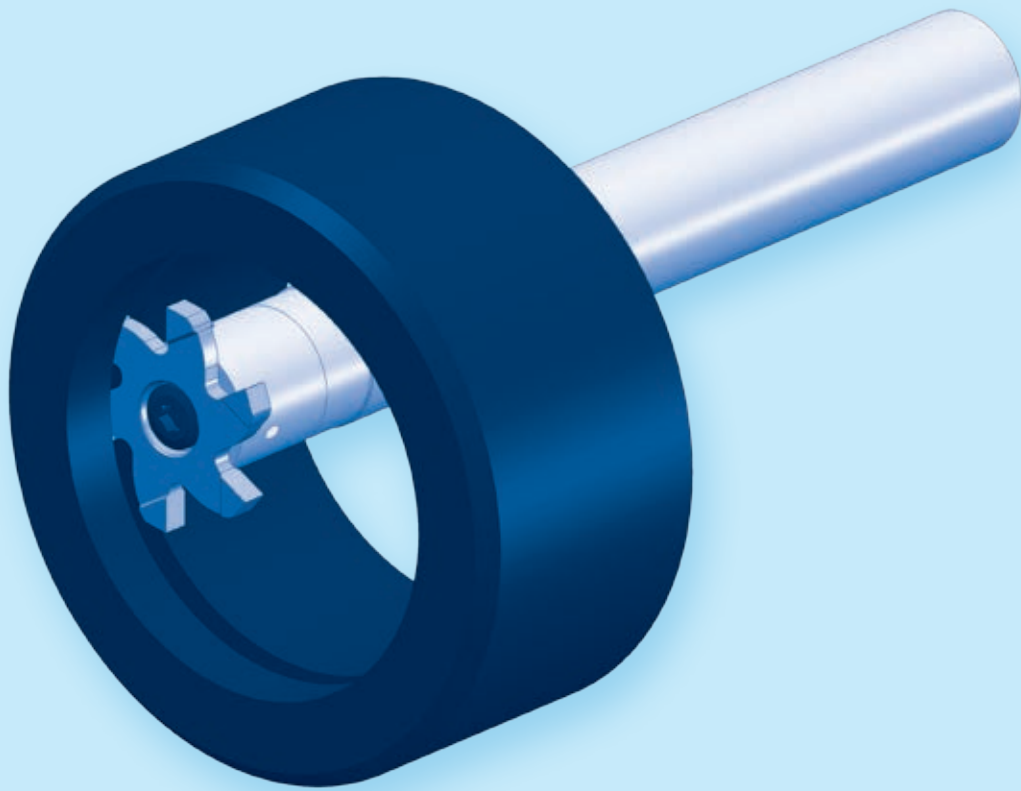


**HSK or mi  
Milling Tool**

- contour milling
- Material: 16MnCr5



## Technical Cutting Data



## CUTTING TOOLS

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# Cutting Data Reference Values

	Material	Strength	SolidCUT		SolidCUT			
			FKN		TINAMATIC	Ø 2,4 - 3,15	Ø 4	Ø 4,8 - 16
			Vc (m/min.)	fz mm	Vc (m/min.)	fz mm	fz mm	fz mm
<b>A</b>	1.1 General construction steel	< 800 N/mm <sup>2</sup>			80-250	0,03-0,04	0,03-0,06	0,05-0,15
	1.2 Free cutting steel	< 800 N/mm <sup>2</sup>			80-250	0,03-0,04	0,03-0,06	0,05-0,15
	1.3 Unalloyed cementation steel	< 800 N/mm <sup>2</sup>			80-250	0,03-0,04	0,03-0,06	0,05-0,15
	1.4 Alloyed cementation steels	< 1000 N/mm <sup>2</sup>			60-120	0,01-0,02	0,01-0,03	0,05-0,10
	1.5 Unalloyed heat-treatable steel	< 850 N/mm <sup>2</sup>			60-120	0,01-0,02	0,01-0,03	0,05-0,10
	1.6 Unalloyed heat-treatable steel	< 1000 N/mm <sup>2</sup>			60-120	0,01-0,02	0,01-0,03	0,05-0,10
	1.7 Alloyed heat-treatable steel	< 800 N/mm <sup>2</sup>			80-200	0,03-0,04	0,03-0,06	0,05-0,10
	1.8 Alloyed heat-treatable steel	< 1300 N/mm <sup>2</sup>			40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.9 Cast Steel	< 850 N/mm <sup>2</sup>			60-120	0,01-0,02	0,04-0,07	0,05-0,10
	1.10 Nitriding steel	< 1000 N/mm <sup>2</sup>			60-120	0,01-0,02	0,04-0,07	0,05-0,10
	1.11 Nitriding steel	< 1200 N/mm <sup>2</sup>			40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.12 Ball bearing steel	< 1200 N/mm <sup>2</sup>			40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.13 Spring steel	< 1200 N/mm <sup>2</sup>			40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.14 Rapid steel	< 1300 N/mm <sup>2</sup>			40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.15 Cold work tool steel	< 1300 N/mm <sup>2</sup>			40-100	0,01-0,02	0,03-0,05	0,04-0,06
	1.16 Hot work tool steel	< 1300 N/mm <sup>2</sup>			40-100	0,01-0,02	0,03-0,05	0,04-0,06
<b>R</b>	2.1 Stainless steel, sulphured	< 850 N/mm <sup>2</sup>			50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.2 Stainless steel, ferritic	< 750 N/mm <sup>2</sup>			50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.3 Stainless steel, martensitic	< 900 N/mm <sup>2</sup>			50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.4 Stainless steel, ferritic/martensitic	< 1100 N/mm <sup>2</sup>			50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.5 Stainless steel, austenitic/ferritic	< 850 N/mm <sup>2</sup>			50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.6 Stainless steel, austenitic	< 750 N/mm <sup>2</sup>			50-150	0,03-0,04	0,03-0,04	0,05-0,12
	2.7 Heat-resisting steel	< 1100 N/mm <sup>2</sup>			50-150	0,03-0,04	0,03-0,04	0,05-0,12
<b>F</b>	3.1 Flake-graphite cast iron	100-350 N/mm <sup>2</sup>	60-120	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.2 Flake-graphite cast iron	300-1000 N/mm <sup>2</sup>	60-120	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.3 Spheroidal graphite cast iron	300-500 N/mm <sup>2</sup>	60-120	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.4 Spheroidal graphite cast iron	550-800 N/mm <sup>2</sup>	60-120	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.5 Whiteheart malleable cast iron	350-450 N/mm <sup>2</sup>	60-100	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.6 Whiteheart malleable cast iron	500-650 N/mm <sup>2</sup>	60-100	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.7 Blackheart malleable cast iron	350-450 N/mm <sup>2</sup>	60-100	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
	3.8 Blackheart malleable cast iron	500-700 N/mm <sup>2</sup>	60-100	0,04-0,07	100-200	0,03-0,07	0,03-0,07	0,04-0,08
<b>N</b>	4.1 Aluminium (unalloyed, low alloyed)	< 350 N/mm <sup>2</sup>	100-200	0,05-0,08	250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.2 Aluminium alloys < 0,5% Si	< 500 N/mm <sup>2</sup>	100-250	0,05-0,08	250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.3 Aluminium alloys 0,5-10% Si	< 400 N/mm <sup>2</sup>			250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.4 Aluminium alloys 10-15% Si	< 400 N/mm <sup>2</sup>			250-500	0,05-0,07	0,05-0,07	0,06-0,12
	4.5 Aluminium alloys > 15% Si	< 400 N/mm <sup>2</sup>			180-250	0,05-0,07	0,05-0,07	0,06-0,12
	4.6 Cooper (unalloyed, low alloyed)	< 350 N/mm <sup>2</sup>			250-300	0,05-0,07	0,05-0,07	0,06-0,08
	4.7 Cooper wrought alloys	< 700 N/mm <sup>2</sup>						
	4.8 Cooper special alloys	< 200 HB						
	4.9 Cooper special alloys	< 300 HB						
	4.10 Cooper special alloys	> 300 HB						
	4.11 Brass, short-chipping, Bronze, Red brass	< 600 N/mm <sup>2</sup>	100-200	0,05-0,08	250-300	0,05-0,07	0,05-0,07	0,06-0,08
	4.12 Brass, long-chipping	< 600 N/mm <sup>2</sup>						
	4.13 Thermoplastic				350-450	0,08-0,1	0,08-0,1	0,1-0,12
	4.14 Thermosetting plastic		150-250	0,05-0,1	300-400	0,08-0,1	0,08-0,1	0,1-0,12
	4.15 Fibre-reinforced plastics				180-200	0,02-0,04	0,02-0,04	0,03-0,04
	4.16 Magnesium and magnesium alloys	< 850 N/mm <sup>2</sup>						
	4.17 Graphite							
	4.18 Wolfram and wolfram alloys							
	4.19 Molybdenum and molybdenum alloys							
<b>S</b>	5.1 Pure nickel							
	5.2 Nickel alloys							
	5.3 Nickel alloys	< 850 N/mm <sup>2</sup>	20-40	0,01-0,03	60-80	0,02-0,04	0,02-0,04	0,03-0,04
	5.4 Nickel-chrome alloys							
	5.5 Nickel- and cobalt alloys	< 1300 N/mm <sup>2</sup>						
	5.6 Nickel- and cobalt alloys	< 1300 N/mm <sup>2</sup>						
	5.7 High temperature alloys	< 1300 N/mm <sup>2</sup>						
	5.8 Nickel-cobalt-(chrome-) alloys	< 1400 N/mm <sup>2</sup>						
	5.9 Pure Titanium	< 900 N/mm <sup>2</sup>						
	5.10 Titanium alloys	< 700 N/mm <sup>2</sup>	20-40	0,01-0,03				
	5.11 Titanium alloys	< 1200 N/mm <sup>2</sup>	20-40	0,01-0,03	50-80	0,01-0,03	0,01-0,03	0,01-0,03
<b>H</b>	6.1 Hardened steel	< 45 HRC	20-40	0,03-0,05	40-60		0,03-0,05	0,03-0,05
	6.2	46-55 HRC	20-40	0,03-0,05	40-50		0,03-0,05	0,03-0,05
	6.3	56-60 HRC			30-40		0,02-0,04	0,02-0,04
	6.4	61-65 HRC						
	6.5	65-70 HRC						

\* The indicated feed values apply only with circular bringing in loop. During linear bringing in movement the feed motion amounts to max. 30%

System 14,5-26 + TrioCUT				PolyMILL 3/6 Cutting Edges		TriMILL			
K 10	TINAMATIC	12, 14,5, 15, 17, 20, 25	21, 26	TINAMATIC		FKN	TINAMATIC		
Vc (m/min.)	Vc (m/min.)	fz mm	fz mm	Vc (m/min.)	fz mm	Vc (m/min.)	Vc (m/min.)	fz mm	
1.1	180-260	0,1-0,3	0,05-0,3	150-200	0,05-0,25		120-180	0,05-0,12	
1.2	180-260	0,1-0,3	0,05-0,3	150-200	0,05-0,25		120-180	0,05-0,12	
1.3	180-260	0,1-0,3	0,05-0,3	100-150	0,05-0,25		120-180	0,05-0,12	
1.4	180-220	0,1-0,3	0,05-0,3	100-150	0,05-0,25		100-120	0,05-0,12	
1.5	180-260	0,1-0,3	0,05-0,3	150-200	0,05-0,25		120-180	0,05-0,12	
1.6	180-220	0,1-0,3	0,05-0,3	100-150	0,05-0,25		100-120	0,05-0,12	
1.7	180-260	0,1-0,3	0,05-0,3	100	0,05-0,25		120-180	0,05-0,12	
1.8	100-150	0,1-0,2	0,05-0,2	100	0,05-0,25		80-100	0,05-0,12	
1.9	180-260	0,1-0,3	0,05-0,3				100-120	0,05-0,12	
1.10	100-150	0,1-0,2	0,05-0,2	120	0,05-0,25		100-120	0,05-0,12	
1.11	100-150	0,1-0,2	0,05-0,2	100	0,05-0,25		80-100	0,05-0,12	
1.12	100-150	0,1-0,2	0,05-0,2				80-100	0,05-0,12	
1.13	100-150	0,1-0,2	0,05-0,2	100	0,05-0,25		80-100	0,05-0,12	
1.14	100-120	0,1-0,2	0,05-0,2	100	0,05-0,25		80-100	0,05-0,12	
1.15	100-150	0,1-0,2	0,05-0,2	100	0,05-0,25		80-100	0,05-0,12	
1.16	100-150	0,1-0,2	0,05-0,2	100	0,05-0,25		80-100	0,05-0,12	
2.1							120-150	0,05-0,12	
2.2							120-150	0,05-0,12	
2.3	130-180	0,1-0,3	0,05-0,3	120	0,05-0,25		100-120	0,05-0,12	
2.4				120	0,05-0,25		100-120	0,05-0,12	
2.5				120	0,05-0,25		120-180	0,05-0,12	
2.6	80-100	0,1-0,2	0,05-0,15	180	0,05-0,25		120-180	0,05-0,12	
2.7							80-100	0,05-0,12	
3.1	100-150	130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	80-120	120-180	0,05-0,12
3.2	80-120	130-200	0,1-0,3	0,05-0,3	120	0,05-0,25	80-120	120-180	0,05-0,12
3.3		130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	80-120	120-180	0,05-0,12
3.4		130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	80-120	120-150	0,05-0,12
3.5		130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	80-120	120-180	0,05-0,12
3.6		130-200	0,1-0,3	0,05-0,3	120	0,05-0,25	80-120	120-180	0,05-0,12
3.7		130-200	0,1-0,3	0,05-0,3	180	0,05-0,25	80-120	120-180	0,05-0,12
3.8		130-200	0,1-0,3	0,05-0,3	120	0,05-0,25	80-120	120-180	0,05-0,12
4.1	300-400	400-600	0,1-0,3	0,05-0,3	160-400	0,05-0,12	400-500		0,05-0,25
4.2	300-400	400-600	0,1-0,3	0,05-0,3	160-400	0,05-0,12	300-400		0,05-0,25
4.3									
4.4									
4.5									
4.6					500	0,15-0,4		300-500	0,05-0,25
4.7									
4.8									
4.9									
4.10									
4.11					400	0,15-0,4		200-300	0,05-0,25
4.12									
4.13					500	0,15-0,4		300-500	0,05-0,25
4.14					500	0,15-0,4		300-500	0,05-0,25
4.15									
4.16									
4.17					500	0,15-0,4		300-500	0,05-0,25
4.18									
4.19									
5.1									
5.2					120	0,05-0,25		80-120	0,05-0,12
5.3					120	0,05-0,25		80-120	0,05-0,12
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10					80	0,01-0,08		70-100	0,01-0,05
5.11					60	0,01-0,08		60-90	0,01-0,05
6.1								80-100	0,03-0,1
6.2					80	0,03-0,15		80	0,03-0,1
6.3									
6.4									
6.5									

# Cutting Data Reference Values

	Material	Strength	STC		PolySAW / DeepMILL			PolyREAM	
			TINAMATIC		TINAMATIC	PolySAW	DeepMILL	TINAMATIC	at dia. 2 mm
			Vc (m/min.)	fz mm	Vc (m/min.)	fz mm	fz mm	Vc (m/min.)	fz mm
<b>A</b>	1.1 General construction steel	< 800 N/mm <sup>2</sup>	120-180	0,05-0,2	120-180	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	1.2 Free cutting steel	< 800 N/mm <sup>2</sup>	120-180	0,05-0,2	120-180	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	1.3 Unalloyed cementation steel	< 800 N/mm <sup>2</sup>	120-180	0,05-0,2	120-180	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	1.4 Alloyed cementation steels	< 1000 N/mm <sup>2</sup>	100-120	0,05-0,2	100-120	0,01-0,02	0,01-0,025	160-180	0,15-0,20
	1.5 Unalloyed heat-treatable steel	< 850 N/mm <sup>2</sup>	120-180	0,05-0,2	120-180	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	1.6 Unalloyed heat-treatable steel	< 1000 N/mm <sup>2</sup>	100-120	0,05-0,2	100-120	0,01-0,02	0,01-0,025	160-180	0,15-0,20
	1.7 Alloyed heat-treatable steel	< 800 N/mm <sup>2</sup>	120-180	0,05-0,2	120-180	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	1.8 Alloyed heat-treatable steel	< 1300 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	140-160	0,12-0,18
	1.9 Cast Steel	< 850 N/mm <sup>2</sup>	100-120	0,05-0,2	100-120	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	1.10 Nitriding steel	< 1000 N/mm <sup>2</sup>	100-120	0,05-0,2	100-120	0,01-0,02	0,01-0,025	160-180	0,15-0,20
	1.11 Nitriding steel	< 1200 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	150-170	0,15-0,20
	1.12 Ball bearing steel	< 1200 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	150-170	0,15-0,20
	1.13 Spring steel	< 1200 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	150-170	0,15-0,20
	1.14 Rapid steel	< 1300 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	140-160	0,12-0,18
	1.15 Cold work tool steel	< 1300 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	140-160	0,12-0,18
	1.16 Hot work tool steel	< 1300 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	140-160	0,12-0,18
<b>R</b>	2.1 Stainless steel, sulphured	< 850 N/mm <sup>2</sup>	120-150	0,05-0,2	120-150	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	2.2 Stainless steel, ferritic	< 750 N/mm <sup>2</sup>	120-150	0,05-0,2	120-150	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	2.3 Stainless steel, martensitic	< 900 N/mm <sup>2</sup>	100-120	0,05-0,2	100-120	0,01-0,02	0,01-0,025	160-180	0,15-0,20
	2.4 Stainless steel, ferritic/martensitic	< 1100 N/mm <sup>2</sup>	100-120	0,05-0,2	100-120	0,01-0,02	0,01-0,025	150-170	0,15-0,20
	2.5 Stainless steel, austenitic/ferritic	< 850 N/mm <sup>2</sup>	120-180	0,05-0,2	120-180	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	2.6 Stainless steel, austenitic	< 750 N/mm <sup>2</sup>	120-180	0,05-0,2	120-180	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	2.7 Heat-resisting steel	< 1100 N/mm <sup>2</sup>	80-100	0,05-0,2	80-100	0,01-0,02	0,01-0,025	150-170	0,15-0,20
<b>F</b>	3.1 Flake-graphite cast iron	100-350 N/mm <sup>2</sup>	120-180	0,1-0,2	120-180	0,01-0,02	0,01-0,025	200-220	0,20-0,25
	3.2 Flake-graphite cast iron	300-1000 N/mm <sup>2</sup>	120-180	0,1-0,2	120-180	0,01-0,02	0,01-0,025	200-220	0,20-0,25
	3.3 Spheroidal graphite cast iron	300-500 N/mm <sup>2</sup>	120-180	0,1-0,2	120-180	0,01-0,02	0,01-0,025	200-220	0,20-0,25
	3.4 Spheroidal graphite cast iron	550-800 N/mm <sup>2</sup>	120-150	0,1-0,2	120-150	0,01-0,02	0,01-0,025	200-220	0,20-0,25
	3.5 Whiteheart malleable cast iron	350-450 N/mm <sup>2</sup>	120-180	0,1-0,2	120-180	0,01-0,02	0,01-0,025	200-220	0,20-0,25
	3.6 Whiteheart malleable cast iron	500-650 N/mm <sup>2</sup>	120-180	0,1-0,2	120-180	0,01-0,02	0,01-0,025	200-220	0,20-0,25
	3.7 Blackheart malleable cast iron	350-450 N/mm <sup>2</sup>	120-180	0,1-0,2	120-180	0,01-0,02	0,01-0,025	200-220	0,20-0,25
	3.8 Blackheart malleable cast iron	500-700 N/mm <sup>2</sup>	120-180	0,1-0,2	120-180	0,01-0,02	0,01-0,025	200-220	0,20-0,25
<b>N</b>	4.1 Aluminium (unalloyed, low alloyed)	< 350 N/mm <sup>2</sup>				0,01-0,02	0,01-0,025	350-400	0,20-0,25
	4.2 Aluminium alloys < 0,5% Si	< 500 N/mm <sup>2</sup>				0,01-0,02	0,01-0,025	300-400	0,20-0,25
	4.3 Aluminium alloys 0,5-10% Si	< 400 N/mm <sup>2</sup>							
	4.4 Aluminium alloys 10-15% Si	< 400 N/mm <sup>2</sup>							
	4.5 Aluminium alloys > 15% Si	< 400 N/mm <sup>2</sup>							
	4.6 Cooper (unalloyed, low alloyed)	< 350 N/mm <sup>2</sup>	300-500	0,15-0,25	300-500	0,01-0,02	0,01-0,025	350-400	0,20-0,25
	4.7 Copper wrought alloys	< 700 N/mm <sup>2</sup>							
	4.8 Cooper special alloys	< 200 HB							
	4.9 Cooper special alloys	< 300 HB							
	4.10 Cooper special alloys	> 300 HB							
	4.11 Brass, short-chipping, Bronze, Red brass	< 600 N/mm <sup>2</sup>	200-300	0,15-0,25	200-300	0,01-0,02	0,01-0,025	200-300	0,20-0,25
	4.12 Brass, long-chipping	< 600 N/mm <sup>2</sup>							
	4.13 Thermoplastic		300-500	0,15-0,25	300-500	0,01-0,02	0,01-0,025		
	4.14 Thermosetting plastic		300-500	0,15-0,25	300-500	0,01-0,02	0,01-0,025		
	4.15 Fibre-reinforced plastics								
	4.16 Magnesium and magnesium alloys	< 850 N/mm <sup>2</sup>							
	4.17 Graphite		300-500	0,15-0,25	300-500	0,01-0,02	0,01-0,025		
	4.18 Wolfram and wolfram alloys								
	4.19 Molybdenum and molybdenum alloys								
<b>S</b>	5.1 Pure nickel								
	5.2 Nickel alloys		80-120	0,05-0,2	80-120	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	5.3 Nickel alloys	< 850 N/mm <sup>2</sup>	80-120	0,05-0,2	80-120	0,01-0,02	0,01-0,025	180-200	0,20-0,25
	5.4 Nickel-chrome alloys								
	5.5 Nickel- and cobalt alloys	< 1300 N/mm <sup>2</sup>							
	5.6 Nickel- and cobalt alloys	< 1300 N/mm <sup>2</sup>							
	5.7 High temperature alloys	< 1300 N/mm <sup>2</sup>							
	5.8 Nickel-cobalt-(chrome-) alloys	< 1400 N/mm <sup>2</sup>							
	5.9 Pure Titanium	< 900 N/mm <sup>2</sup>							
	5.10 Titanium alloys	< 700 N/mm <sup>2</sup>	70-100	0,04-0,08	70-100	0,01-0,02	0,01-0,025	140-160	0,15-0,20
	5.11 Titanium alloys	< 1200 N/mm <sup>2</sup>	60-90	0,04-0,08	60-90	0,01-0,02	0,01-0,025	120-140	0,12-0,18
<b>H</b>	6.1 Hardened steel	< 45 HRc	80-100	0,04-0,12	80-100	0,01-0,02	0,01-0,025	80-100	0,04
	6.2	46-55 HRc	80	0,04-0,12	80	0,01-0,02	0,01-0,025	70-90	0,04
	6.3	56-60 HRc						60-80	0,03
	6.4	61-65 HRc						50-70	0,03
	6.5	65-70 HRc						40-60	0,02

\* The indicated feed values apply only with circular bringing in loop. During linear bringing in movement the feed motion amounts to max. 30%

	Axial Grooving				CT-Counterboring					TrioCUT Drill Milling		
	P	FKN	TINAMATIC		7xD Carbide shaft	6xD Steel shaft	3xD Carbide shaft	3xD Steel shaft		TINAMATIC		
	Vc (m/min.)	Vc (m/min.)	Vc (m/min.)	fz mm	Vc (m/min.)	Vc (m/min.)	Vc (m/min.)	Vc (m/min.)	fz mm	Vc (m/min.)	fz mm	
1.1	100-125		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4	
1.2	100-125		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4	
1.3	100-125		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4	
1.4	100-125		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-220	0,2-0,4	
1.5	100-125		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-260	0,2-0,4	
1.6	100-125		100-140	0,05-0,12	100-140	50-60	200-300	150-250	0,1	180-220	0,2-0,4	
1.7	100-125		100-140	0,05-0,12	100-140	50-60	150-250	150-250	0,1	180-260	0,2-0,4	
1.8	60-80		60-110	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3	
1.9	70-105		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1	180-260	0,2-0,4	
1.10	60-80		60-110	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3	
1.11	40		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3	
1.12	40		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3	
1.13	40		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3	
1.14	40		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-120	0,15-0,3	
1.15	40		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3	
1.16	40		40-80	0,05-0,12	100-140	50-60	150-250	150-250	0,1	100-150	0,15-0,3	
2.1	50-70		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1			
2.2	70-105		120-150	0,05-0,12	100-140	50-60	150-250	150-250	0,1			
2.3	50-70		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1	130-180	0,2-0,4	
2.4	50-70		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1			
2.5	50-70		50-90	0,05-0,12	100-140	50-60	150-250	150-250	0,1			
2.6	50-70		80-100	0,05-0,12	100-140	50-60	150-250	150-250	0,1	80-100	0,15-0,3	
2.7				0,05-0,12	40-90	40-60	40-90	40-90	0,1			
3.1		50	60-80	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
3.2		40	60-70	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
3.3		40	60-70	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
3.4		40	50-60	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
3.5		50	80-100	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
3.6		40	60-70	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
3.7		50	80-100	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
3.8		40	60-70	0,05-0,12	100-140	50-60	150-280	150-200	0,1	130-200	0,2-0,4	
4.1		240	200-450	0,05-0,12	100-140	50-60	150-280	150-200	0,1	400-600	0,2-0,4	
4.2		105	260-340	0,05-0,12	100-140	50-60	150-280	150-200	0,1	400-600	0,2-0,4	
4.3					100-140	50-60	150-280	150-200	0,1			
4.4												
4.5												
4.6		125	50-140	0,05-0,12	100-140	50-60	150-280	150-200	0,1			
4.7		125	50-140	0,05-0,12	100-140	50-60	150-280	150-200	0,1			
4.8		105	40-100	0,05-0,12	100-140	50-60	150-280	150-200	0,1			
4.9												
4.10												
4.11		200-250	200-450	0,05-0,12	100-140	50-60	150-280	150-200	0,1			
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10					40-90	40-60	40-90	40-90	0,1			
5.11					40-90	40-60	40-90	40-90	0,1			
6.1												
6.2												
6.3												
6.4												
6.5												





# Material Examples Steel

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm <sup>2</sup>	Hardness HB	AISI / SAE / ASTM
Unalloyed steel ≤ 800 N/mm <sup>2</sup>	Constructional steel	St37-3	1.0116	370 - 450	110 - 130	A 264
		St52-3	1.0570	450 - 680	140 - 210	
		St60-2	1.0060	600 - 720	180 - 210	A 572
	Carbon steel	C10	1.0301	490 - 780	150 - 230	M 1010
		C22	1.0402	470 - 650	140 - 190	1020
		C35	1.0501	550 - 780	170 - 230	1035
		C40	1.0511	600 - 800	180 - 240	1040
	Machining steel	35S 20	1.0726	510 - 880	150 - 260	1140
		9S 20	1.0711	370 - 450	110 - 130	
		9SMn 28	1.0715	390 - 580	110 - 170	1213
		9SMn 36	1.0736	390 - 800	110 - 240	1215
		9SMnPb 28	1.0718	380 - 810	110 - 240	12L13
		9SMnPb 36	1.0737	390 - 800	110 - 240	12L14
	Case hardened steel	13Cr 3	1.7012	500 - 800	160 - 240	
		16MnCr 5	1.7131	500 - 700	160 - 210	5115
	Quenched steel	C15	1.0401	600 - 900	180 - 270	1015
Unalloyed steel ≤ 1000 N/mm <sup>2</sup>	Constructional steel	Cf53	1.1213	650 - 800	190 - 240	1050
		Ck45	1.1191	650 - 850	190 - 250	1045
		Ck55	1.1203	700 - 950	210 - 280	1055
		Ck60	1.1221	750 - 1000	220 - 300	1060
		15Cr 3	1.7015	690 - 1000	200 - 300	5015
		15CrMo 5	1.7262	500 - 850	150 - 250	
		25CrMo 4	1.7218	500 - 850	150 - 250	4130
		32CrMo 12	1.7361	500 - 850	150 - 250	
		34Cr 4	1.7033	700 - 1000	210 - 300	5132
		35CrMo 4	1.2330	700 - 1000	210 - 300	4135
		35CrNiMo 6	1.6582	800 - 1000	240 - 300	4340
		40Mn 4	1.1157	800 - 1000	240 - 300	1039
		41Cr 4	1.7035	800 - 1000	240 - 300	5140
		41CrMo 4	1.7223	800 - 1000	240 - 300	4140
		42CrMo 4	1.7225	800 - 1000	240 - 300	4140
		47CrMo 4	1.2332	800 - 1000	240 - 300	4142
		C35 E	1.1181	550 - 780	170 - 240	1035
		C45	1.0503	650 - 850	190 - 250	1045
		C55	1.0535	700 - 950	210 - 280	1055
	C60	1.0601	750 - 1000	220 - 300	1060	
	Cf35	1.1183	540 - 780	160 - 230	1035	
	Ck22	1.1151	470 - 650	150 - 200	1020	
	Ck25	1.1158	500 - 700	150 - 210	1025	
	Case hardened steel	14NiCr 14	1.5752	880 - 1000	260 - 300	3310
		16MnCr 5	1.7131	780 - 1000	230 - 300	5116
		Ck15	1.1141	590 - 880	180 - 260	1015
Unalloyed and alloyed steel ≤ 1200 N/mm <sup>2</sup>	Case hardened steel	14NiCr 14	1.5752	1000-1280	300 - 380	3310
		16MnCr 5 V	1.7131	1000-1200	300 - 360	5117
		17CrNiMo 6	1.6587	1200-1400	320 - 410	
	Nitriding steel	31CrMio V 9	1.8519	1000-1250	300 - 370	
		35CrNiMo 6	1.6582	1000-1200	300 - 360	4340
		39CMoV 13 9	1.8523	1000-1200	300 - 380	

# Material Examples Steel

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm <sup>2</sup>	Hardness HB	AISI / SAE / ASTM		
Unalloyed and alloyed steel ≤ 1200 N/mm <sup>2</sup>	Quenched steel	100Cr 6	1.3505	1000-1200	300 - 380	52100		
		25CrMo 4	1.7218	1000-1100	300 - 330	4130		
		30CrNiMo 8	1.6580	1000-1200	300 - 360			
		32CrMo 12	1.7361	1000-1100	300 - 330			
		34Cr 4	1.7033	1000-1100	300 - 330	5132		
		40Mn 4	1.1157	1000-1100	300 - 330	1039		
		41CrMo 4	1.7223	1000-1200	300 - 360	4140		
		42CrMo 4	1.7225	1000-1200	300 - 380	4141		
		Cold work tool steel	100Cr 6	1.2067	1000-1200	250 - 360	L3	
	100MnCrW 4		1.2510	1000-1200	250 - 360	1		
	100V 1		1.2833	1000-1200	250 - 360	W210		
	115CrV 3		1.2210	1000-1200	250 - 360	L2		
	50CrV 4		1.8159	1000-1200	250 - 360	6150		
	58CrV 4		1.8161	1000-1200	250 - 360			
	60WCrV 7		1.2550	1000-1200	250 - 360	S1		
	90MnCrV 8		1.2842	1000-1200	250 - 360	2		
	S10-4-3-10		1.3207	1000-1200	250 - 360			
	X100 CrMoV 5 1		1.2363	1000-1200	250 - 360	A2		
	X165 CrMoV 12		1.2601	1000-1200	250 - 360			
	X210 Cr12		1.2080	1000-1200	250 - 360	D3		
	X210 CrW 12		1.2436	1000-1200	250 - 360			
	X50 CrMoW 9 11		1.2631	1000-1200	250 - 360			
	Hot work tool steel		35NiCrMo 16	1.2766	1000-1200	250 - 360		
		40CrMnMo 7	1.2311	1000-1200	250 - 360			
		45WCrV 7	1.2542	1000-1200	250 - 360	S1		
		55NiCrMoV 6	1.2713	1000-1200	250 - 360	L6		
		60NiCrMoV 12 4	1.2743	1000-1200	250 - 360			
		X30WCrV 5 3	1.2567	1000-1200	250 - 360			
		30WCrV 9 3	1.2581	1000-1200	250 - 360	H21		
		X32 CrMoV 3 3	1.2365	1000-1200	250 - 360	H10		
X36CrMo 17		1.2316	1000-1200	250 - 360				
X38CrMoV 5 1		1.2343	1000-1200	250 - 360	H11			
X40CrMoV 5 1		1.2344	1000-1200	250 - 360	H13			
X42Cr 13		1.2083	1000-1200	250 - 360	420			
Unalloyed and alloyed steel ≥ 1200 N/mm <sup>2</sup>		Heat resistant steel	35CrNiMo 6	1.6582	1200-1400	380 - 410	4340	
			NiCr19 CoMo	2.4973	1200-1320	360 - 380		
			X5NiCrTi 26 15	1.4980	1100-1400	320 - 410		
	Tool steel	50CrV 4	1.8159	1200-1400	350 - 410	6145		
		56NiCrMoV 7	1.2714	1200-1400	350 - 410			
		X155CrVMo 12 1	1.2379	1200-1400	350 - 410	D2		
		X210CrW 12	1.2436	1200-1400	350 - 410			
		Stainless steel (V2A)	standard alloyed	GX10CrNi 18-8	1.4312	450 - 1100	130 - 320	CF-8
				GX20Cr 14	1.4027	450 - 1100	130 - 320	
GX5CrNi 19-10	1.4308			450 - 1100	130 - 320			
GX8CrNi 13	1.4008			450 - 1100	130 - 320			
X10Cr 13	1.4006			450 - 1100	130 - 320	410		
X10CrNiS 18-9	1.4305			400 - 850	120 - 250	303		
X105CrMo 17	1.4125			450 - 1100	130 - 320	440C		
X12CrMoS 17	1.4104			400 - 850	120 - 250	430F		
X12CrNi 17-7	1.4310			450 - 1100	130 - 320	301		
X12CrS 13	1.4005			450 - 1100	130 - 320	416		

# Material Examples Steel

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm <sup>2</sup>	Hardness HB	AISI / SAE / ASTM	
Stainless steel (V2A)	standard alloyed	X15Cr 13	1.4024	450 - 1100	130 - 320	304L  431 431 302 420F  CA6-NM 305 304 405 434 403 430	
		X2CrNi 18-9	1.4306	450 - 1100	130 - 320		
		X20Cr 13	1.4021	450 - 1100	130 - 320		
		X17CrNi 16-2	1.4057	450 - 1100	130 - 320		
		X22CrNi 17	1.4057	450 - 1100	130 - 320		
		X3CrNiN 17-8	1.4319	450 - 1100	130 - 320		
		X30Cr 13	1.4028	450 - 1100	130 - 320		
		X39Cr 13	1.4031	450 - 1100	130 - 320		
		X46Cr13	1.4034	450 - 1100	130 - 320		
		X5CrNi 13-4	1.4313	450 - 1100	130 - 320		
		X5CrNi 18-12	1.4303	450 - 1100	130 - 320		
		X5CrNi 18 10	1.4301	450 - 1100	130 - 320		
		X6CrAl 13	1.4002	450 - 1100	130 - 320		
		X6CrMo 17-1	1.4113	450 - 1100	130 - 320		
		X6 Cr 13	1.4000	450 - 1100	130 - 320		
		X6Cr 17	1.4016	450 - 1100	130 - 320		
Stainless steel with high chrome-nickel rate (V4A)	high alloyed	GX5CrNiMo 19-11	1.4408	450 - 1100	130 - 320	CF-8M	
		GX5CrNiNb 19-11	1.4552	450 - 1100	130 - 320	UNSN08904 321 443 316L 317L 316LN	
		X1NiCrMoCuN 25-20-5	1.4539	450 - 1100	130 - 320		
		X6CrNiTi 18-10	1.4541	450 - 1100	130 - 320		
		X2CrMoTi 18-2	1.4521	450 - 1100	130 - 320		
		X2CrNiMo 17 13 2	1.4404	450 - 1100	130 - 320		
		X2CrNiMo 18 16 4	1.4438	450 - 1100	130 - 320		
		X2CrNiMoN 17 12 2	1.4406	450 - 1100	130 - 320		
		X2CrNiMo 17-13-2	1.4429	450 - 1100	130 - 320		
		X2CrNiMoN 22-5-3	1.4462	450 - 1100	130 - 320		
		X4CrNiMoN 27-5-2	1.4460	450 - 1100	130 - 320		
		X7CrNiAl 17-4	1.4542	450 - 1100	130 - 320	630	
		X5CrNiMo 17-12-2	1.4401	450 - 1100	130 - 320	316	
		X5CrNiMo 17-13-3	1.4436	450 - 1100	130 - 320	348 316Ti 347 409 439	
		X5CrNiNb 18-10	1.4546	450 - 1100	130 - 320		
		X6CrNb 17	1.4511	450 - 1100	130 - 320		
		X6CrNiMoTi 17-12-2	1.4571	450 - 1100	130 - 320		
		X6CrNiNb 18-10	1.4550	450 - 1100	130 - 320		
		X6CrTi 12	1.4512	450 - 1100	130 - 320		
	X6CrTi 17	1.4510	450 - 1100	130 - 320			
	High-speed steel		S12-1-4-5	1.3202			T15
			S18-0-1	1.3355			T1
			S18-1-2-10	1.3265			T5
S18-1-2-5			1.3255			T4	
S2-10-1-8			1.3247			M42	
S2-9-1			1.3346			M1	
S2-9-2			1.3348			M7	
S2-9-2-8			1.3249			M34	
S5-5-3			1.3344			M3 Class2 M2	
S6-5-2			1.3343				
S6-5-2-5	1.3243			M41 M3			
S7-4-2-5	1.3246						
SC6-5-2	1.3342						

## Material Examples Cast Iron, Nonferrous Metals

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm <sup>2</sup>	Hardness HB	AISI / SAE / ASTM
Cast iron	Grey cast iron	GG10	0.6010	150 - 500	50 - 150	A48-20 B
		GG15	0.6015	150 - 500	50 - 150	A48-25 B
		GG20	0.6020	150 - 500	50 - 150	A48-30 B
		GG25	0.6025	150 - 500	50 - 150	A48-35 B
		GG30	0.6030	150 - 500	50 - 150	A48-45 B
		GG35	0.6035	150 - 500	50 - 150	A48-50 B
		GG40	0.6040	150 - 500	50 - 150	A48-55 B
	Spherulitic graphite iron	GGG40	0.7040	500 - 700	150 - 200	60-40-18
		GGG50	0.7050	500 - 700	150 - 200	80-55-06
		GGG60	0.7060	500 - 700	150 - 200	80-55-06
		GGG70	0.7070	500 - 700	150 - 200	100-70-03
	Malleable cast iron	GTW35-04	0.8035	500 - 700	150 - 200	

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm <sup>2</sup>	Hardness HB	AISI / SAE / ASTM	
Aluminium, Cooper, Cooper alloys	Aluminium, unalloyed	Al99	3.0205	200 - 350	60 - 100	1200	
		Al99.9	3.0305	200 - 350	60 - 100	1090	
		E-Al	3.0257	200 - 350	60 - 100	1350A	
	Cooper, unalloyed	SF-Cu	2.0090	250 - 350	80 - 100	C 12200	
	Messing, long-chipping	CuZn 37	2.0321	400 - 700	120 - 200	C 27400	
	Bronze, low density	G-CuSn 6 ZnNi	2.1093	400 - 700	120 - 200	C 92410	
	Red bronze	G-CuSn 5 ZnPb	2.1096	400 - 700	120 - 200	C 83600	
	Aluminium, alloyed	Aluminium, alloyed	G-AlSi 12	3.2581	300 - 600	90 - 180	A413
			G-AlSi 10 MgCu	3.2383	300 - 600	90 - 180	
			G-AlSi 12 Cu	3.2583	300 - 600	90 - 180	413.1
			G-AlSi 5 Mg	3.2341	300 - 600	90 - 180	
			G-AlSi 6 Cu4	3.2151	300 - 600	90 - 180	319
			G-AlSi 7 Mg	3.2371	300 - 600	90 - 180	A356.2
			G-AlSi 8 Cu 3	3.2161	300 - 600	90 - 180	380
			G-AlSi 9 Mg	3.2373	300 - 600	90 - 180	
			G-CuAl 11 Ni	2.0975	400 - 850	120 - 250	
			G-CuAl 11 Ni	2.0975	400 - 850	120 - 250	
	Bronze hard	Bronze hard	CuSn & Zn 6	2.1080	400 - 700	120 - 200	
			CuSn & Zn 6	2.1080	400 - 700	120 - 200	
Aluminium special alloys	Aluminium special alloys	AlCuMg1	3.1325	300 - 600	90 - 180	2017A	
		AlMg 1	3.3315	300 - 600	90 - 180	5005A	
		AlMg 1.5	3.3316	300 - 600	90 - 180	5050B	
		AlMg 1 SiCu	3.3211	300 - 600	90 - 180	6061	
		AlMg 2.5	3.3523	300 - 600	90 - 180	5052	
		AlMg 3	3.3535	300 - 600	90 - 180	5754	
		AlMg 5	3.3555	300 - 600	90 - 180	5056A	

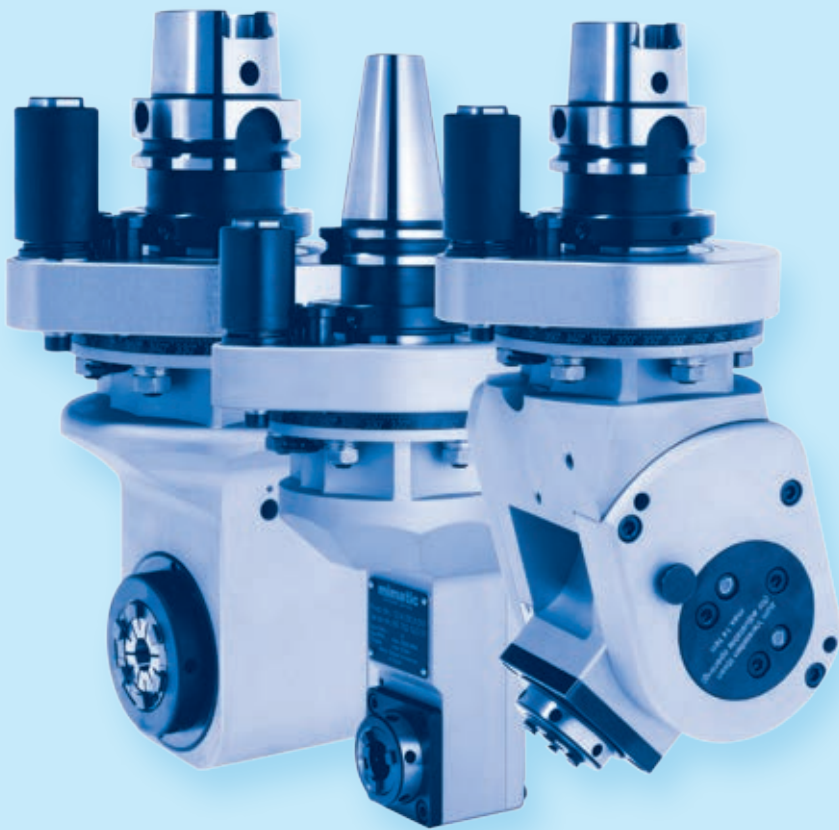
## Material Examples Nonferrous Metals

Material subgroup	Identifier	Norm marking	DIN-Number	Tensile strength N/mm <sup>2</sup>	Hardness HB	AISI / SAE / ASTM
Aluminium special alloys	Aluminium special alloys	AlMgSi 0.5	3.3206	300 - 600	90 - 180	6060
		AlMgSi 1	3.2315	300 - 600	90 - 180	6082
		AlMn 1 Mg 0.5	3.0525	300 - 600	90 - 180	3005
		AlMnCu	3.0517	300 - 600	90 - 180	3003
		AlZnMgCu 0.5	3.4345	300 - 600	90 - 180	7022
		AlZnMgCu 1.5	3.4365	300 - 600	90 - 180	7045
		G-ALMg 5	3.3561	300 - 600	90 - 180	514.1
		G-ALMg 5Si	3.3261	300 - 600	90 - 180	
Cooper alloys	Messing, short-chipping	CuZn39Pb 2	2.0380			
		CuZn40Mn1Pb	2.0580			
		CuZn44Pb 2	2.0410			
Nickel alloys	Nickel alloys	Hastelloy C 276	2.4819			
		Hastelloy C 4	2.4610			
		Inconel 718	2.4668			
		Nimonec 75	2.4630			
Titan alloys	Titan alloys	TiAl 5 Sn 2	3.7115			
		TiAl 6V 4	3.7165			
Cu-Al-Fe alloys	Chilled cast iron	Ampco 21				
		Ampco 22				
		Ampco 25				
		Ampco 26				
Thermoplastic	Thermoplastic	Polyamid				
		Polystyrol				
		Polyvenylchlorid				
		Ultramid				
Thermosetting plastic and fibre-reinforced plastic	Thermosetting plastic	Bakelid				
		Ferrozell				
		Pertinax				
	Fibre-reinforced plastic	CFK		190 - 210	60 - 70	
		GFK				

**Angle Heads - Monoblock and Modular  
for CNC Machining Centers**

**Monoblock**

Pages 188-241



**Modular**

Pages 242-259



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

# Table of Contents – Monoblock Angle Heads

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM

## DIN 69871

**Selection by  
Clearance Diameter E  
and  
Milling Depth L<sub>1</sub>**

Angle Head 90°



Double  
Angle Head 90°



Angle Head 90°  
Offset Type



Angle Head 90°  
Offset Slim Type



Angle Head,  
Adjustable 0-98°



SK 40				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
1		ER 16		91	80													
			✓	96	80													
3		ER 20											75	80		-	91	
			✓													-	91	
5		ER 25		110	80	200	125	80	201	103	80	202	82	76	203	-	96	204
			✓	120	80		125	80		103	80		82	76		-	96	
				138	80		200	80		130	80		125	76		-	96	
			mi	✓	146		80	200		80	130		80	125		76	-	
7		ER 32		145	80		152	80		128	100							
			✓	155	80		152	80		128	100							
				172	80		220	80		150	100							
			mi	✓	178	80		220	80		150	100						

SK 50				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
5		ER 25		110	75		125	70		103	79		82	76		-	96	
			✓	120	75		125	70		103	79		82	76		-	96	
				138	75		200	70		133	79		125	76		-	96	
			mi	✓	146	75		200	70		133	79		125	76		-	96
7		ER 32		145	75	205	152	70	206	128	94	207	102	100	208	-	108	209
			✓	155	75		152	70		128	94		102	100		-	108	
				172	75		220	70		152	94		135	100		-	108	
			mi	✓	178		75	220		70	152		94	135		100	-	
9		ER 40		195	105		210	109		140	152							
			✓	195	105		210	109		140	152							
				224	105		250	109		165	152							
			mi	✓	224	105		250	109		165	152						



# Table of Contents – Monoblock Angle Heads

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM

## DIN 69893 A

Selection by  
Clearance Diameter E  
and  
Milling Depth L<sub>1</sub>

Angle Head 90°



Double  
Angle Head 90°



Angle Head 90°  
Offset Type



Angle Head 90°  
Offset Slim Type



Angle Head,  
Adjustable 0-98°



HSK 63				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
1		ER 16		91	80													
			✓	96	80													
3		ER 20											75	80		-	91	
			✓													-	91	
5		ER 25		110	80	210	125	80	211	103	80	212	82	76	213	-	96	214
			✓	120	80		125	80		103	80		82	76		-	96	
				138	80		200	80		130	80		125	76		-	96	
			mi	✓	146		80	200		80	130		80	125		76	-	
7		ER 32		145	80		152	80		128	100							
			✓	155	80		152	80		128	100							
				172	80		220	80		150	100							
			mi	✓	178	80		220	80		150	100						

HSK 100				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
5		ER 25		110	75		125	70		103	79		82	76		-	96	
			✓	120	75		125	70		103	79		82	76		-	96	
				138	75		200	70		133	79		125	76		-	96	
			mi	✓	146	75		200	70		133	79		125	76		-	96
7		ER 32		145	75	215	152	70	216	128	94	217	102	100	218	-	109	219
			✓	155	75		152	70		128	94		102	100		-	109	
				172	75		220	70		152	94		135	100		-	109	
			mi	✓	178		75	220		70	152		94	135		100	-	
9		ER 40		195	109		210	109		140	152							
			✓	195	109		210	109		140	152							
				224	109		250	109		165	152							
			mi	✓	224	109		250	109		165	152						

# Table of Contents – Monoblock Angle Heads

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM

## MAS-BT JIS 6339

Selection by  
Clearance Diameter E  
and  
Milling Depth L<sub>1</sub>

Angle Head 90°

Double  
Angle Head 90°

Angle Head 90°  
Offset Type

Angle Head 90°  
Offset Slim Type

Angle Head,  
Adjustable 0-98°



MAS-BT 40				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
1		ER 16		91	80													
			✓	96	80													
3		ER 20											75	80		-	91	
			✓													-	91	
5		ER 25		110	80	220	125	80	221	103	80	222	82	76	223	-	96	224
			✓	120	80		125	80		103	80		82	76		-	96	
				138	80		200	80		130	80		125	76		-	96	
			mi	✓	146		80	200		80	130		80	125		76	-	
7		ER 32		145	80		152	80		128	100							
			✓	155	80		152	80		128	100							
				172	80		220	80		150	100							
			mi	✓	178	80		220	80		150	100						

MAS-BT 50				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
5		ER 25		110	75		125	70		103	79		82	76		-	96	
			✓	120	75		125	70		103	79		82	76		-	96	
				138	75		200	70		133	79		125	76		-	96	
			mi	✓	146	75		200	70		133	79		125	76		-	96
7		ER 32		145	75	225	152	70	226	128	94	227	102	100	228	-	109	229
			✓	155	75		152	70		128	94		102	100		-	109	
				172	75		220	70		152	94		135	100		-	109	
			mi	✓	178		75	220		70	152		94	135		100	-	
9		ER 40		195	109		210	109		140	152							
			✓	195	109		210	109		140	152							
				224	109		250	109		165	152							
			mi	✓	224	109		250	109		165	152						

# Table of Contents – Monoblock Angle Heads

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM

## ANSI-CAT

Selection by  
Clearance Diameter E  
and  
Milling Depth L<sub>1</sub>

Angle Head 90°

Double  
Angle Head 90°

Angle Head 90°  
Offset Type

Angle Head 90°  
Offset Slim Type

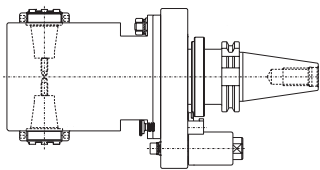
Angle Head,  
Adjustable 0-98°



ANSI-CAT 40				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
1		ER 16		91	80													
			✓	96	80													
3		ER 20											75	80		-	91	
			✓														-	91
5		ER 25		110	80	230	125	80	231	103	80	232	82	76	233	-	96	234
			✓	120	80		125	80		103	80		82	76		-	96	
				138	80		200	80		130	80		125	76		-	96	
			✓	146	80		200	80		130	80		125	76		-	96	
7		ER 32		145	80		152	80		128	100							
			✓	155	80		152	80		128	100							
				172	80		220	80		150	100							
			✓	178	80		220	80		150	100							

ANSI-CAT 50				SW			DW			ZW			ZWS			WS		
Size		Tool holder	Coolant	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page	E Ø mm	L <sub>1</sub> mm	Page
0		ER 11											50	38				
5		ER 25		110	75		125	70		103	79		82	76		-	96	
			✓	120	75		125	70		103	79		82	76		-	96	
				138	75		200	70		133	79		125	76		-	96	
			✓	146	75		200	70		133	79		125	76		-	96	
7		ER 32		145	75	235	152	70	236	128	94	237	102	100	238	-	109	239
			✓	155	75		152	70		128	94		102	100		-	109	
				172	75		220	70		152	94		135	100		-	109	
			✓	178	75		220	70		152	94		135	100		-	109	
9		ER 40		195	100		210	105		140	152							
			✓	195	100		210	105		140	152							
				224	100		250	105		165	152							
			✓	224	100		250	105		165	152							

# Table of Contents – Monoblock Angle Heads

Type	DIN	Shank	Page
<b>SW</b>  <b>Angle Head 90°</b> Gear Ratio $i = 1:1$ Coolant supply: without / external / internal		SK 40	200
		SK 50	205
		HKS 63	210
		HSK 100	215
		CAT 40	220
<b>DW</b>  <b>Double Angle Head 90°</b> Gear Ratio $i = 1:1$ Coolant supply: without / external		SK 40	201
		SK 50	206
		HKS 63	211
		HSK 100	216
		CAT 40	221
<b>ZW</b>  <b>Angle Head 90° Offset type</b> Gear Ratio $i = 1:1$ Coolant supply: without / external / internal		SK 40	202
		SK 50	207
		HKS 63	212
		HSK 100	217
		CAT 40	222
<b>ZWS</b>  <b>Angle Head 90° Offset Slim type</b> Gear Ratio $i = 1:1$ Coolant supply: without / external		SK 40	203
		SK 50	208
		HKS 63	213
		HSK 100	218
		CAT 40	223
<b>WS</b>  <b>Angle Head, adjustable 0-98°</b> Gear Ratio $i = 1:1$ or $1:2,25$ Coolant supply: internal		SK 40	204
		SK 50	209
		HKS 63	214
		HSK 100	219
		CAT 40	224
<b>Angle Head with fixed angle</b>		Available on request.	

## Angle Drilling Heads and Cutter Heads

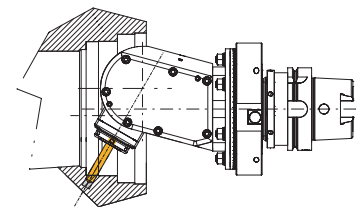
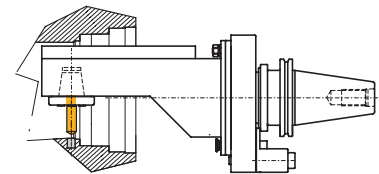
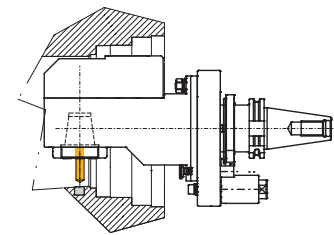
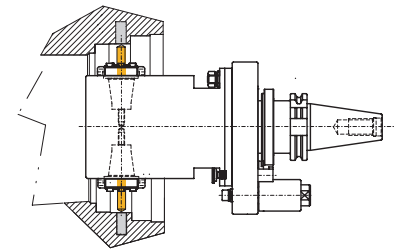
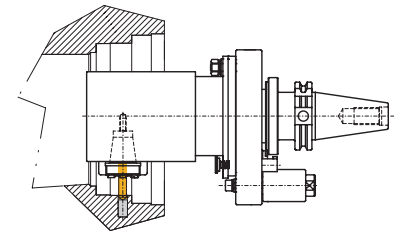
mimatic® has been a reliable partner in project planning and the supply of precision tools worldwide for many years in the field of chip removing production.

In addition to toolholding systems and cutting tools, the company also provides driven tools for both CNC lathes and CNC machining centers to solve customer-specific problems with chip removal.

The company has provided many special purpose solutions for **angle heads and cutter heads** since its foundation in 1974. In doing so, mimatic has always placed special emphasis on **maximum precision, power transmission, operating safety and quality.**

We ensure close cooperation with our customers worldwide, providing advice on all machining problems – even on-site. We realize and implement our solutions on the basis of our **comprehensive standard program or by means of customer-specific special developments and designs.**

Our new standard program of **angle head tools** provides our customers with the means for complete, integrated machining. It is now no longer necessary to repeatedly relocate tools, which means a considerable reduction in production costs, rationalization and the increase in flexibility over the entire production process.



## Features of the mimatic® Angle Heads

mimatic® angle heads increase the efficiency of your production. They allow you to work on inaccessible areas within housings or bores.

The angle heads can be used in all popular machine concepts, such as CNC machining centers with automatic or manual tool change and special-purpose machines with fixed insert. They are optimally designed for the respective machining task.

We use ground bevel gears with helical profile as well as hardened and ground spur gears to ensure smooth operation and high power transmission.

### Versions

- mimatic® angle heads are available in all European and international shank variants:
  - **SK per DIN 69871, ANSI-CAT, MAS-BT and**
  - **HSK to DIN 69893 – Form A**
 other standards and sizes are also available on request
- With **standard torque support according to ISO 9524** (to be adapted by the customer)
- Available on request with 3-point support adapted to the machine and stop block
- Tool changing manual or automatic
- For drilling, reaming, countersinking, threading and milling
- Allows the machining of sections of the workpiece which are otherwise inaccessible (e.g. internal machining)
- A large number of special, customized designs for complex machining problems
- Single, dual or multi-spindle variants are available
- Fixed angles can be made, as opposed to using Adjustables or standard 90 Degree Heads
- Available on request with internal coolant supply via the spindle (70 bar)
- High torque transmission
- Available as standard with **collet chuck model „ER“ according to DIN 6499** or with our modular **„mi“ quick-change tool system** – compatible with all popular tool fittings (collet chucks, Weldon, Whistle-Notch, hydraulic chucks, shrink fit chucks, combi milling arbors, etc.)
- with mimatic® „SYNTAX“ thread quick-change chuck

### mimatic „mi“

#### Modular quick-change tool system



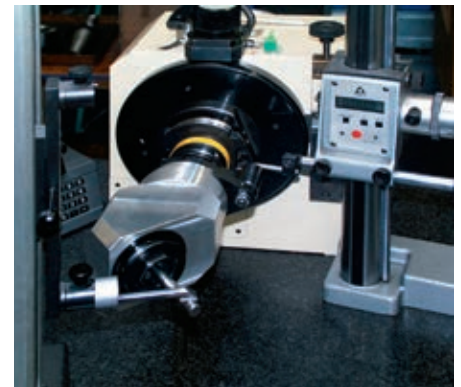
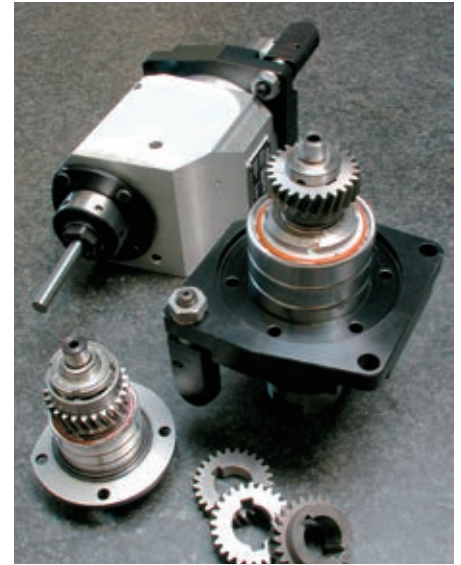
### mimatic „SYNTAX“

#### Tapping quick-change holder



## Design of the Angle Heads

- **High-precision spindle bearing, P4 quality** with medium bias voltage (lifelong lubrication of bearing), suitable for high speeds (up to 15,000 rpm)
- **Stabilized spindle bearing** (inside tool holding spindle, i.e. point of load incidence within the housing, therefore low leverage)
- **Bevel gear sets with helical profile**
- **Permanent lubrication** of the gear with heavy-duty lubricant (low-maintenance)
- Possibilities for **coolant supply**:
  - **without**
  - **external** via coolant pipe
  - **internal** via the tool holding spindle („i.K.“ – package with packing sleeves, hardened upthrust washer, friction-optimized seals and various O-rings)
- Use of **friction-optimized** seals with PTFE sealing lips, for higher speeds, high temperature resistance
- **Output orientation is fully adjustable** (0–360° via the 6 setscrews on the adjusting ring)
- **Angle head can be rotated through 360° and is infinitely variable** – additional 6 x 15° indexations for adjustable angle units
- High speeds up to 15,000 rpm and high torques up to 150 Nm
- The **torque support is designed according to ISO 9524 as standard**. This can be adapted by the customer
- Different **standard stop block** versions are available. If necessary, these are to be adapted and fitted to the machine tool by the customer.



## Performance Values

The torques  $M_{max}$  specified in the tables below refer to shock-free processing (e.g. threaded cutting). For processes involving major shock loads (e.g. milling or multi-edge knocking), a value reduction of up to 50 % and more needs to be taken into account. The values  $n_{max}$  and  $P_{max}$  rendered are guideline values for short-time operation.

The permissible relative operating duration depends

- on the version of the spindle unit (with or without gear)
- on the presence of a cooling system and the type of cooling (external or internal through the tool spindle)
- on the processing torque

At a charge of about 60 % of the maximum values the working life calculated amounts to approx. 2.000 hours. Spindle units with gears produce more noise at higher speeds!

### Operating Instructions

**Initial Start-up:** To ensure long tool life it is important to properly “run-in” the tools. This procedure serves to reduce the internal friction in the driven unit and to evenly distribute the grease in the precision bearings.

- **Max. RPM in the first operation hour should not exceed 70 % of the maximum permissible RPM.**
- **Never run the tool above the maximum permissible torque rate and/or maximum permissible RPM (see also the drawing of the unit).**

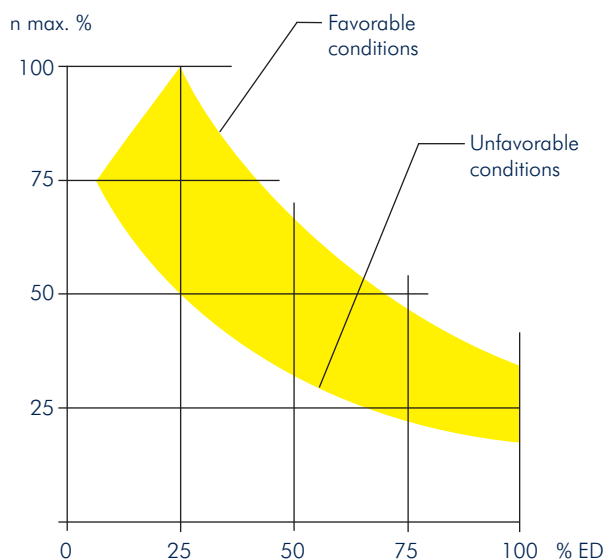
**Tools with internal coolant through the spindle (i.C.):** To avoid premature wear and damage to the seal system we recommend to filter the coolant to 40  $\mu\text{m}$  minimum.

Filter grades of 40  $\mu\text{m}$  worked in operation with very good results. The maximum permissible coolant pressure can be taken from the technical data of the driven toolholder.

Driven Toolholders with internal coolant through the spindle (i.C.) should **never run without coolant**. The coolant should flow through the tool, before the tool drive is switched on. Running in dry condition damages the internal seals.

**Service interval:** The tool life of the driven toolholder depends strongly on the application. Wear parts such as bearings and seals should be exchanged. We recommend to send the tools at least once annually to our service center for cleaning and regreasing. Tools with internal coolant through the spindle should be serviced every 6 months.

### Optimum relative cycle times (guideline values)



### Determination of the maximum permissible cycle times per minute $ED_{max}$

The maximum permissible cycle times per minute may not be under any circumstances exceeded.

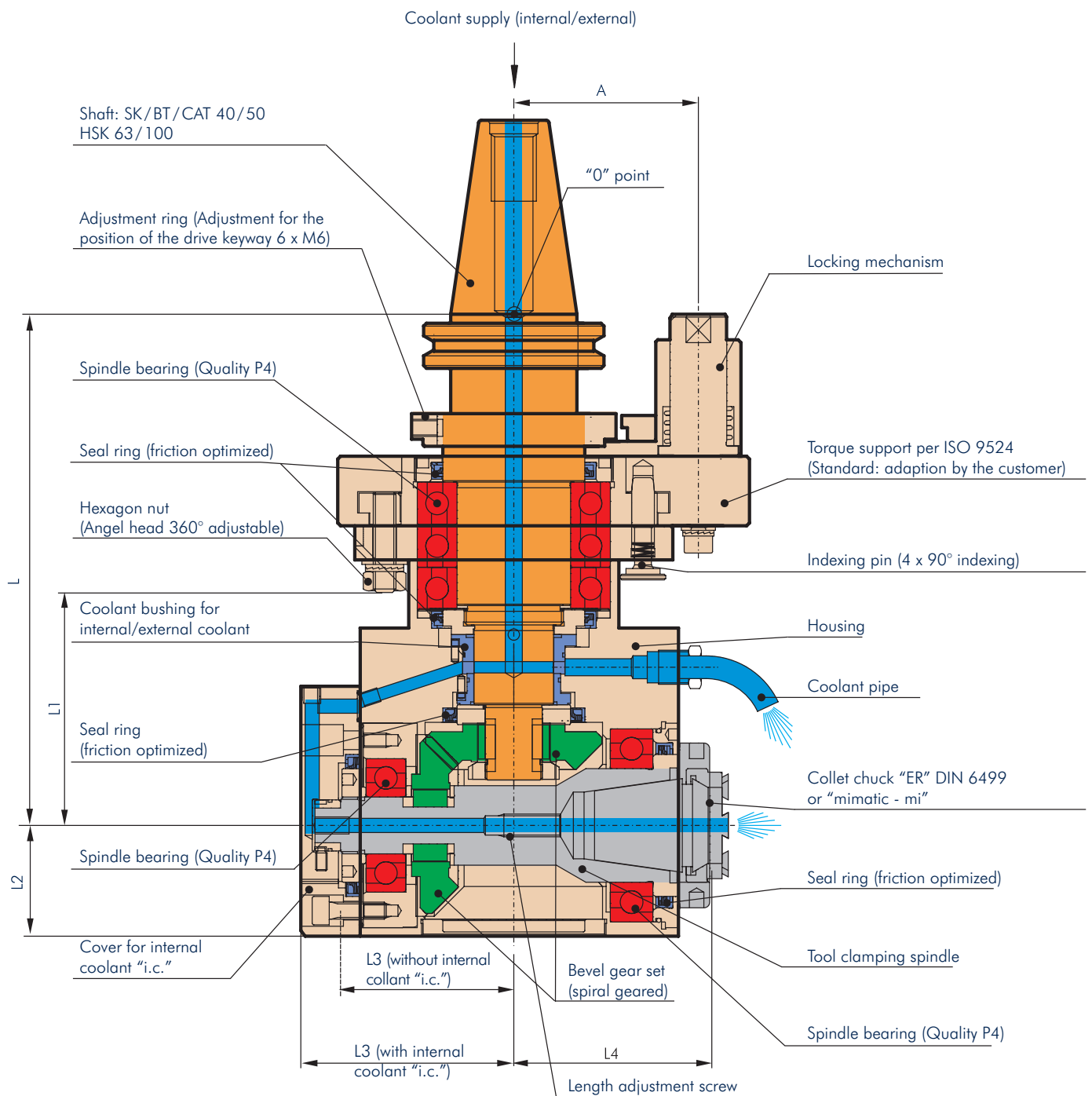
CT max: maximum permissible cycle times in percent per minute (%/min.)



## Features of the Standard Angle Heads

- **Extremely precise Bearing Technology**
- **High Concentricity**
- **High Rigidity**

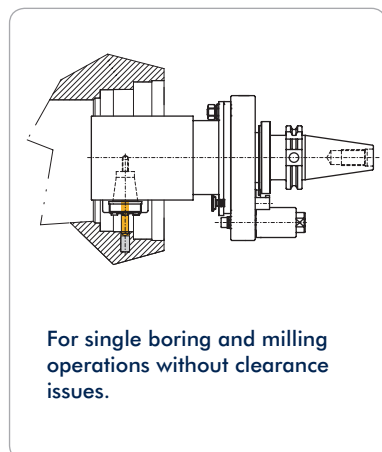
mimatic® angle heads are designed in such a way that they increase the quality of your workpieces and the service life of your tools.



**SK 40**

**SW**

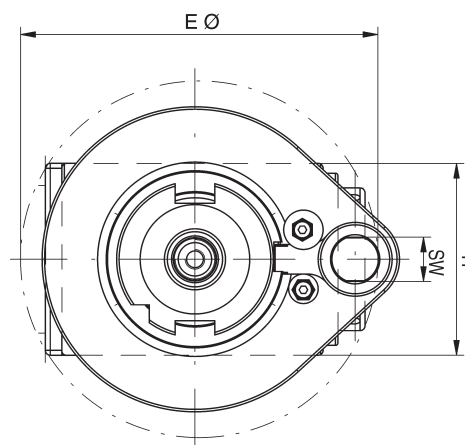
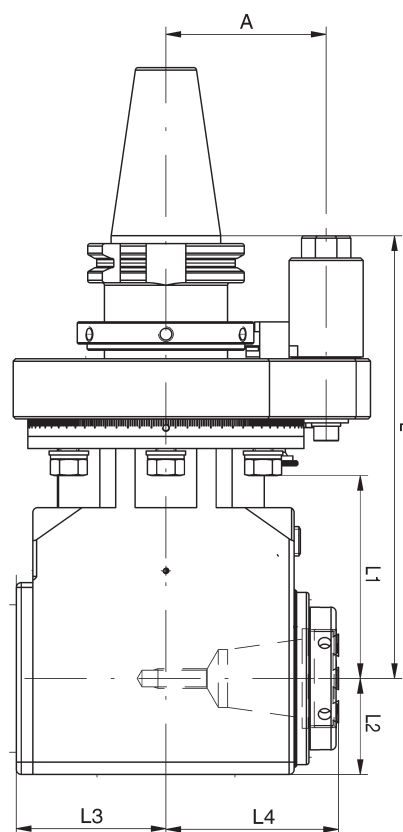
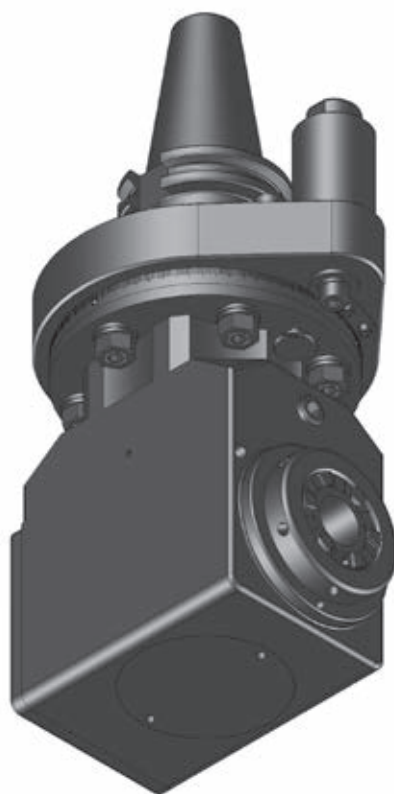
## Angle Head 90°



For single boring and milling operations without clearance issues.



**Attention!**  
Reversal of rotation direction



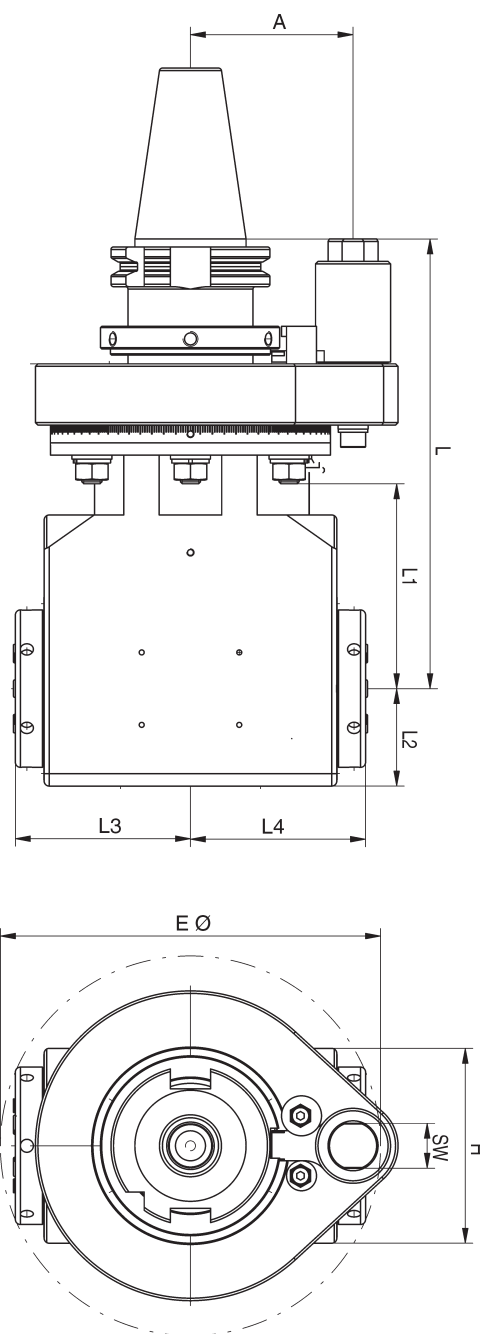
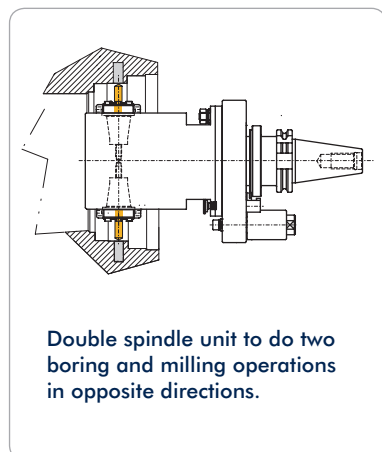
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
1	12 Nm	10.000	i = 1:1	180	80	22	44	65	6,0	18
5	30 Nm	8.000	i = 1:1	180	80	34	68	65	6,5	18
7	70 Nm	6.500	i = 1:1	180	80	39	78	65	8,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
1	ER 16	91	96	29,0	44	45,0	50	105485	105679	105695
5	ER 25	110	120	41,5	52	57,5	63	105493	162767	105507
5	mi 40	138	146	41,5	52	72,0	72	105490	162799	105513
7	ER 32	145	155	61,0	75	70,0	75	135486	105516	105539
7	mi 50	172	178	61,0	75	83,0	83	135453	162790	162791

**SK 40**

**DW**

## Double Angle Head 90°



Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	80	39	78	65	7,5	18
7	70 Nm	6.500	i = 1:1	180	80	39	78	65	8,5	18

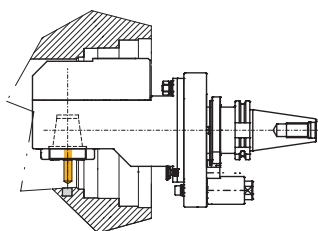
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135710	168317	
5	2 x mi 32	200	200	76,5	76,5	76,5	76,5	173507	162838	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135733	166009	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	105775	174400	

12

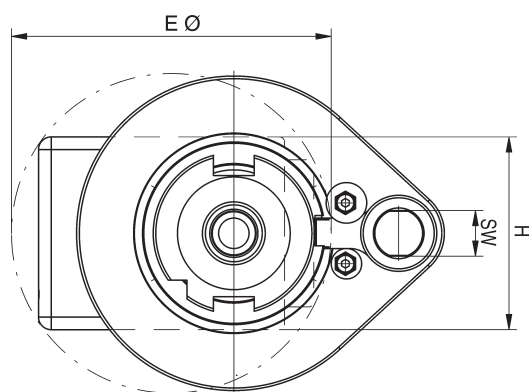
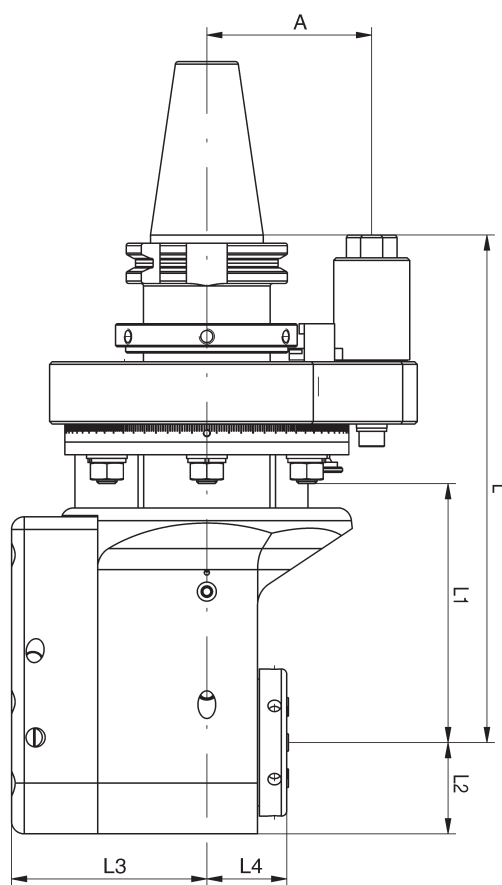
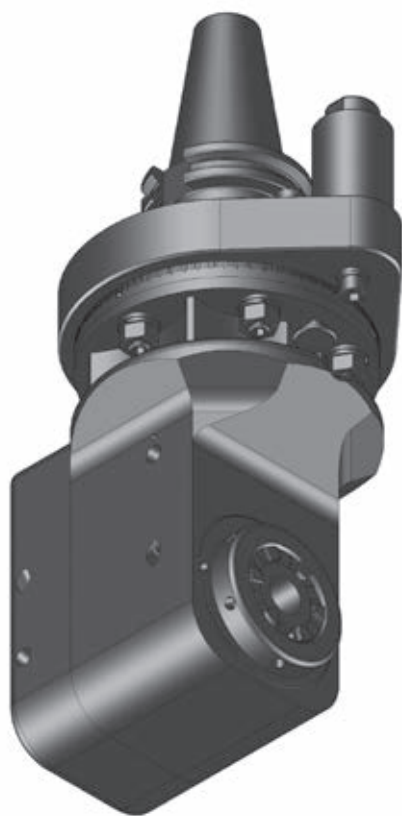
**SK 40**

**ZW**

## Angle Head 90°, Offset Type



Rear offset unit with increased usable tool length and internal coolant is an option.

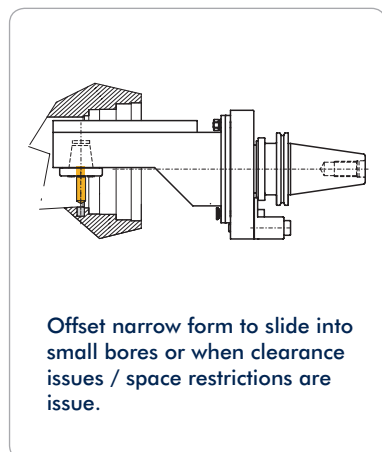


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	80	28,5	57	65	6,5	18
7	70 Nm	6.000	i = 1:1	198	100	38,0	76	65	8,5	18

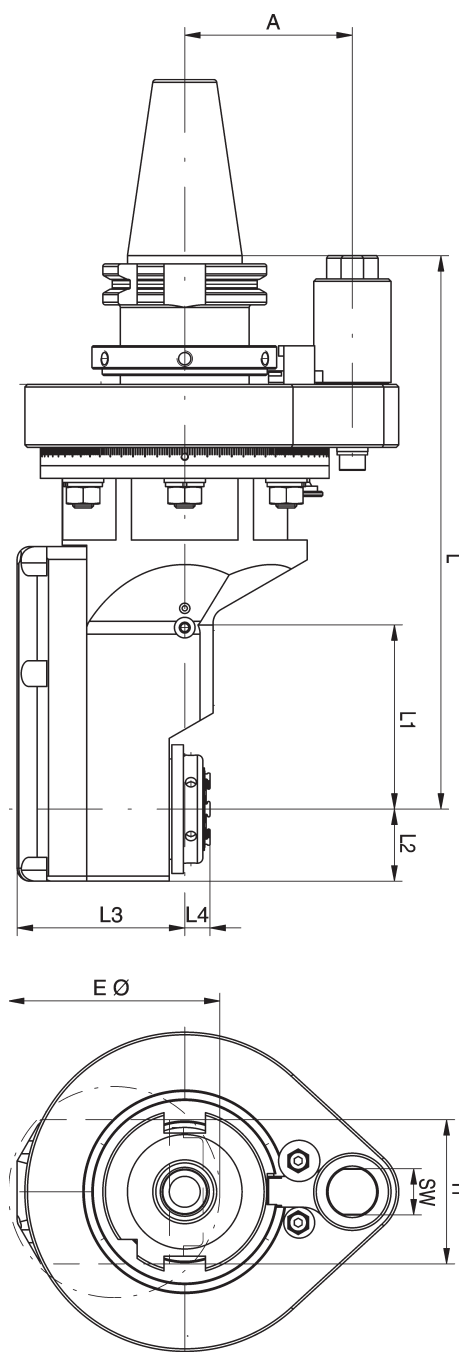
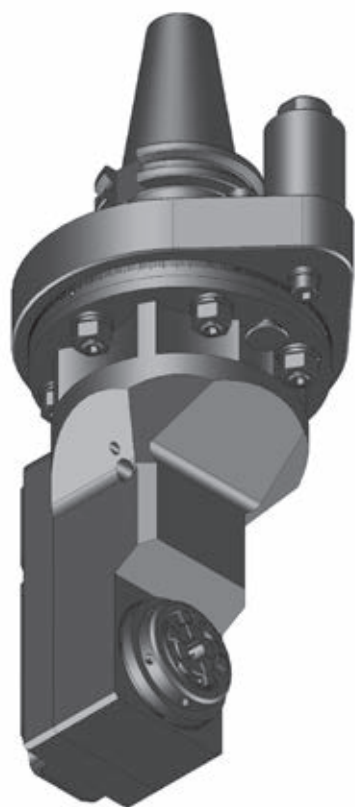
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	57,0	57,0	35,8	41,6	135389	162855	168670
5	mi 40	130	130	57,0	57,0	50,3	50,3	105439	162879	162880
7	ER 32	128	128	77,5	77,5	32,2	38,0	105440	162868	105478
7	mi 50	150	150	77,5	77,5	55,0	55,0	105429	162894	162895

**SK 40** **ZWS**

## Angle Head 90°, Offset Slim Type



**Attention!**  
Reversal of rotation direction



Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	213	38	20	36	65	7,0	18
3	15 Nm	10.000	i = 1:1	225	80	24	48	65	6,0	18
5	30 Nm	8.000	i = 1:1	215	76	28	56	65	6,5	18

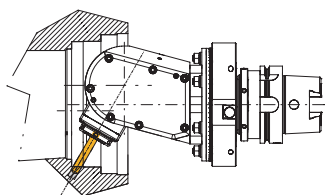
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49,0		-8,0		105631		
3	ER 20	75		54,5		11,2		105665		
3	mi 32	100		54,5		26,0		173535		
5	ER 25	82	82	65,0	65	10,0	10,0	135615	162922	
5	mi 40	125	125	65,0	65	23,5	23,5	135609	162934	

**SK 40**

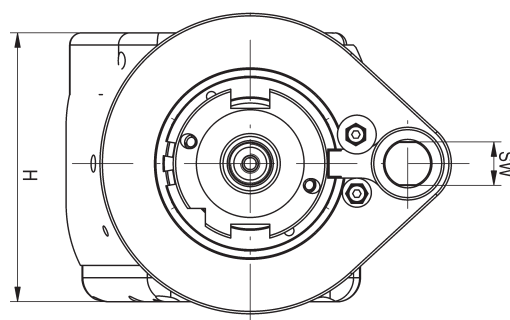
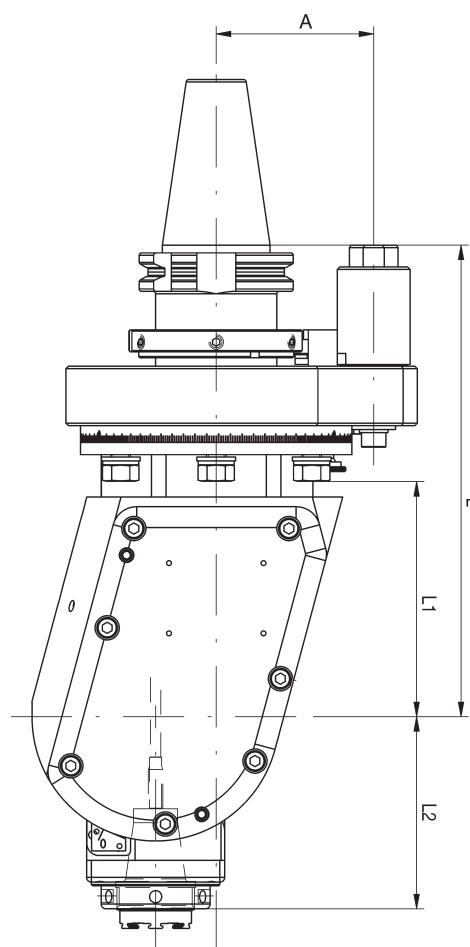
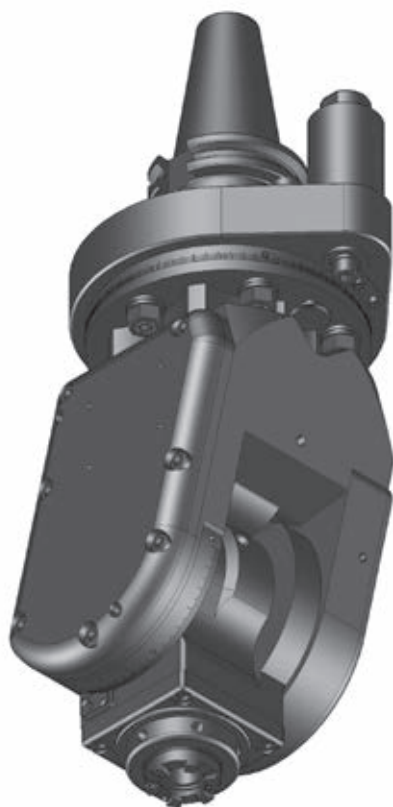
**WS**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » PolyREAM

## Angle Head, Adjustable 0-98°



Adjustable angle unit to do boring and milling applications at any angle.



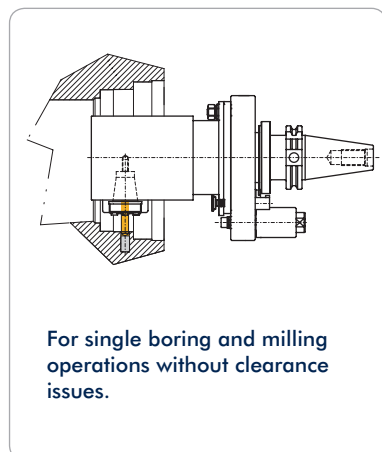
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
3	15 Nm	8.000 / 15.000	i = 1:1 / 1:2,25	189	91	96	65	8,0	18
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	195	96	111	65	9,6	18

Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
3	ER 20	75,0	20	162793	105825	156560	105823
3	mi 32	82,9	20	156561	105832	156562	156563
5	ER 25	84,0	25	174413	105833	156580	105826
5	mi 40	97,0	25	162952	169975	162953	162954

**SK 50**

**SW**

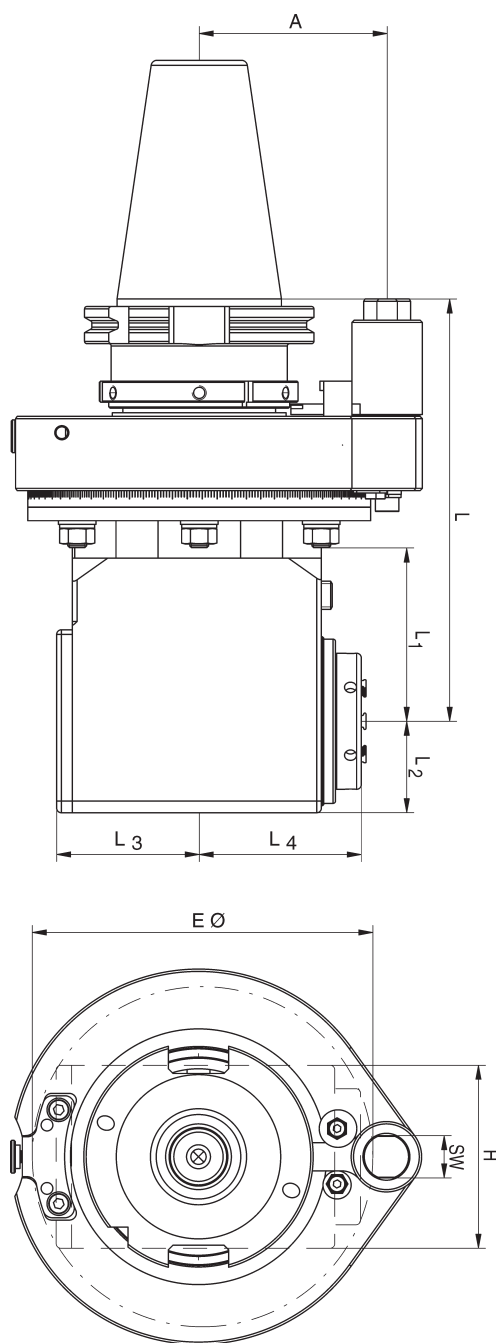
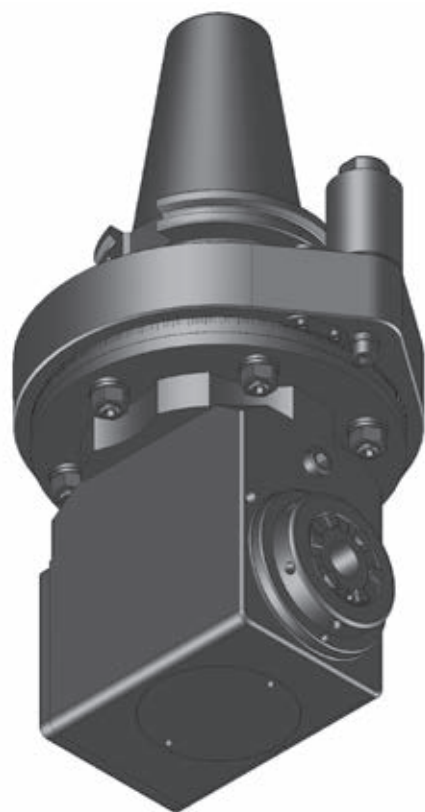
## Angle Head 90°



For single boring and milling operations without clearance issues.



**Attention!**  
Reversal of rotation direction



Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	75	34	68	80	10,5	18
7	70 Nm	6.500	i = 1:1	180	75	39	78	80	12,0	18
9	150 Nm	5.000	i = 1:1	215	105	52	104	80	18,0	18

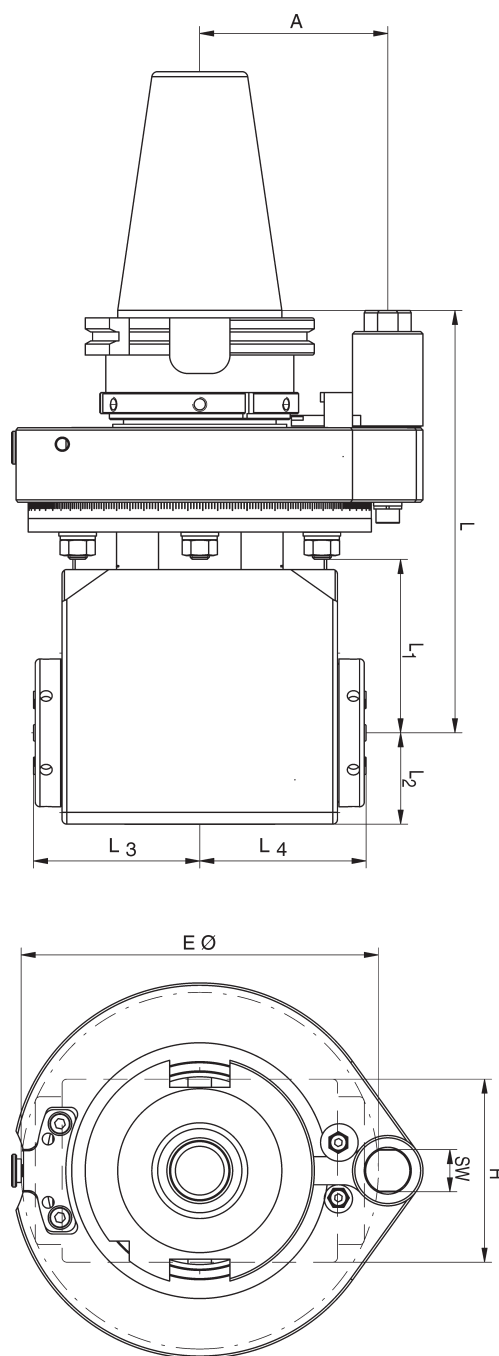
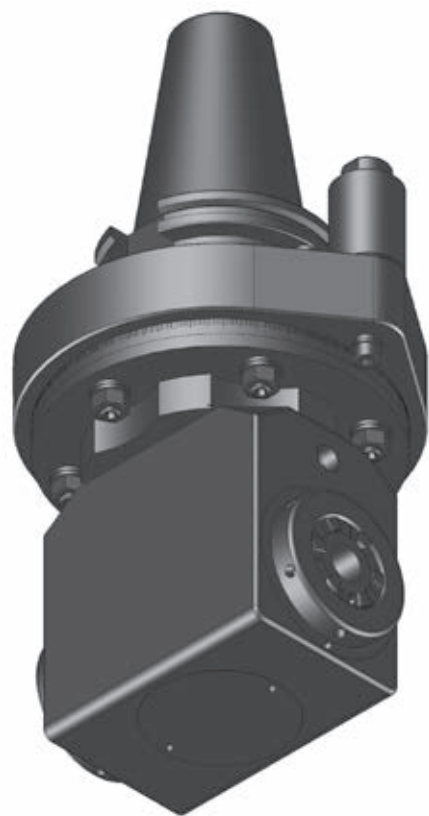
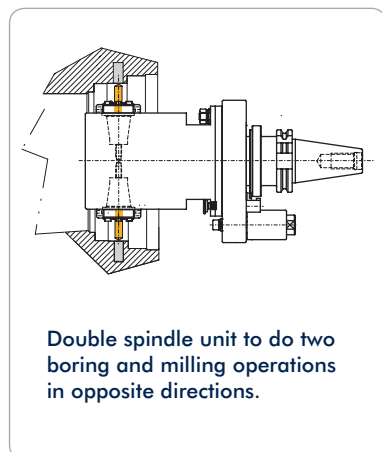
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	110	120	41,5	52	57,5	63,0	135458	135446	135447
5	mi 40	138	146	41,5	52	72,0	72,0	167870	162806	105500
7	ER 32	145	155	61,0	75	70,0	75,0	135476	162778	166720
7	mi 50	172	178	61,0	75	83,0	83,0	105519	162795	105522
9	ER 40	195	195	81,0	81	92,0	96,0	105551	162780	169469
9	mi 63	224	224	81,0	81	111,5	111,5	173083	162784	166543

12

**SK 50**

**DW**

## Double Angle Head 90°



Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	70	34	68	80	11,5	18
7	70 Nm	6.500	i = 1:1	180	70	39	78	80	13,5	18
9	150 Nm	4.000	i = 1:1	215	109	58	108	80	20,0	18

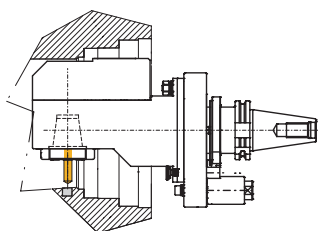
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135678	162825	
5	2 x mi 32	200	200	76,5	76,5	76,5	76,5	173511	162842	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135734	167532	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	167238	105776	
9	2 x ER 40	210	210	103,0	103,0	103,0	103,0	105784	162834	
9	2 x mi 50	250	250	116,0	116,0	116,0	116,0	167654	162851	



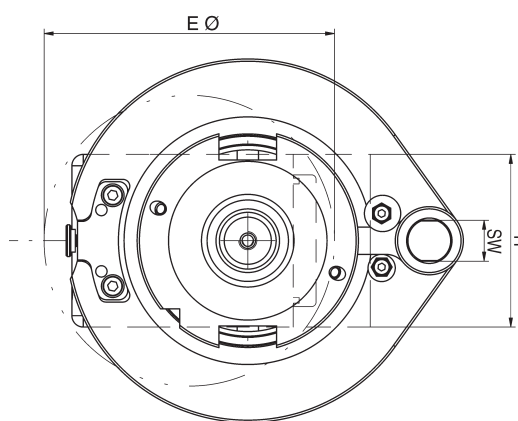
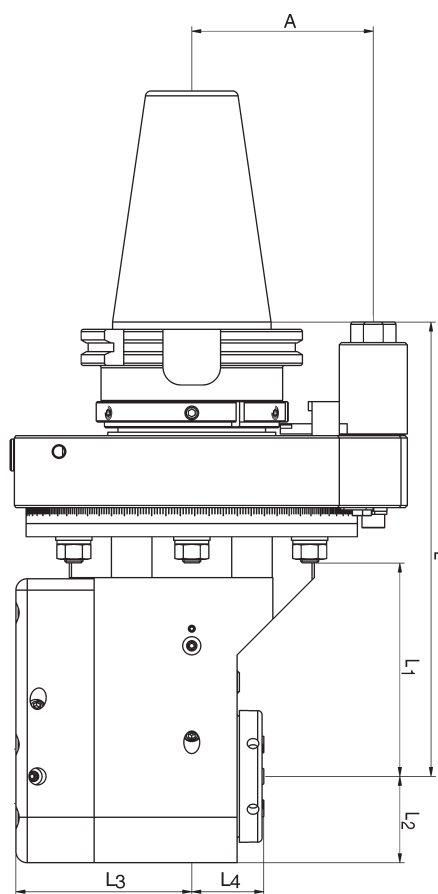
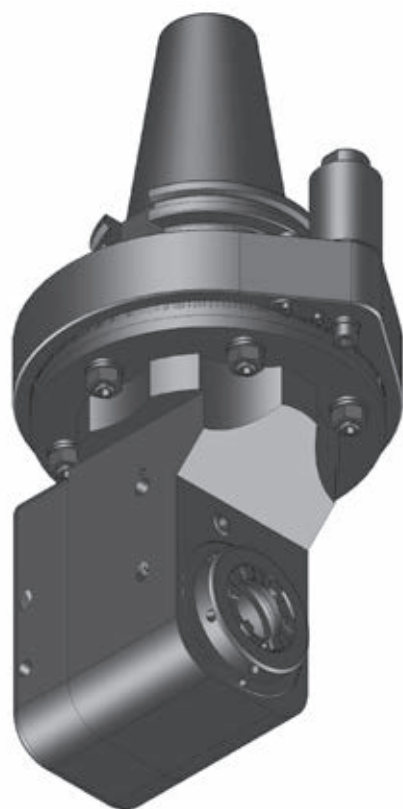
**SK 50**

**ZW**

## Angle Head 90°, Offset Type



Rear offset unit with increased usable tool length and internal coolant is an option.



Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	185	79	28,5	57	80	11,5	18
7	70 Nm	6.000	i = 1:1	200	94	38,0	76	80	14,0	18
9	150 Nm	5.000	i = 1:1	260	152	52,0	104	80	19,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	58,0	58,0	35,8	41,6	105416	162861	162862
5	mi 40	133	133	58,0	58,0	50,3	50,3	173523	162886	162887
7	ER 32	128	128	77,5	77,5	32,2	38,0	105430	162871	105479
7	mi 50	152	152	77,5	77,5	55,0	55,0	169908	162900	105475
9	ER 40	140	140	89,0	89,0	31,0	34,8	105482	162874	162876
9	mi 63	165	165	89,0	89,0	48,3	48,3	105468	162904	162905

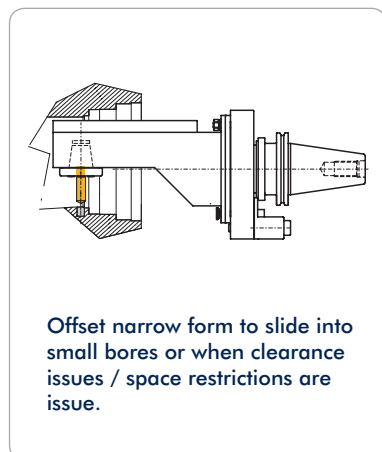
12

**SK 50**

**ZWS**

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM

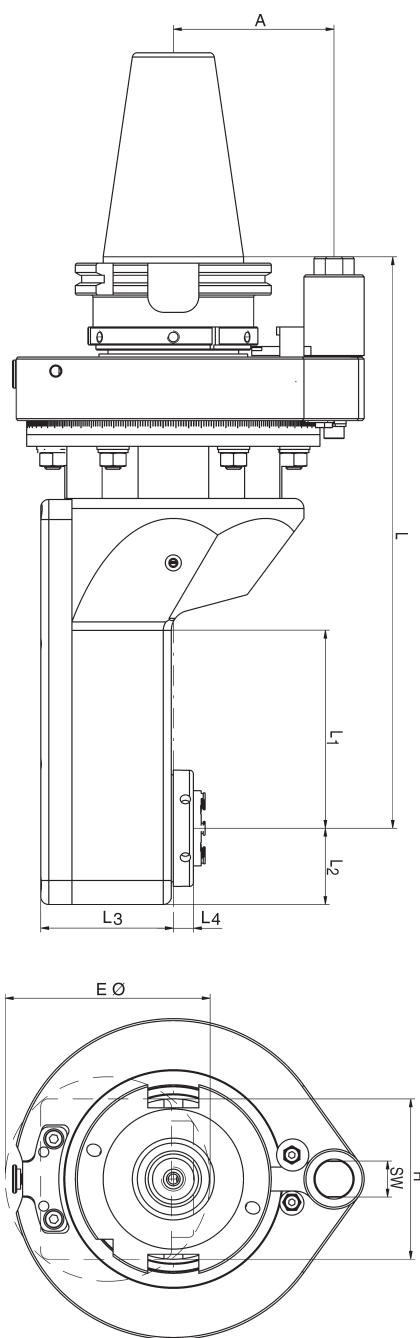
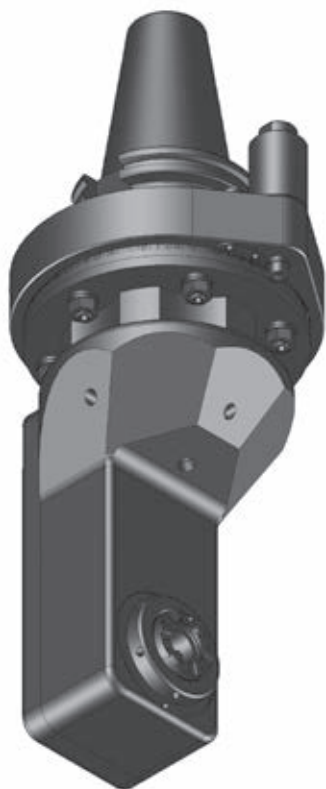
## Angle Head 90°, Offset Slim Type



Offset narrow form to slide into small bores or when clearance issues / space restrictions are issue.



**Attention!**  
Reversal of rotation direction



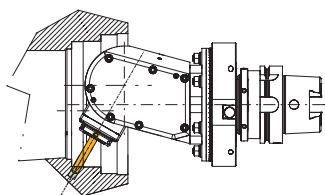
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	227,5	38	20	36	80	11,0	18
5	30 Nm	8.000	i = 1:1	215,0	76	28	56	80	12,5	18
7	70 Nm	6.000	i = 1:1	285,0	100	38	80	80	13,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49		-8,0		105650		
5	ER 25	82	82	65	65	10,0	10,0	105682	162926	
5	mi 40	125	125	65	65	23,5	23,5	173539	162938	
7	ER 32	102	102	66	66	13,0	13,0	135643	105684	
7	mi 50	135	135	66	66	29,0	29,0	167741	162942	

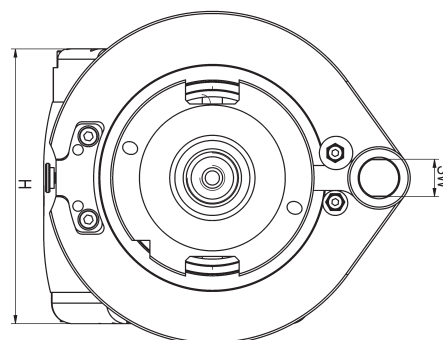
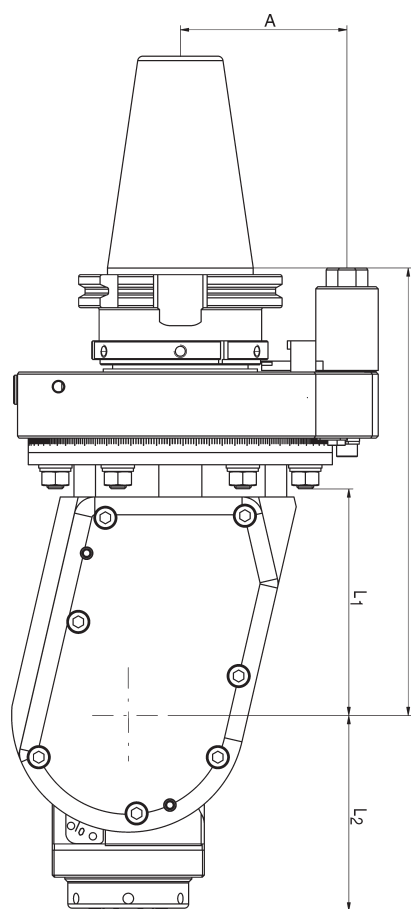
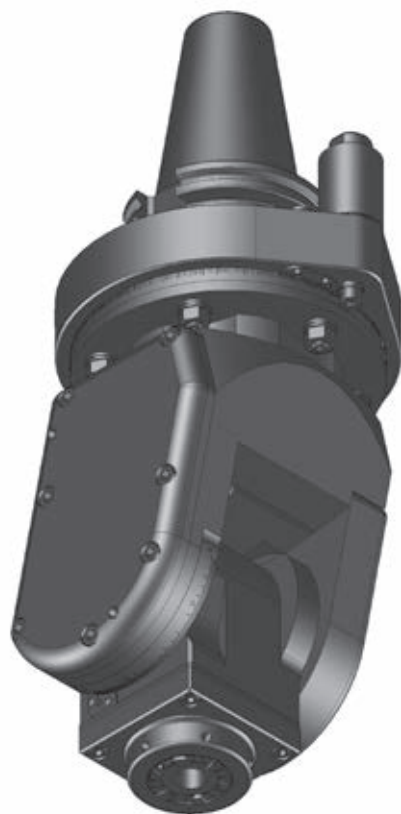
**SK 50**

**WS**

## Angle Head, Adjustable 0-98°



Adjustable angle unit to do boring and milling applications at any angle.



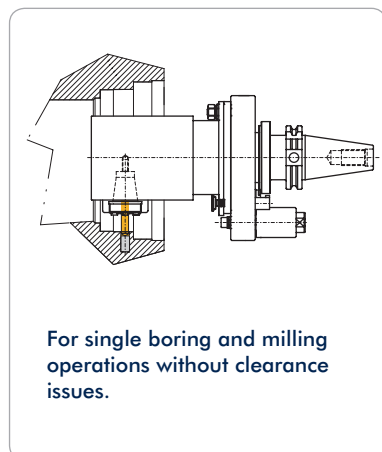
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	195	96	111	80	14,0	18
7	70 Nm	6.000	i = 1:1	215	108	132	80	16,0	18

Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
5	ER 25	84	25	162965	135816	135823	162966
5	mi 40	97	25	162967	167021	162968	162969
7	ER 32	95	25	162982	105864		
7	mi 50	108	25	162989	166981		

**HSK 63**

**SW**

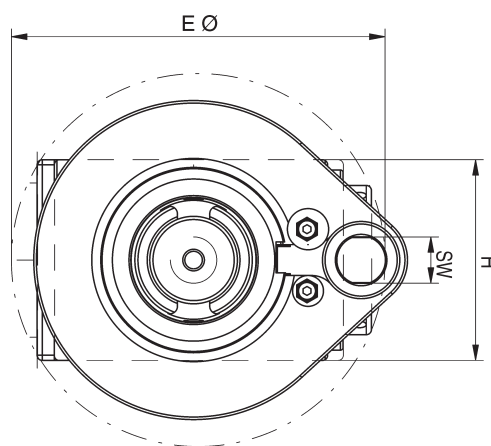
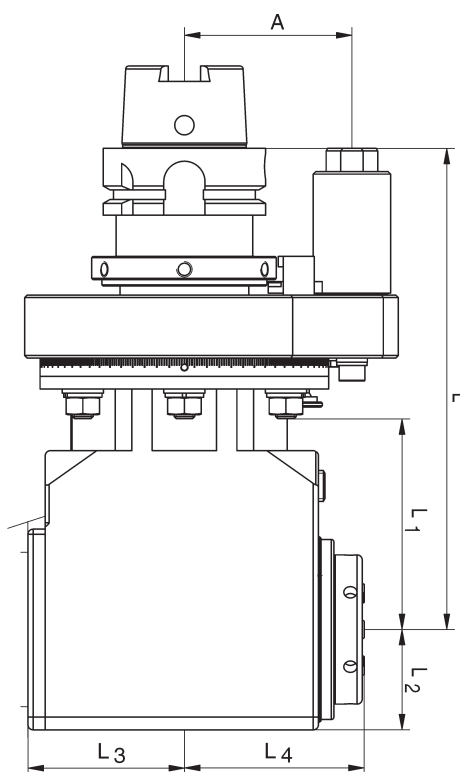
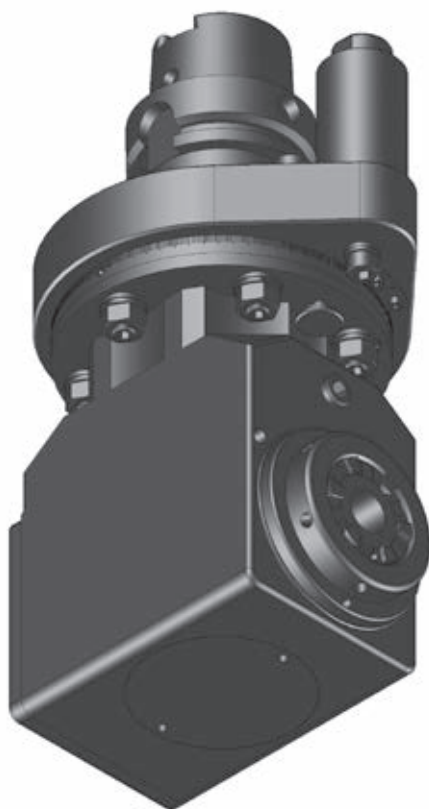
## Angle Head 90°



For single boring and milling operations without clearance issues.



**Attention!**  
Reversal of rotation direction



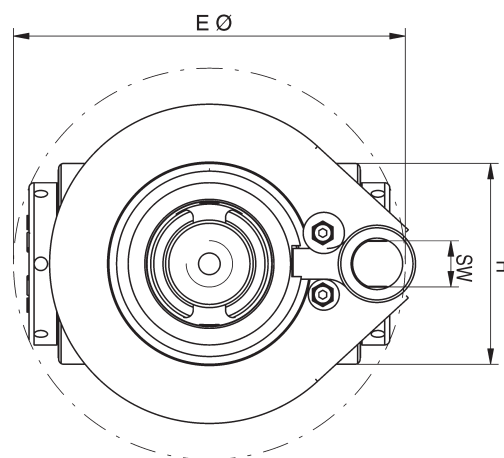
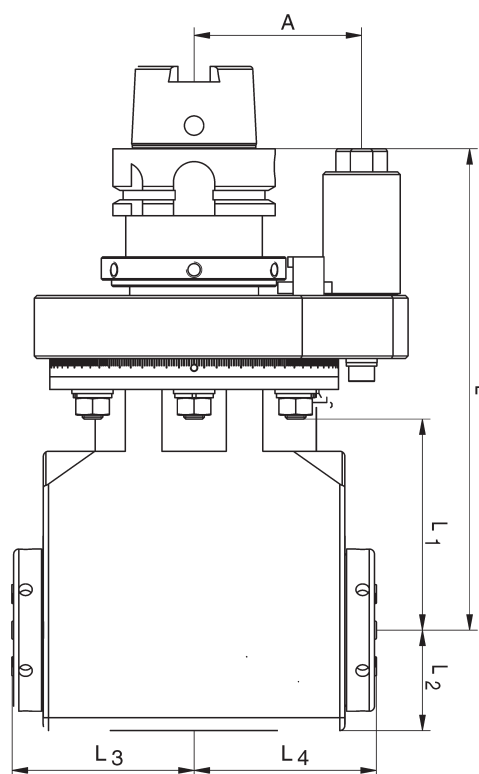
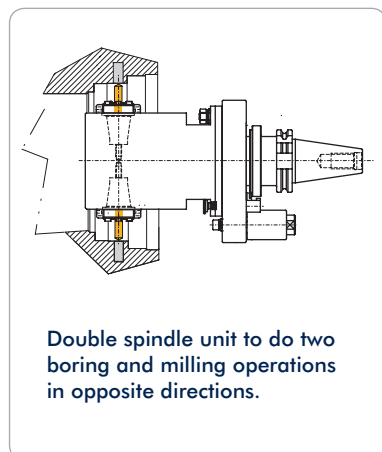
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
1	12 Nm	10.000	i = 1:1	187	80	22	44	65	6,0	18
5	30 Nm	8.000	i = 1:1	187	80	34	68	65	6,5	18
7	70 Nm	6.500	i = 1:1	187	80	39	78	65	8,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
1	ER 16	91	96	29,0	44	45,0	50	135456	162792	135452
5	ER 25	110	120	41,5	52	57,5	63	135433	105491	105501
5	mi 40	138	146	41,5	52	72,0	72	169846	162804	162805
7	ER 32	145	155	61,0	75	70,0	75	135489	105528	105533
7	mi 50	172	178	61,0	75	83,0	83	105504	162794	105540

**HSK 63**

**DW**

## Double Angle Head 90°



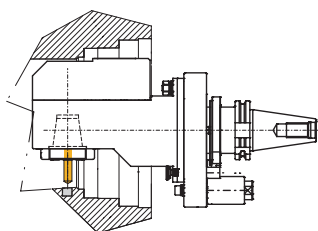
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	187	80	39	78	65	7,5	18
7	70 Nm	6.500	i = 1:1	187	80	39	78	65	8,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135706	162824	
5	2 x mi 32	200	200	76,5	76,5	76,5	76,5	173510	162841	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135747	162830	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	170454	176644	

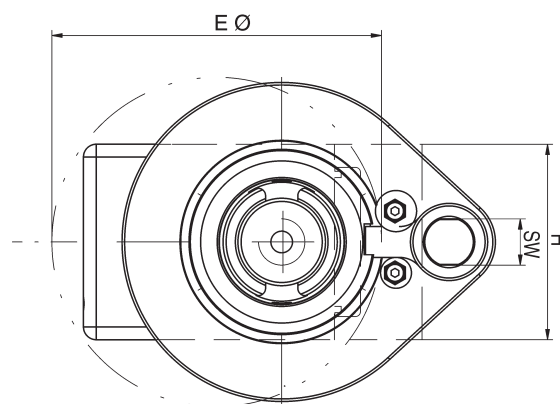
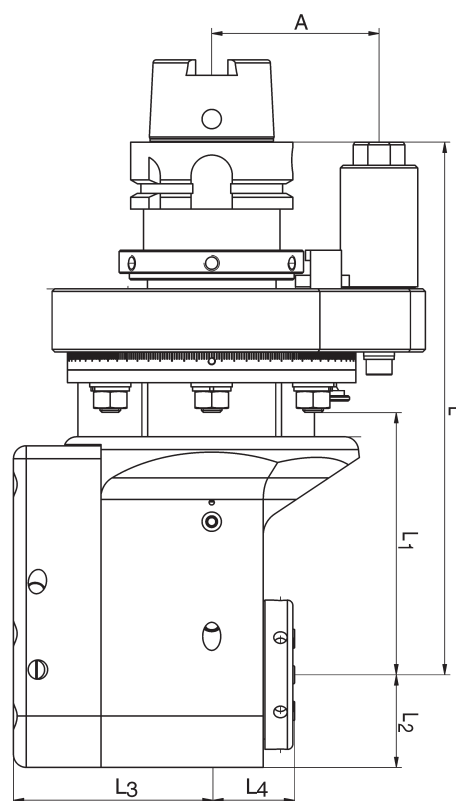
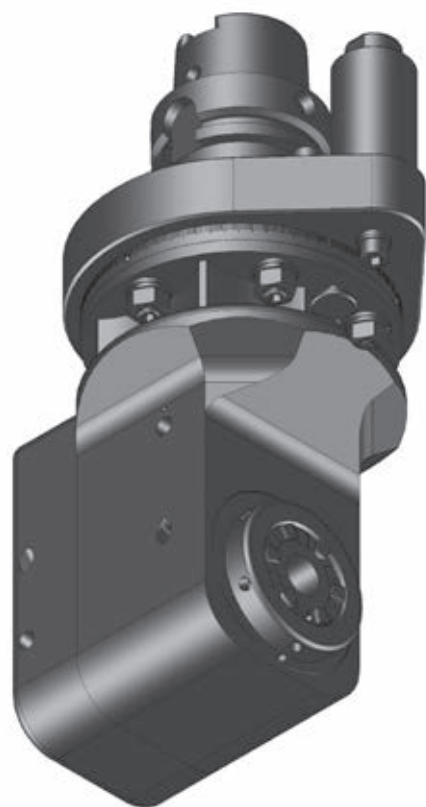
**HSK 63**

**ZW**

## Angle Head 90°, Offset Type



Rear offset unit with increased usable tool length and internal coolant is an option.

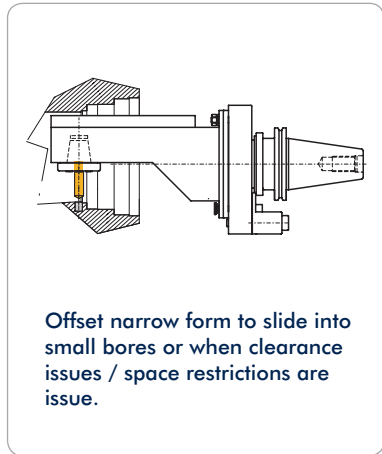


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	187	80	28,5	57	65	6,5	18
7	70 Nm	6.000	i = 1:1	205	100	38,0	76	65	8,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	57,0	57,0	35,8	41,6	135405	162860	167996
5	mi 40	130	130	57,0	57,0	50,3	50,3	105459	162884	162885
7	ER 32	128	128	77,5	77,5	34,0	38,0	135416	174283	135398
7	mi 50	150	150	77,5	77,5	55,0	55,0	173528	162899	167022

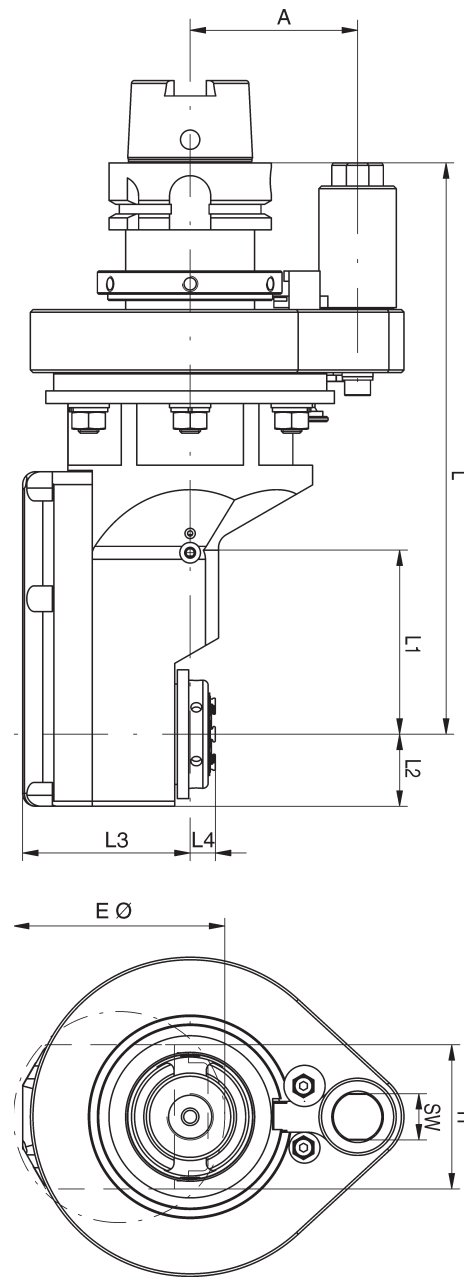
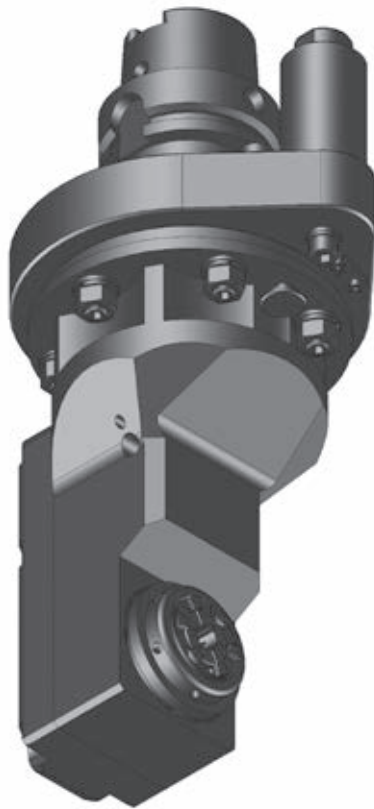
**HSK 63** **ZWS**

**Angle Head 90°,  
Offset Slim Type**



Offset narrow form to slide into small bores or when clearance issues / space restrictions are issue.

**Attention!**  
Reversal of rotation direction



Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	220	38	20	36	65	7,0	18
3	15 Nm	10.000	i = 1:1	232	80	24	48	65	6,0	18
5	30 Nm	8.000	i = 1:1	222	76	28	56	65	6,5	18

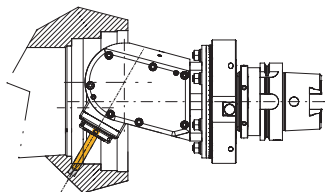
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49,0		-8,0		105670		
3	ER 20	75		54,5		11,2		135633		
3	mi 32	100		54,5		26,0		105671		
5	ER 25	82	82	65,0	65	10,0	10,0	105674	162925	
5	mi 40	125	125	65,0	65	23,5	23,5	105686	162937	

**HSK 63**

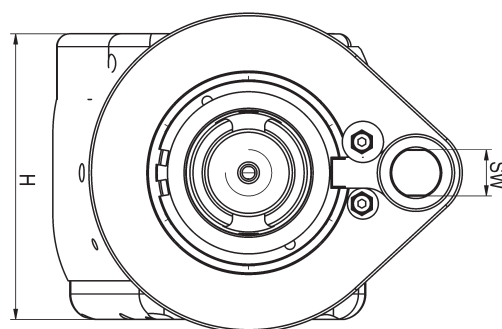
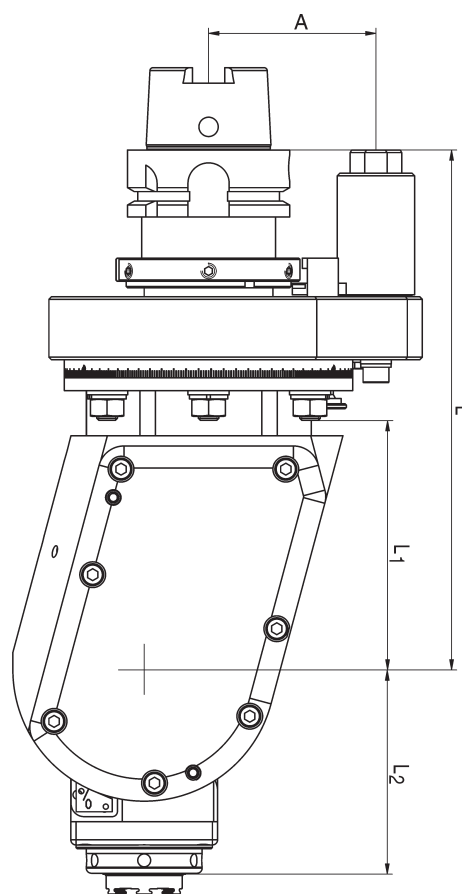
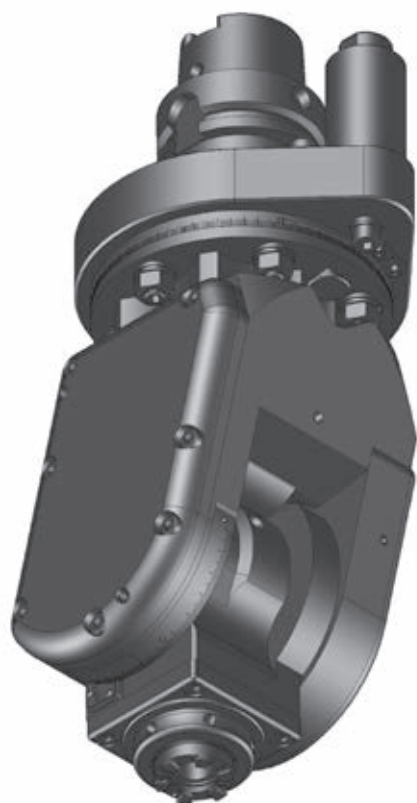
**WS**

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM

## Angle Head, Adjustable 0-98°



Adjustable angle unit to do boring and milling applications at any angle.



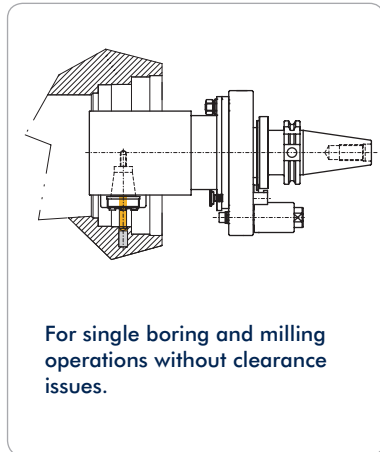
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
3	15 Nm	8.000 / 15.000	i = 1:1 / 1:2,25	196	91	96	65	8,0	18
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	202	96	111	65	9,6	18

Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
3	ER 20	75,0	20	162945	105840	156558	156559
3	mi 32	82,9	20	156577	169142	156578	156579
5	ER 25	84,0	25	162961	135824	162962	135832
5	mi 40	97,0	25	162963	105853	162964	105858



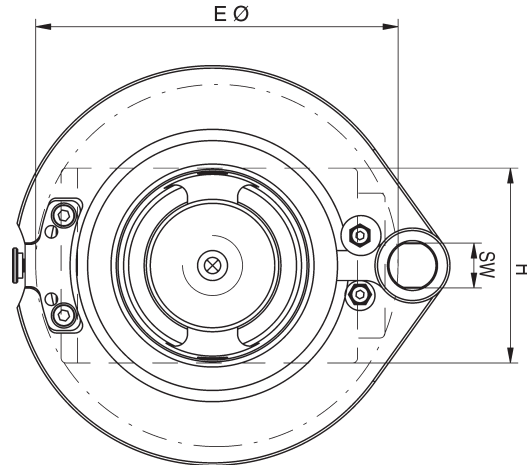
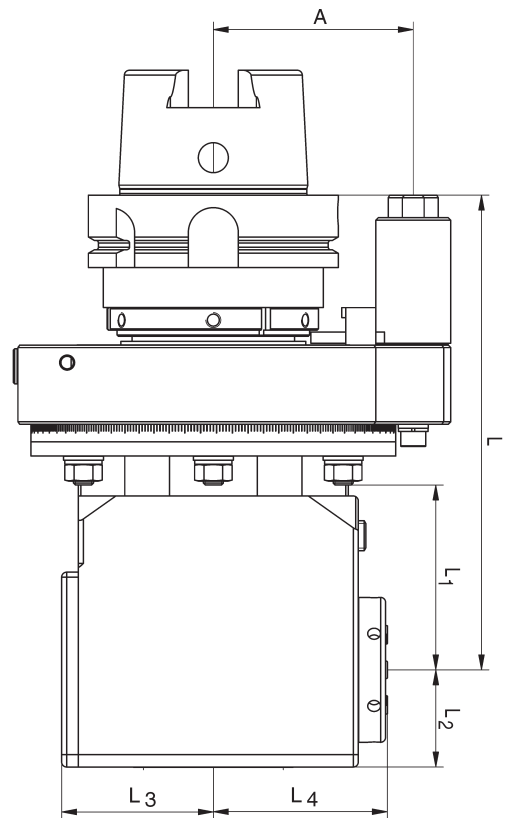
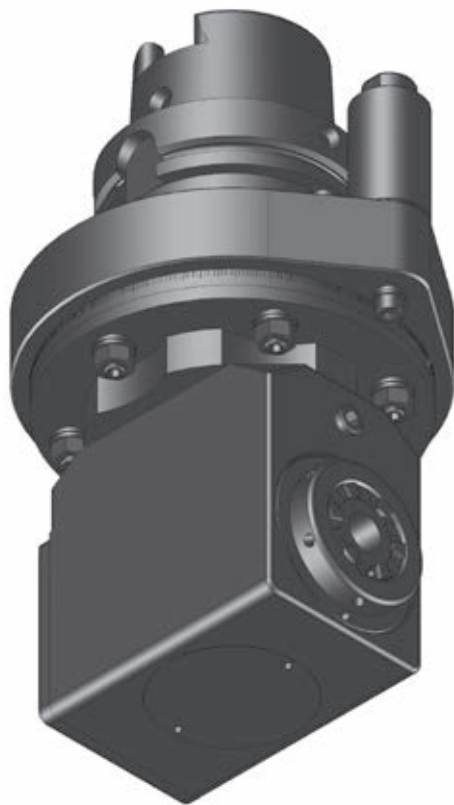
**HSK 100 SW**

**Angle Head 90°**



For single boring and milling operations without clearance issues.

**Attention!**  
Reversal of rotation direction



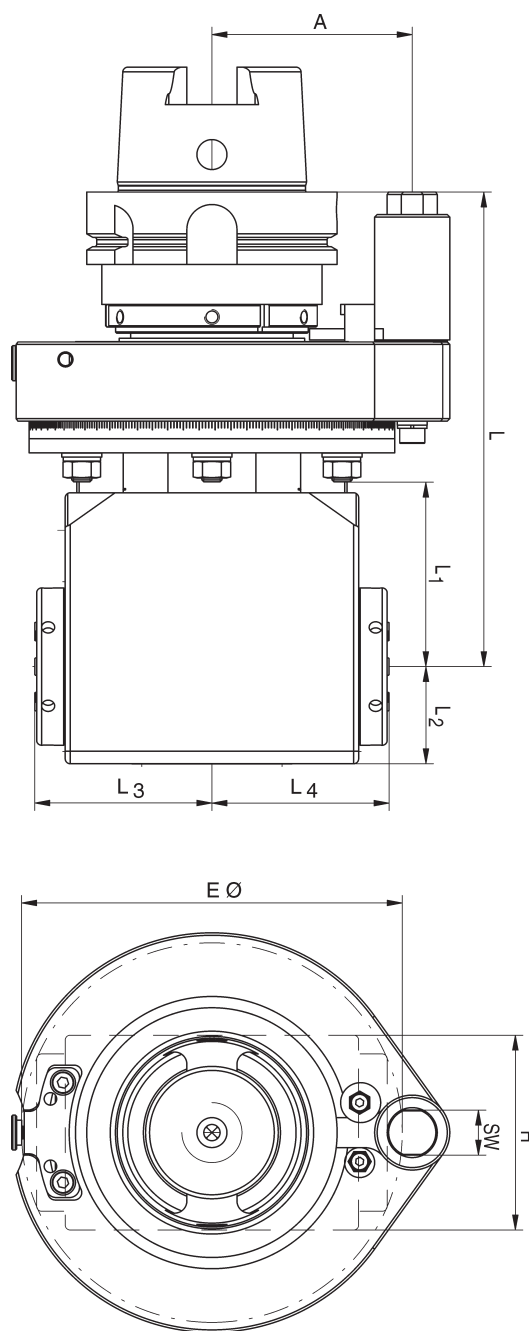
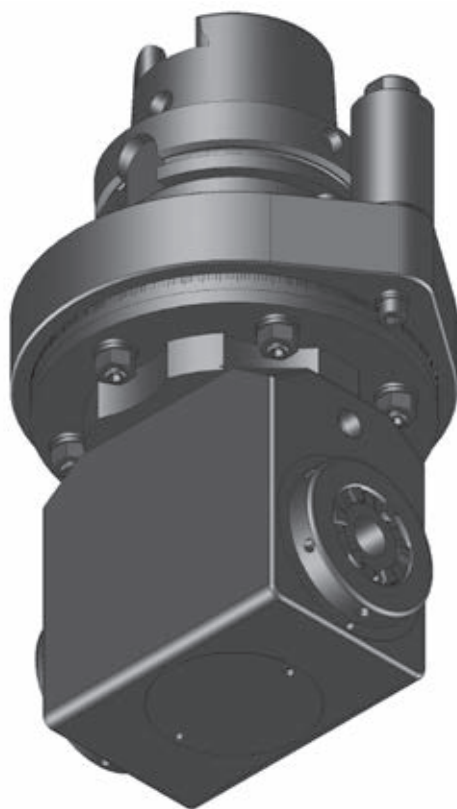
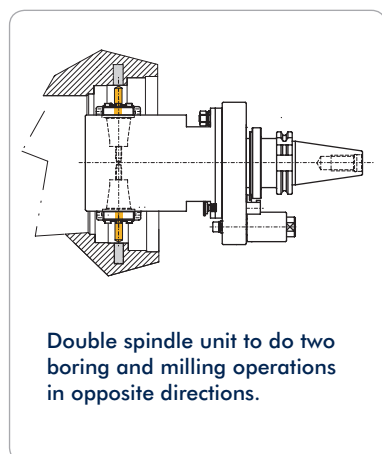
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	190	75	34	68	80	10,5	18
7	70 Nm	6.500	i = 1:1	190	75	39	78	80	12,0	18
9	150 Nm	5.000	i = 1:1	225	109	52	104	80	18,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	110	120	41,5	52	57,5	63,0	105499	162774	135462
5	mi 40	138	146	41,5	52	72,0	72,0	172644	162811	162812
7	ER 32	145	155	61,0	75	70,0	75,0	105515	169103	105506
7	mi 50	172	178	61,0	75	83,0	83,0	167699	176169	162798
9	ER 40	195	195	81,0	81	92,0	96,0	105557	169104	105544
9	mi 63	224	224	81,0	81	111,5	111,5	173506	162788	162789

**HSK 100**

**DW**

## Double Angle Head 90°

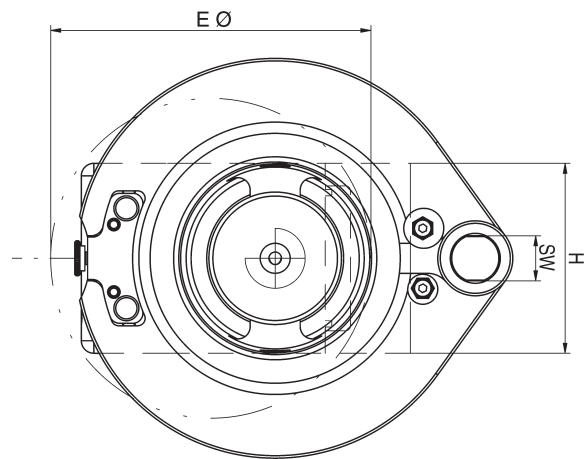
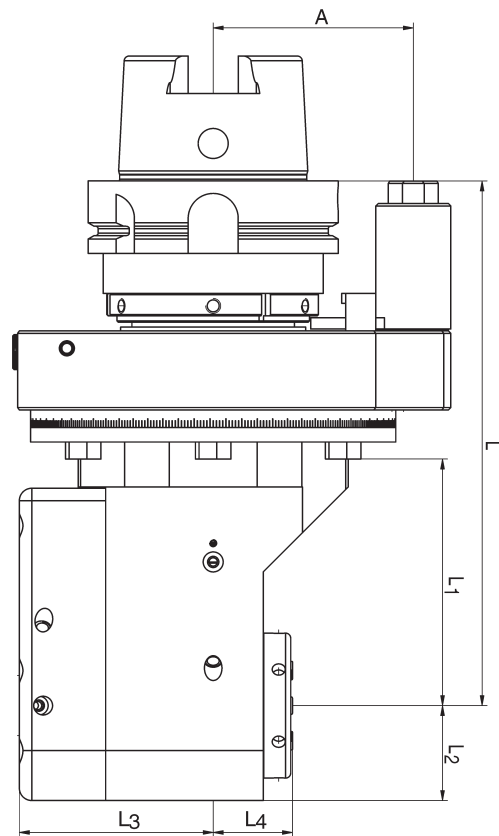
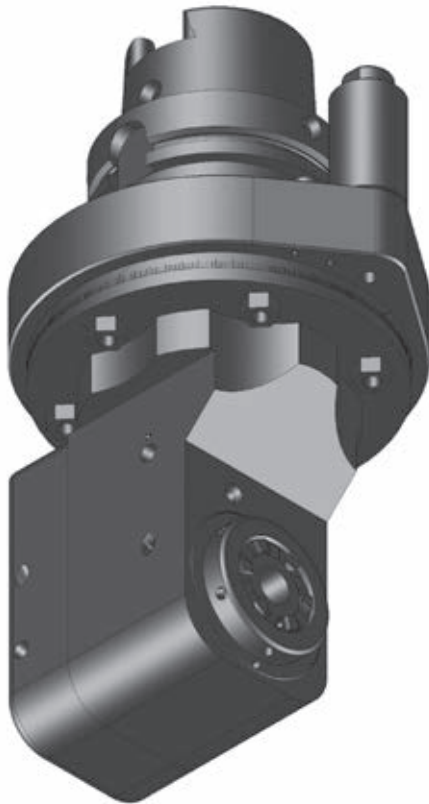
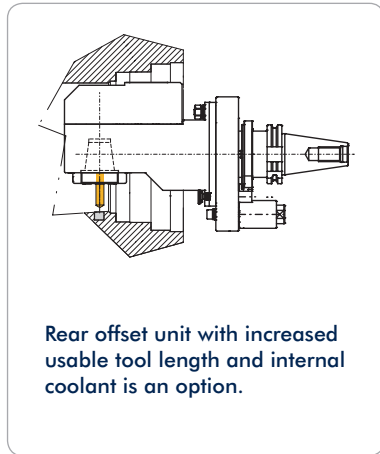


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	190	70	34	68	80	11,5	18
7	70 Nm	6.500	i = 1:1	190	70	39	78	80	13,5	18
9	150 Nm	4.000	i = 1:1	225	109	58	108	80	20,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135711	162827	
5	2 x mi 32	200	200	76,5	76,5	76,5	76,5	173514	162845	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135749	162833	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	167700	162850	
9	2 x ER 40	210	210	103,0	103,0	103,0	103,0	105790	162837	
9	2 x mi 50	250	250	116,0	116,0	116,0	116,0	167705	162854	

**HSK 100** **ZW**

**Angle Head 90°, Offset Type**



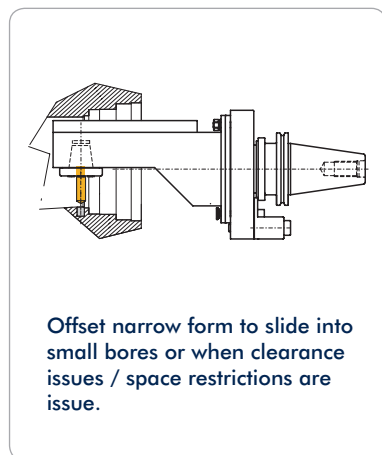
12

Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	195	79	28,5	57	80	11,5	18
7	70 Nm	6.500	i = 1:1	210	94	38,0	76	80	14,0	18
9	150 Nm	5.000	i = 1:1	270	152	52,0	104	80	19,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	58,0	58,0	35,8	41,6	105466	162867	168564
5	mi 40	133	133	58,0	58,0	50,3	50,3	173522	162892	162893
7	ER 32	128	128	77,5	77,5	32,2	38,0	105431	162873	166868
7	mi 50	152	152	77,5	77,5	55,0	55,0	173529	162903	105469
9	ER 40	140	140	89,0	89,0	31,0	34,8	135375	105471	135399
9	mi 63	165	165	89,0	89,0	48,3	48,3	173534	162910	168369

**HSK 100** **ZWS**

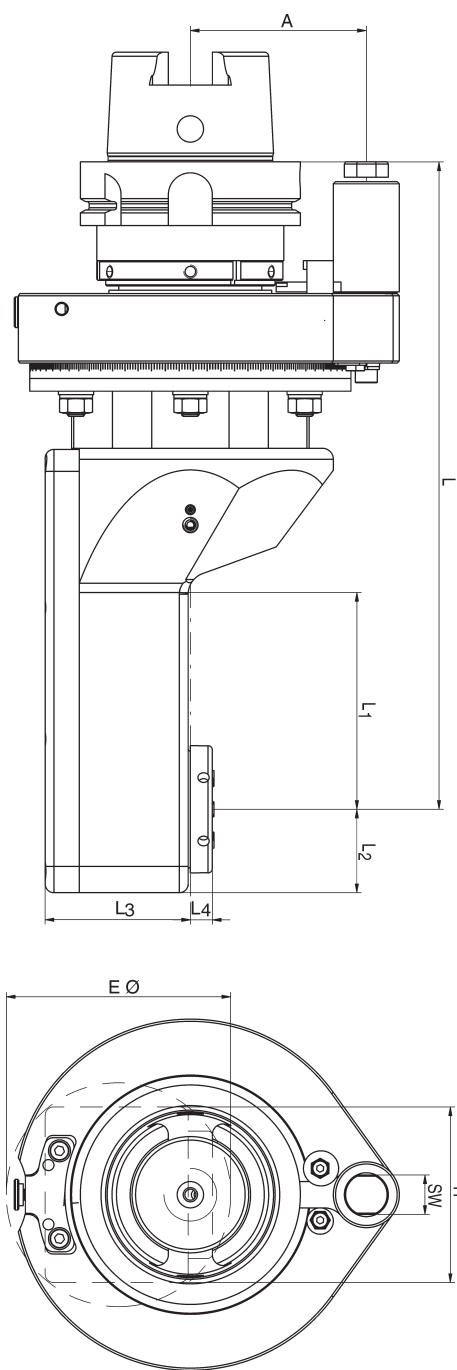
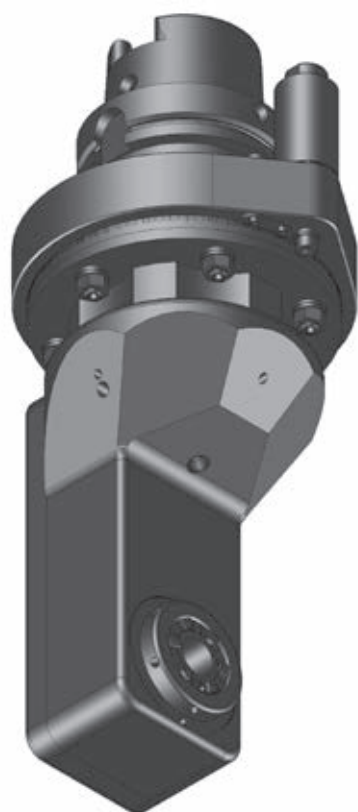
## Angle Head 90°, Offset Slim Type



Offset narrow form to slide into small bores or when clearance issues / space restrictions are issue.



**Attention!**  
Reversal of rotation direction

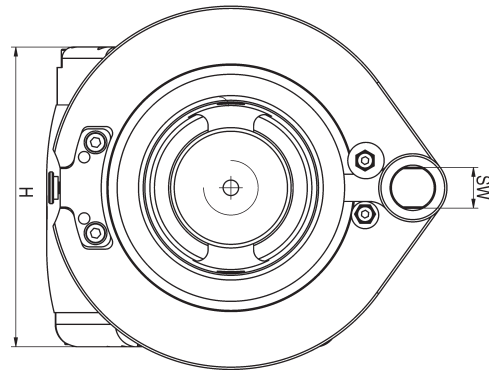
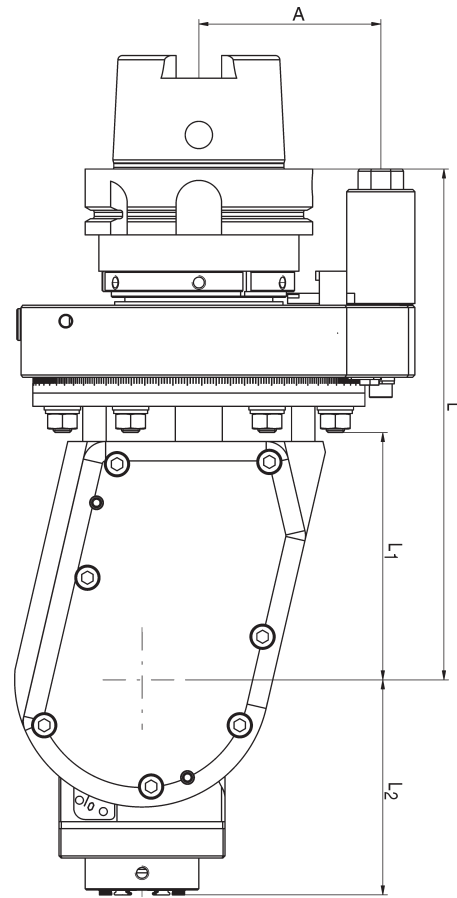
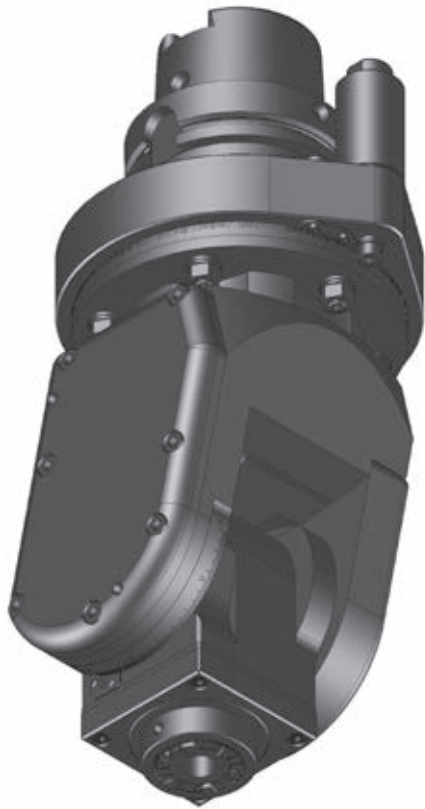
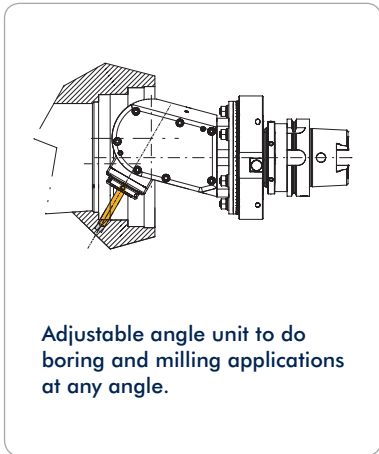


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	237,5	38	20	36	80	11,0	18
5	30 Nm	8.000	i = 1:1	225,0	76	28	56	80	12,5	18
7	70 Nm	6.500	i = 1:1	295,0	100	38	80	80	13,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49		-8,0		135592		
5	ER 25	82	82	65	65	10,0	10,0	135651	105683	
5	mi 40	125	125	65	65	23,5	23,5	173542	162941	
7	ER 32	102	102	66	66	13,0	13,0	135656	162928	
7	mi 50	135	135	66	66	29,0	29,0	105687	169062	

**HSK 100** **WS**

**Angle Head, Adjustable 0-98°**



12

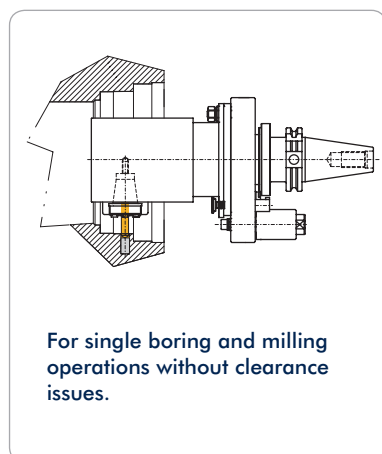
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	205	96	111	80	14,0	18
7	70 Nm	6.000	i = 1:1	225	109	132	80	16,0	18

Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
5	ER 25	84	25	162976	135865	162977	162978
5	mi 40	97	25	162979	169980	162980	162981
7	ER 32	95	25	162986	105866		
7	mi 50	108	25	162991	169942		

**MAS-BT 40**

**SW**

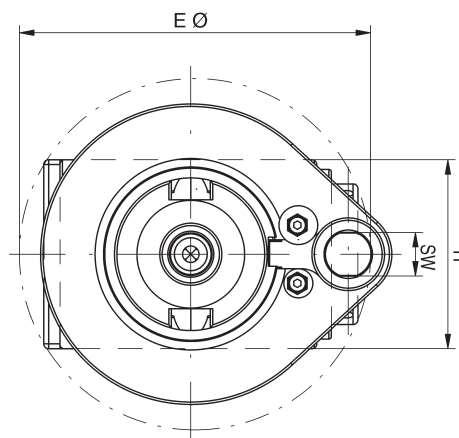
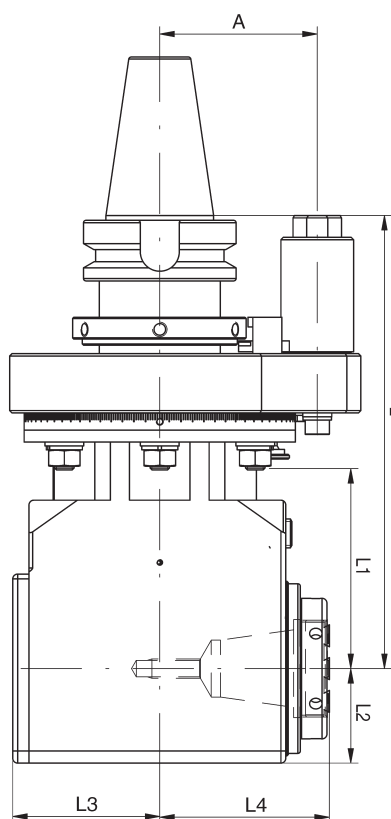
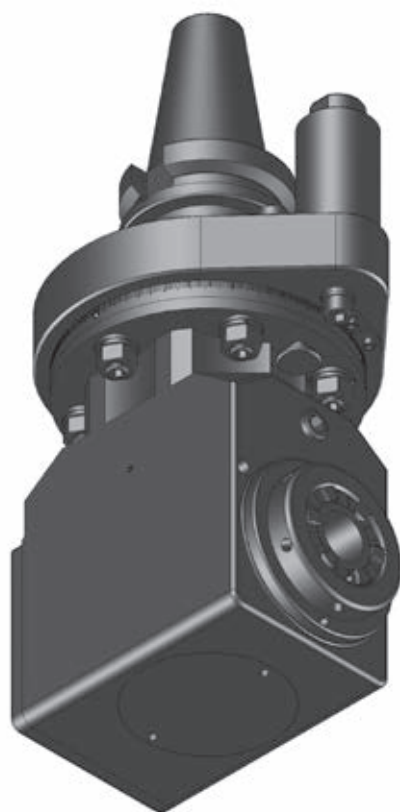
## Angle Head 90°



For single boring and milling operations without clearance issues.



**Attention!**  
Reversal of rotation direction



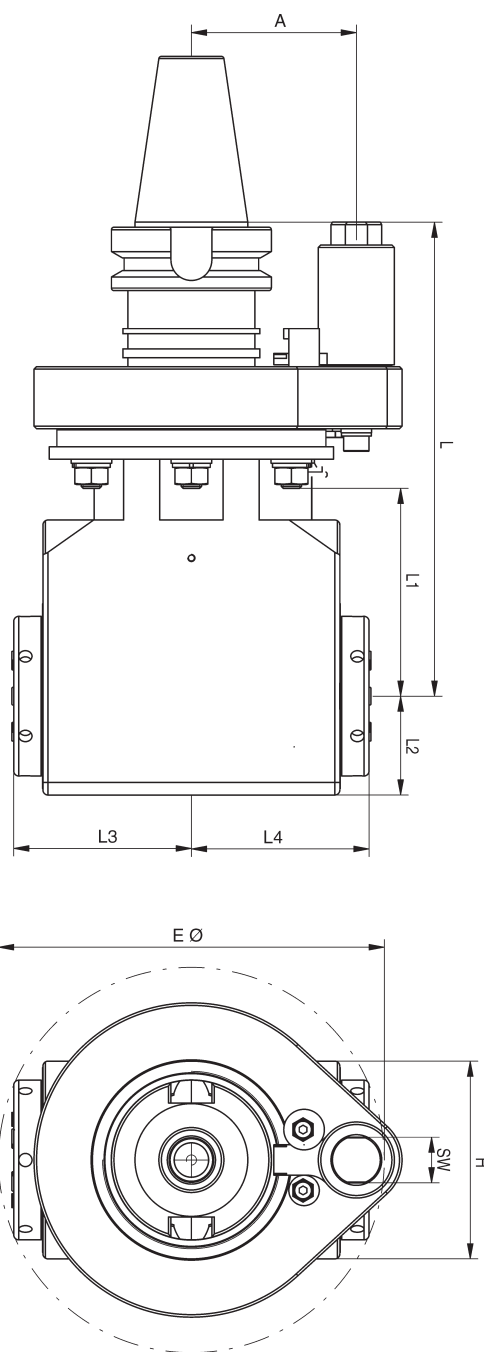
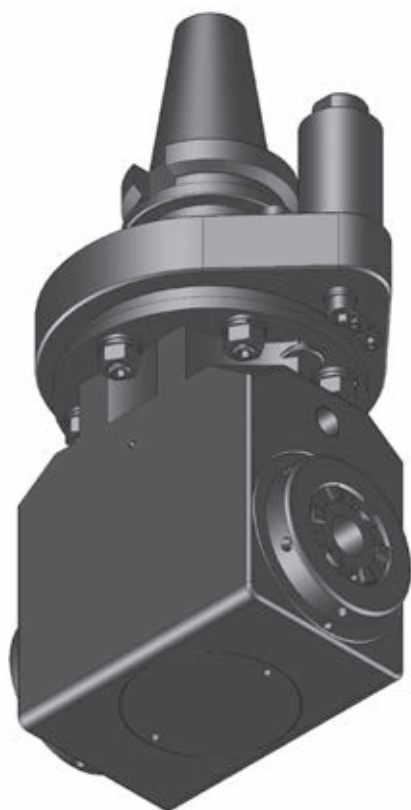
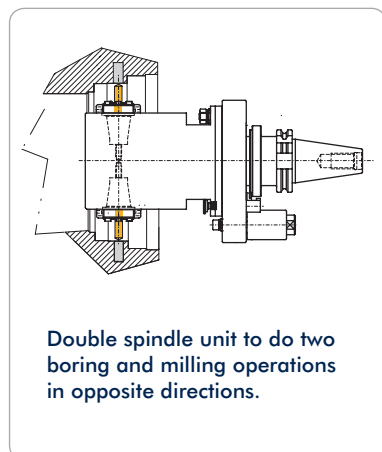
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
1	12 Nm	10.000	i = 1:1	187	80	22	44	65	6,0	18
5	30 Nm	8.000	i = 1:1	187	80	34	68	65	6,5	18
7	70 Nm	6.500	i = 1:1	187	80	39	78	65	8,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
1	ER 16	91	96	29,0	44	45,0	50	135431	135444	135451
5	ER 25	110	120	41,5	52	57,5	63	135459	105503	135435
5	mi 40	138	146	41,5	52	72,0	72	173000	162802	162803
7	ER 32	145	155	61,0	75	70,0	75	135470	162777	105505
7	mi 50	172	178	61,0	75	83,0	83	170653	176278	167889

**MAS-BT 40**

**DW**

## Double Angle Head 90°



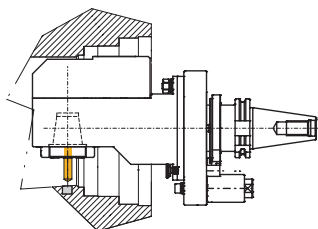
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	187	80	39	78	65	7,5	18
7	70 Nm	6.500	i = 1:1	187	80	39	78	65	8,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135717	162823	
5	2 x mi 32	200	200	76,5	76,5	76,5	76,5	173509	162840	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135729	162829	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	173516	162847	

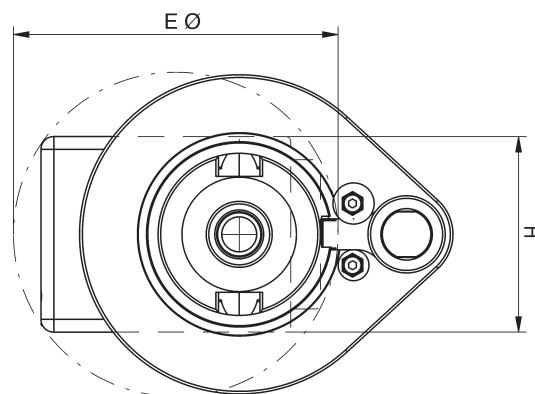
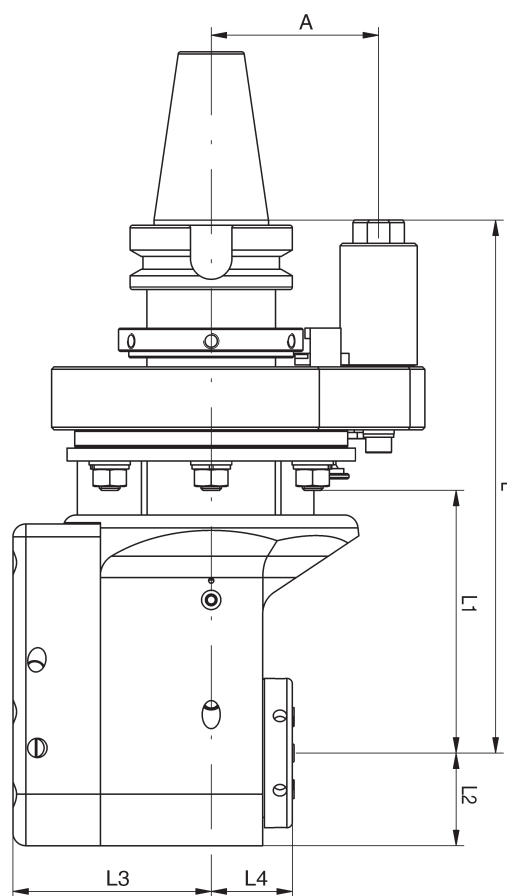
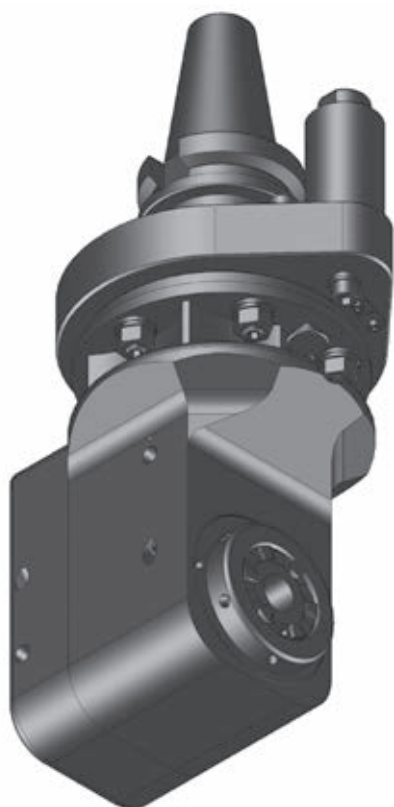
**MAS-BT 40**

**ZW**

## Angle Head 90°, Offset Type



Rear offset unit with increased usable tool length and internal coolant is an option.



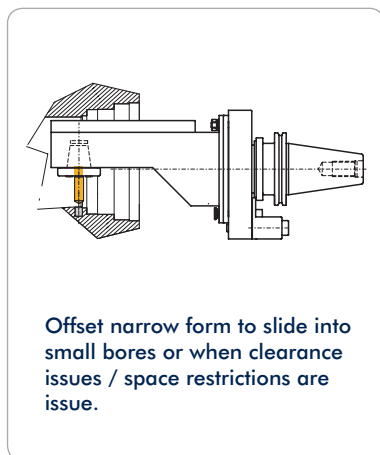
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	187	80	28,5	57	65	6,5	18
7	70 Nm	6.000	i = 1:1	205	100	38,0	76	65	8,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	57,0	57,0	35,8	41,6	105435	162857	162859
5	mi 40	130	130	57,0	57,0	50,3	50,3	105458	162882	162883
7	ER 32	128	128	77,5	77,5	32,2	38,0	105477	162870	172498
7	mi 50	150	150	77,5	77,5	55,0	55,0	173527	162897	162898

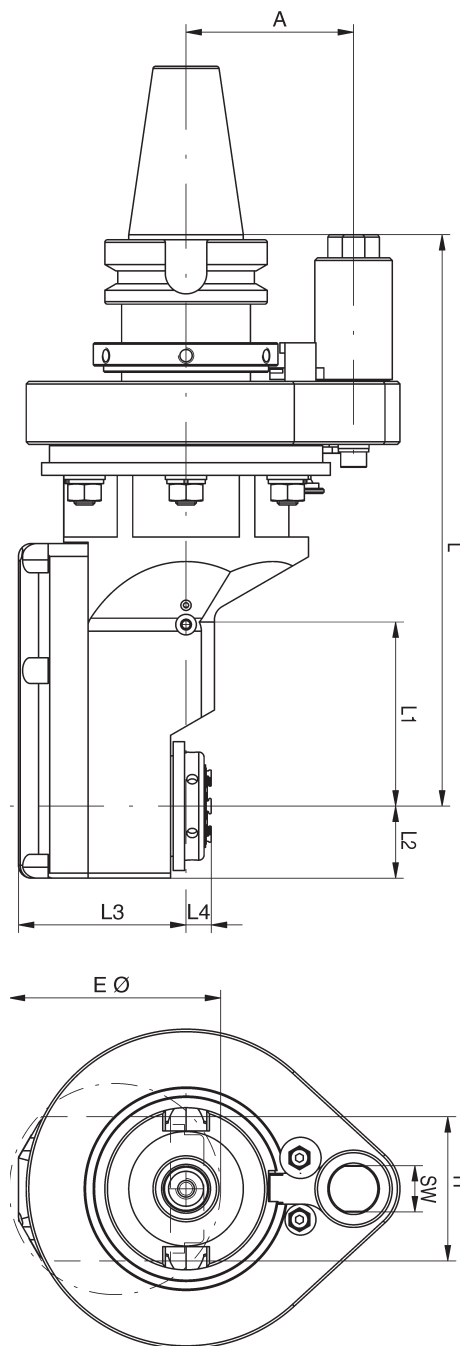
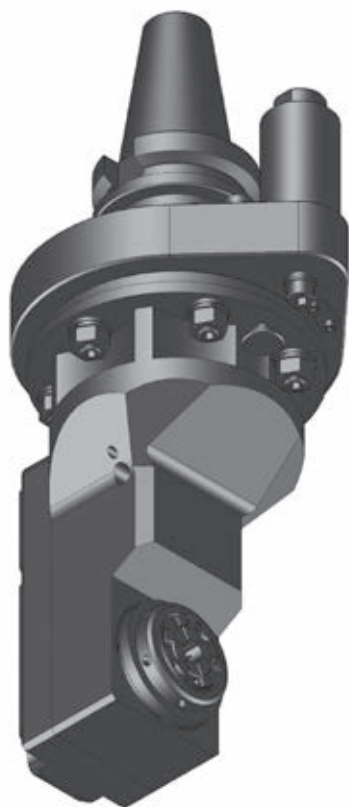


**MAS-BT 40 ZWS**

**Angle Head 90°, Offset Slim Type**



**Attention!**  
Reversal of rotation direction

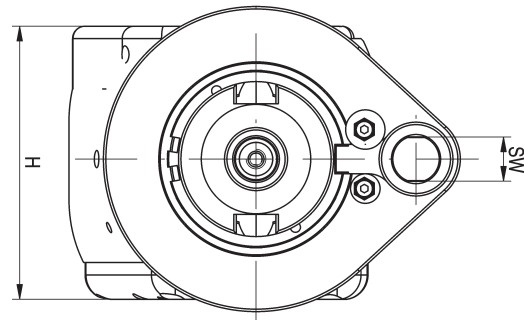
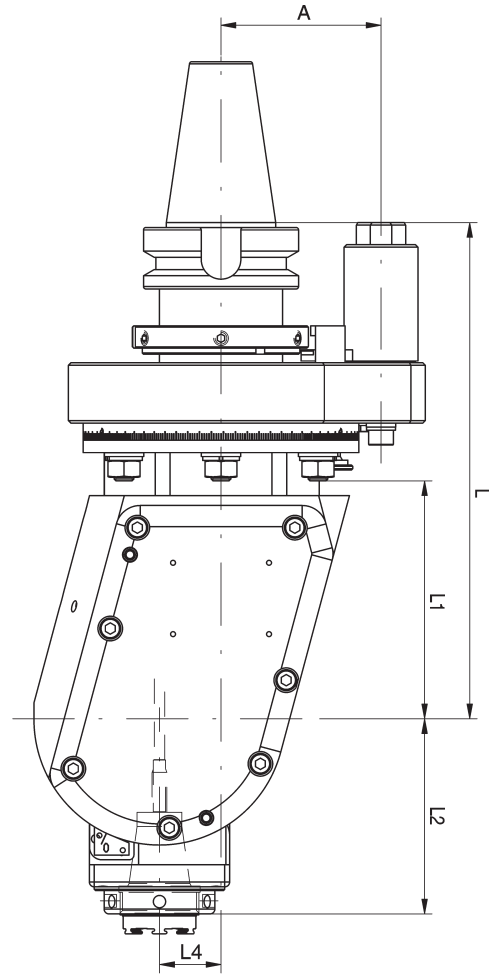
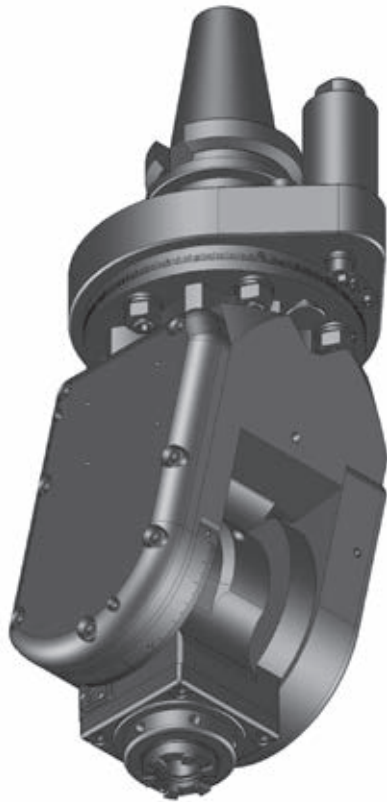
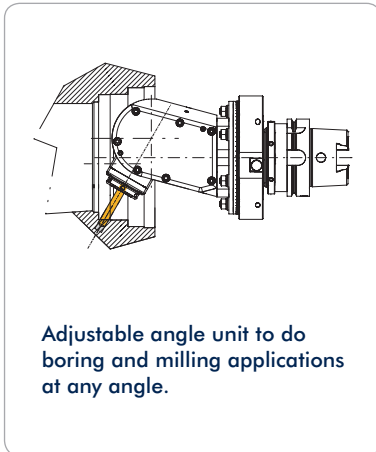


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	220	38	20	36	65	7,0	18
3	15 Nm	10.000	i = 1:1	232	80	24	48	65	6,0	18
5	30 Nm	8.000	i = 1:1	222	76	28	56	65	6,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49,0		-8,0		105651		
3	ER 20	75		54,5		11,2		135629		
3	mi 32	100		54,5		26,0		173536		
5	ER 25	82	82	65,0	65,0	10,0	10,0	135649	162924	
5	mi 40	125	125	65,0	65,0	23,5	23,5	173537	162936	

**MAS-BT 40** **WS**

**Angle Head, Adjustable 0-98°**

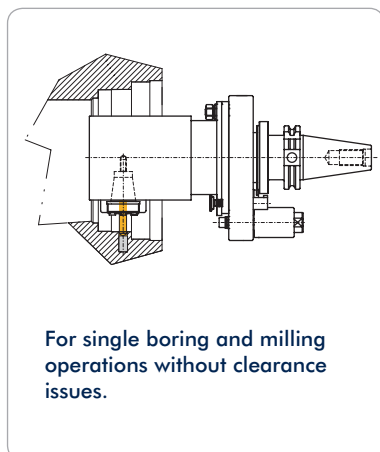


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
3	15 Nm	8.000 / 15.000	i = 1:1 / 1:2,25	196	100	96	65	8,0	18
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	202	100	111	65	9,6	18

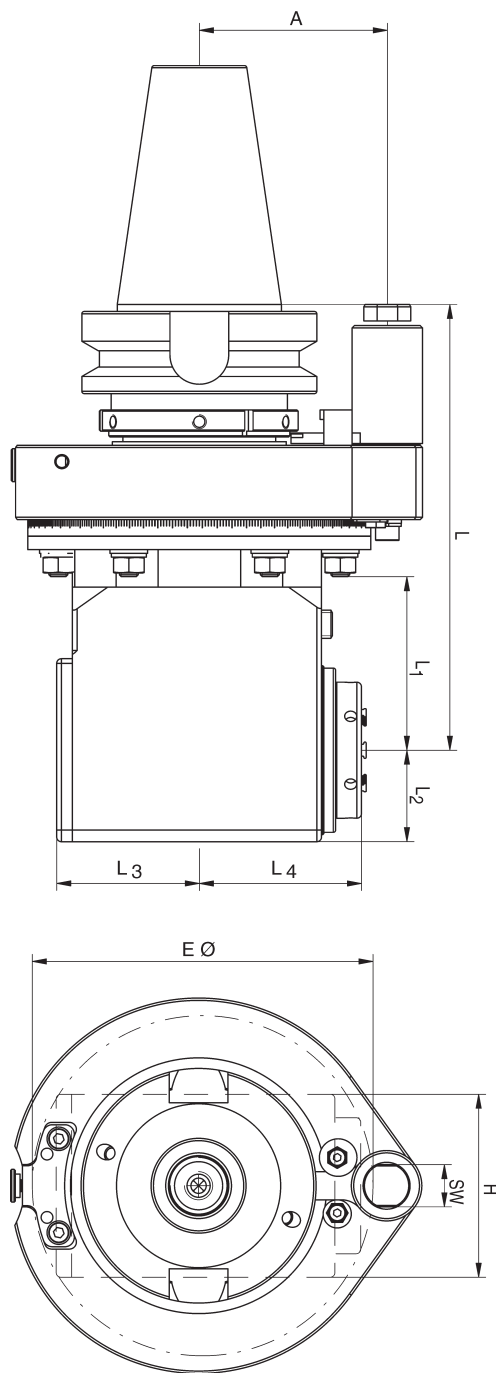
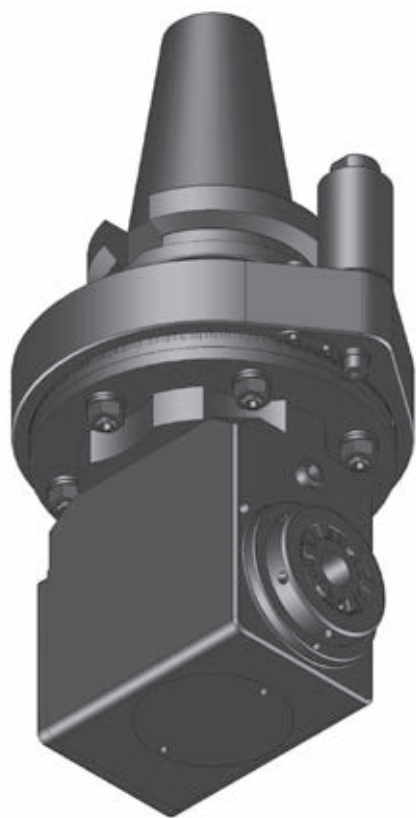
Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
3	ER 20	75,0	20	173907	105808	162858	162933
3	mi 32	82,9	20	156569	167418	156570	156574
5	ER 25	84,0	25	162955	135813	162957	162956
5	mi 40	97,0	25	162958	169976	162959	162960

**MAS-BT 50 SW**

**Angle Head 90°**



**Attention!**  
Reversal of rotation direction



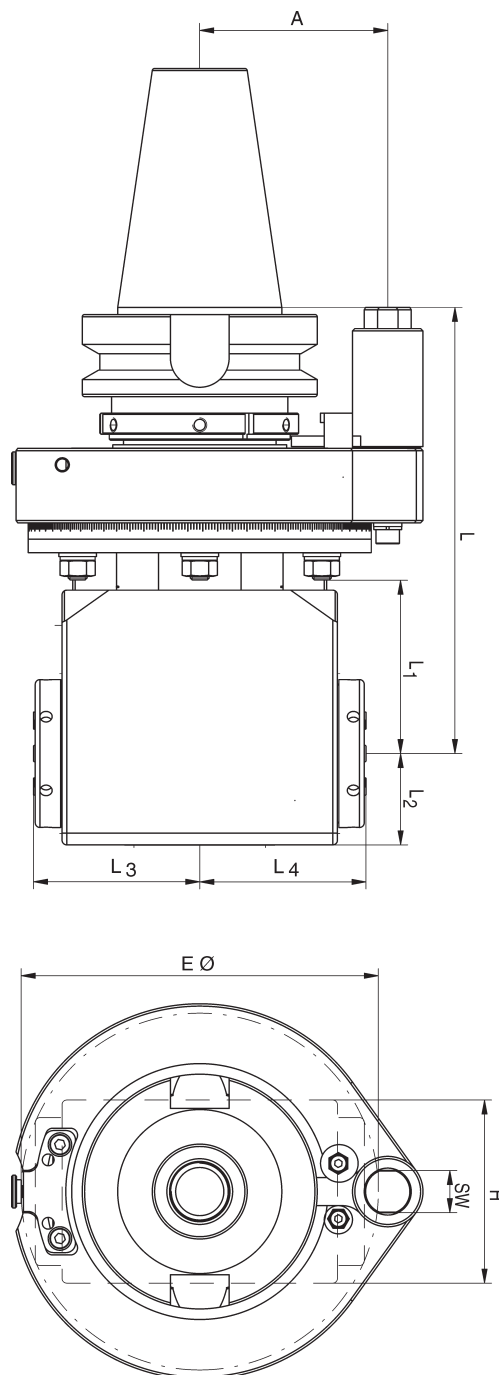
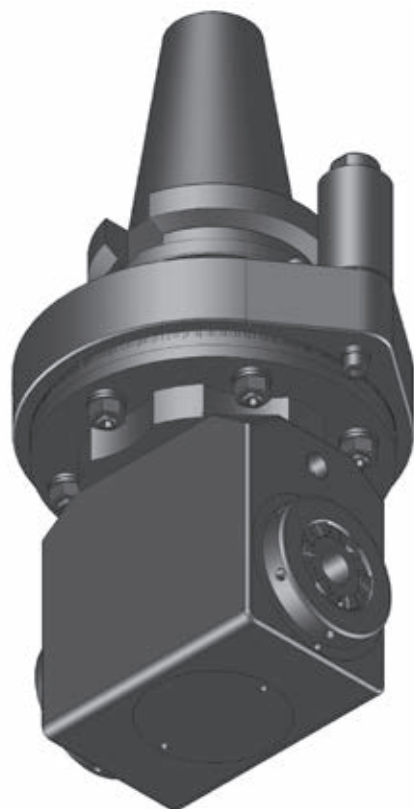
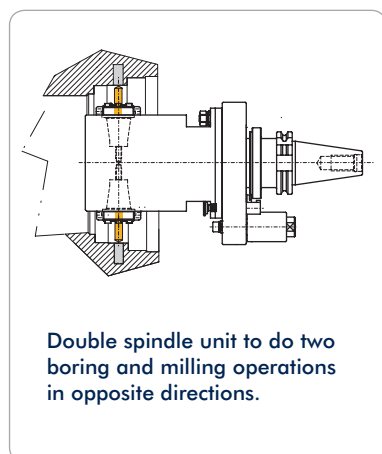
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	190	75	34	68	80	10,5	18
7	70 Nm	6.500	i = 1:1	190	75	39	78	80	12,0	18
9	150 Nm	5.000	i = 1:1	225	109	52	104	80	18,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	110	120	41,5	52	57,5	63,0	105494	162772	162773
5	mi 40	138	146	41,5	52	72,0	72,0	173014	162809	162810
7	ER 32	145	155	61,0	75	70,0	75,0	135482	105538	172558
7	mi 50	172	178	61,0	75	83,0	83,0	105520	105508	174169
9	ER 40	195	195	81,0	81	92,0	96,0	105512	162783	167210
9	mi 63	224	224	81,0	81	111,5	111,5	167208	162787	167211

**MAS-BT 50**

**DW**

## Double Angle Head 90°

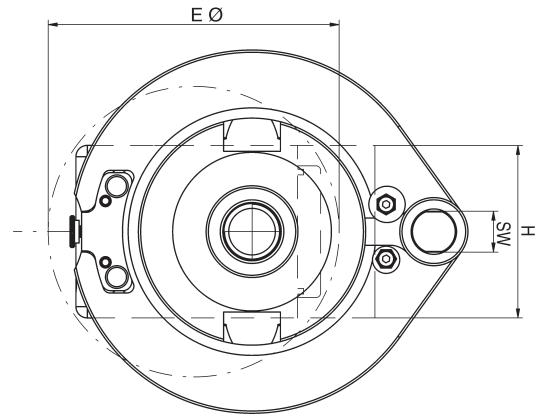
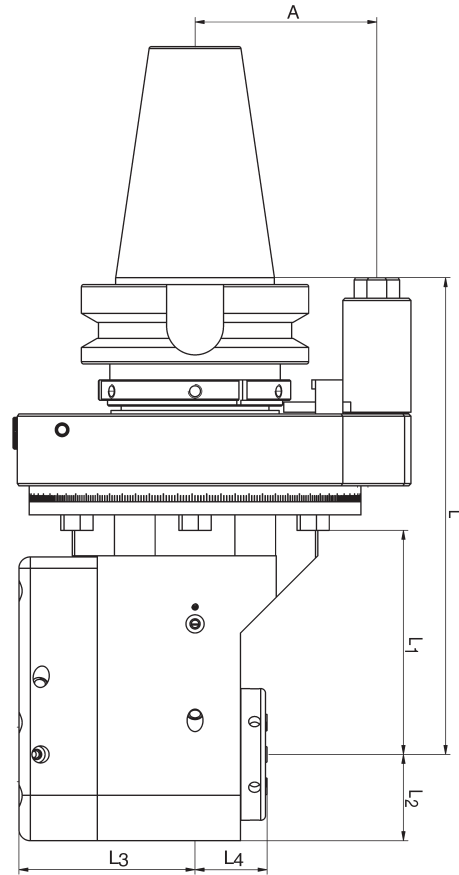
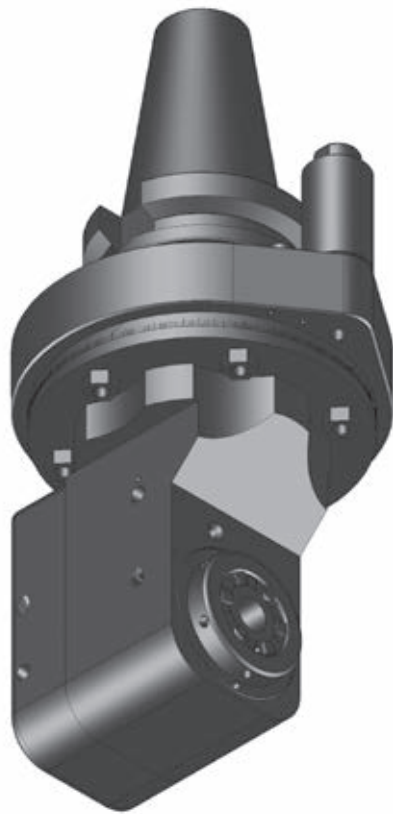
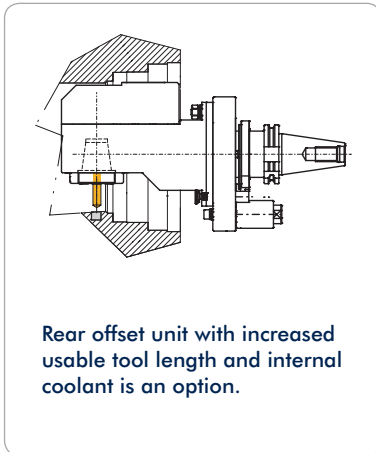


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	190	70	34	68	80	11,5	18
7	70 Nm	6.500	i = 1:1	190	70	39	78	80	13,5	18
9	150 Nm	4.000	i = 1:1	225	109	58	108	80	20,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135691	162826	
5	2 x mi 32	200	200	76,5	76,5	76,5	76,5	173513	162844	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135724	162832	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	173518	162849	
9	2 x ER 40	210	210	103,0	103,0	103,0	103,0	105788	162836	
9	2 x mi 50	250	250	116,0	116,0	116,0	116,0	173520	162853	

**MAS-BT 50 ZW**

**Angle Head 90°, Offset Type**



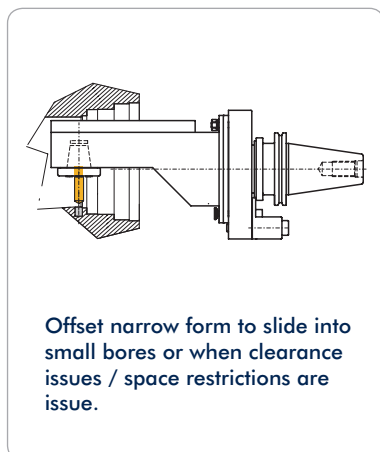
12

Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	195	79	28,5	57	80	11,5	18
7	70 Nm	6.000	i = 1:1	210	94	38,0	76	80	14,0	18
9	150 Nm	5.000	i = 1:1	270	110	52,0	104	80	19,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	57,0	57,0	35,8	41,6	105417	162865	162866
5	mi 40	133	133	57,0	57,0	50,3	50,3	173525	162891	171760
7	ER 32	128	128	77,5	77,5	32,2	38,0	105460	162944	174661
7	mi 50	152	152	77,5	77,5	55,0	55,0	173531	162902	135378
9	ER 40	140	140	89,0	89,0	31,0	34,8	105470	168456	162878
9	mi 63	165	165	89,0	89,0	48,3	48,3	173533	162908	162909

**MAS-BT 50 ZWS**

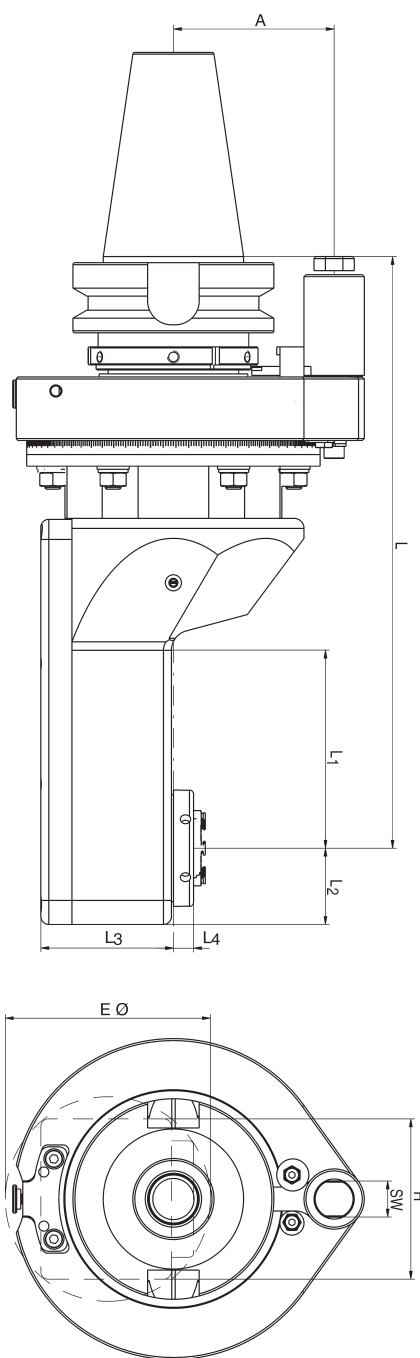
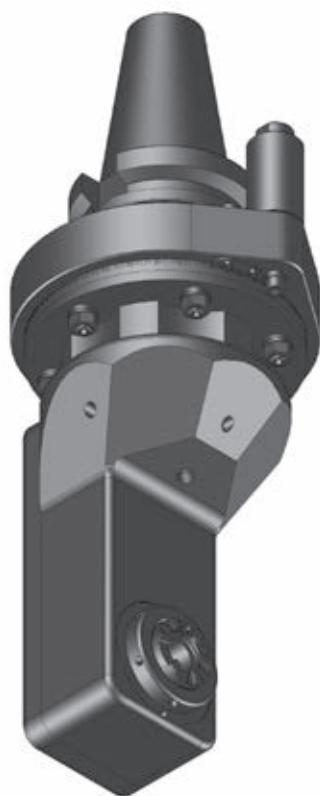
**Angle Head 90°, Offset Slim Type**



Offset narrow form to slide into small bores or when clearance issues / space restrictions are issue.



**Attention!**  
Reversal of rotation direction



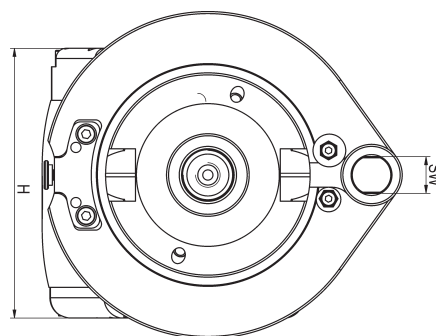
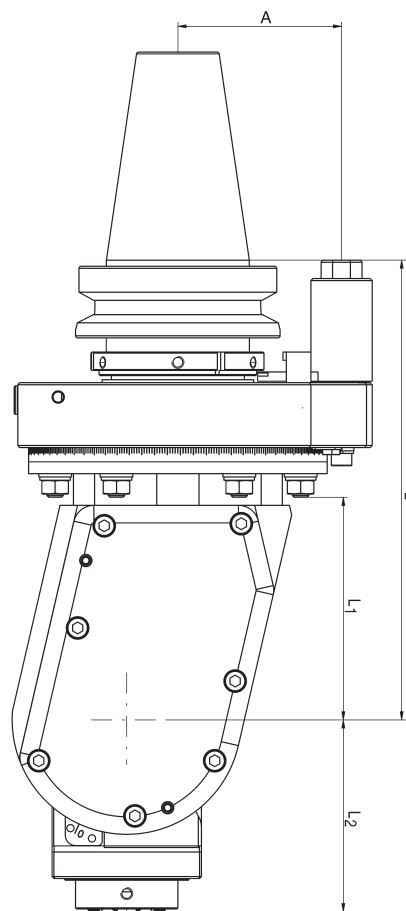
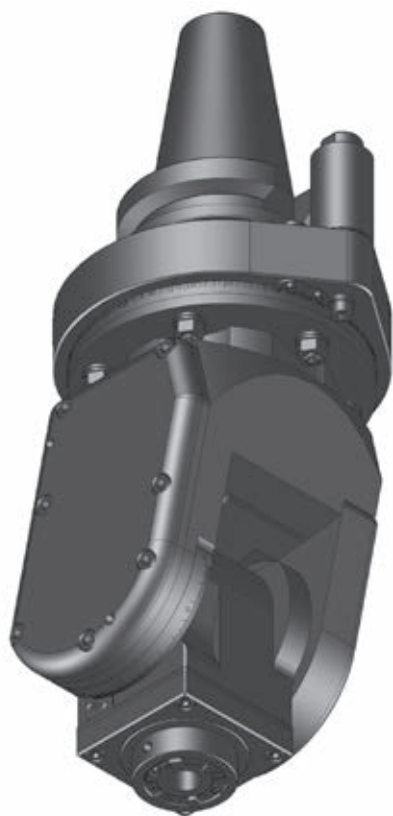
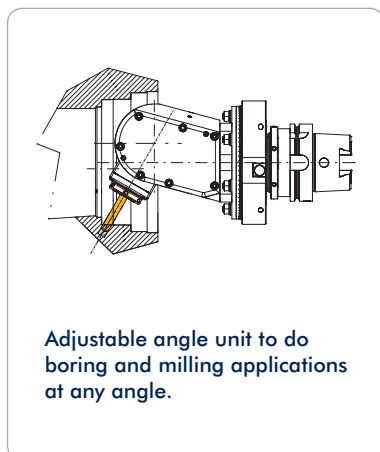
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	237,5	38	20	36	80	11,0	18
5	30 Nm	8.000	i = 1:1	225,0	76	28	56	80	12,5	18
7	70 Nm	6.000	i = 1:1	295,0	100	38	80	80	13,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49		-8,0		105652		
5	ER 25	82	82	65	65	10,0	10,0	135650	168453	
5	mi 40	125	125	65	65	23,5	23,5	173541	162940	
7	ER 32	102	102	66	66	13,0	13,0	105698	168454	
7	mi 50	135	135	66	66	29,0	29,0	173544	168460	

**MAS-BT 50**

**WS**

## Angle Head, Adjustable 0-98°

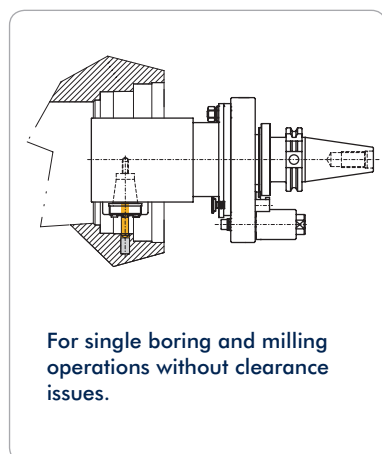


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	205	100	111	80	14,0	18
7	70 Nm	6.000	i = 1:1	225	109	132	80	16,0	18

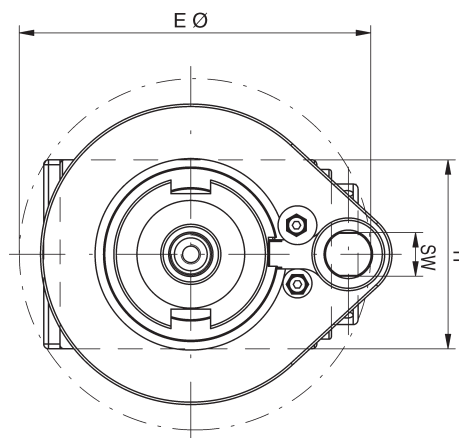
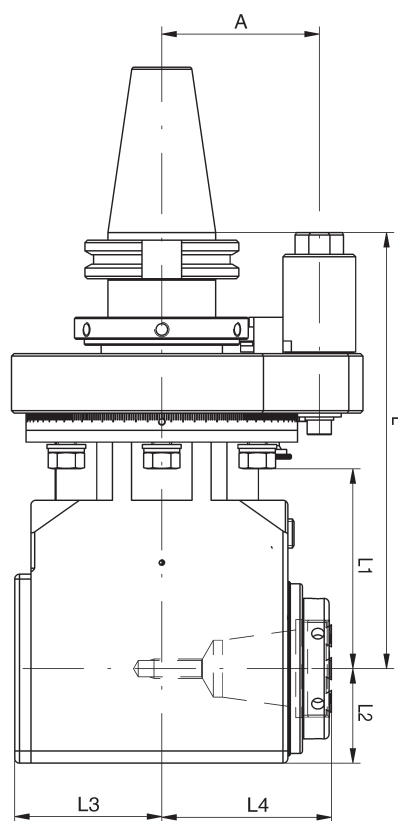
Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
5	ER 25	84	25	162970	105830	162972	162971
5	mi 40	97	25	162973	169979	162975	162974
7	ER 32	95	25	162985	105859		
7	mi 50	108	25	162988	167553		

**ANSI CAT 40 SW**

**Angle Head 90°**



**Attention!**  
Reversal of rotation direction



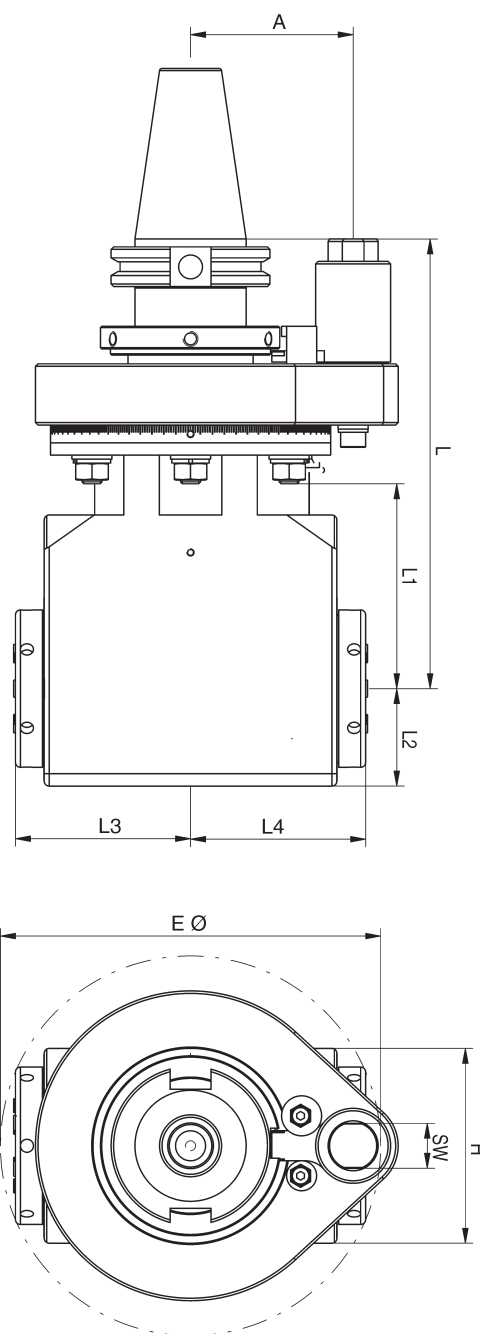
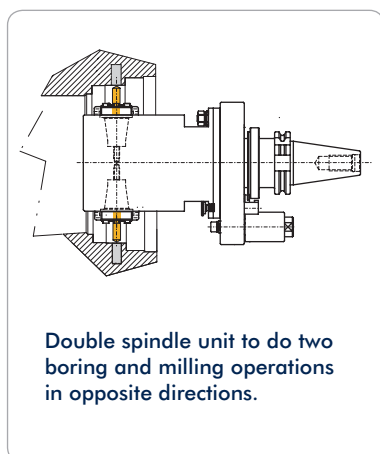
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
1	12 Nm	10.000	i = 1:1	180	80	22	44	65	6,0	18
5	30 Nm	8.000	i = 1:1	180	80	34	68	65	6,5	18
7	70 Nm	6.500	i = 1:1	180	80	39	78	65	8,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
1	ER 16	91	96	29,0	44	45,0	50	135465	162769	162776
5	ER 25	110	120	41,5	52	57,5	63	135432	183182	176443
5	mi 40	138	146	41,5	52	72,0	72	169839	173031	176540
7	ER 32	145	155	61,0	75	70,0	75	135477	162775	176444
7	mi 50	172	178	61,0	75	83,0	83	135485	105509	166537



**ANSI CAT 40 DW**

**Double Angle Head 90°**

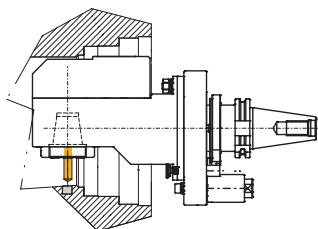


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	80	39	78	65	7,5	18
7	70 Nm	6.500	i = 1:1	180	80	39	78	65	8,5	18

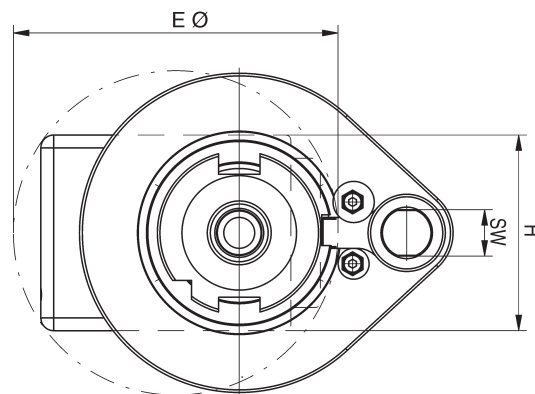
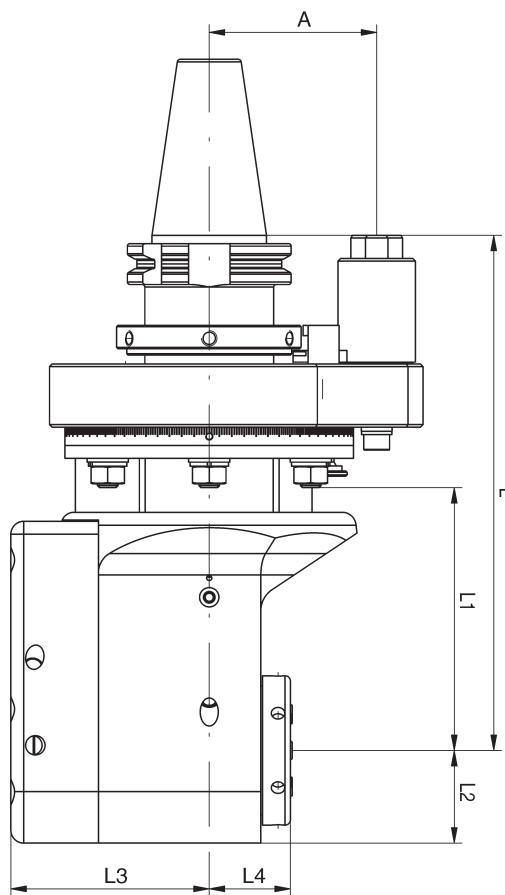
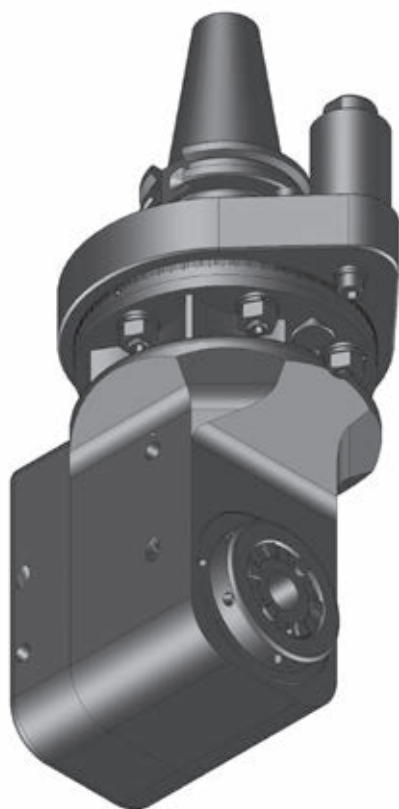
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135696	162822	
5	2 x mi 32	210	210	92,0	76,5	76,5	76,5	173508	162839	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135720	162828	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	173515	162846	

**ANSI CAT 40 ZW**

**Angle Head 90°, Offset Type**



Rear offset unit with increased usable tool length and internal coolant is an option.

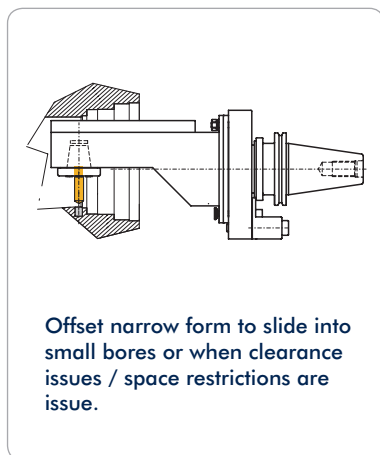


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	80	28,5	57	65	6,5	18
7	70 Nm	6.000	i = 1:1	198	100	38,0	76	65	8,5	18

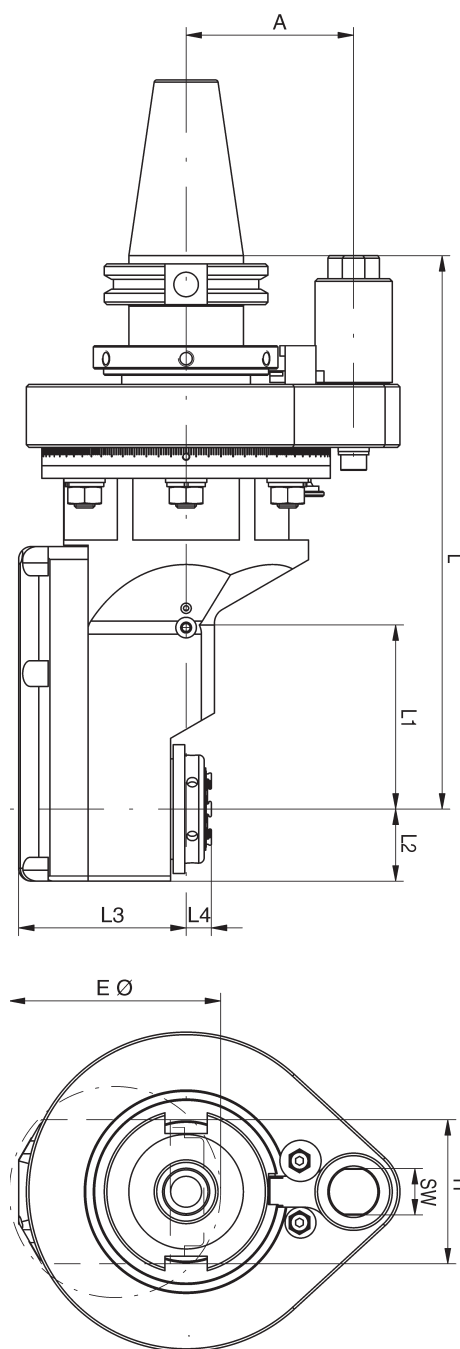
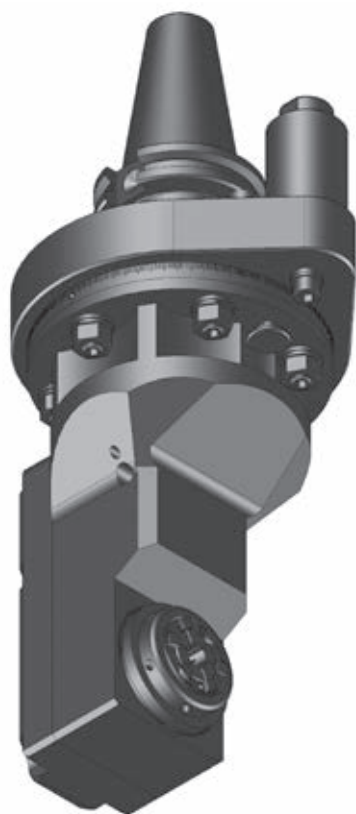
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	57,0	57,0	35,8	41,6	135401	162856	135415
5	mi 40	130	130	57,0	57,0	50,3	50,3	173521	162881	105451
7	ER 32	128	128	77,5	77,5	32,2	38,0	135391	162869	135417
7	mi 50	150	150	77,5	77,5	55,0	55,0	173526	162896	166538

**ANSI CAT 40 ZWS**

**Angle Head 90°, Offset Slim Type**



**Attention!**  
Reversal of rotation direction

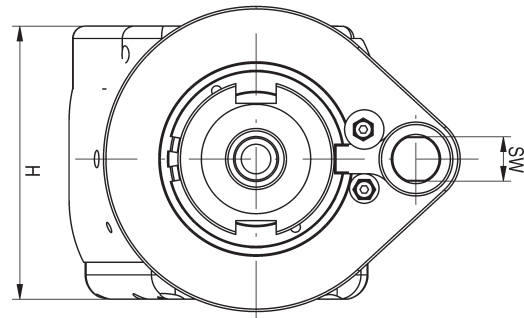
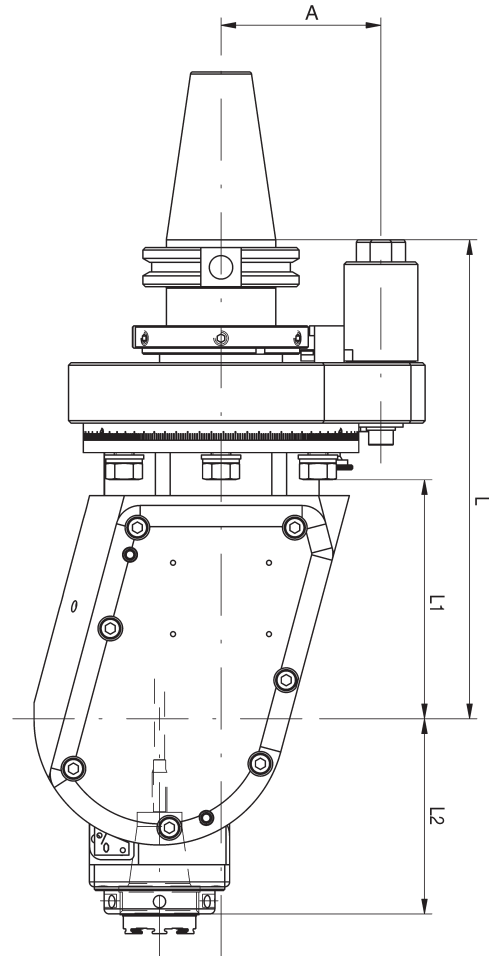
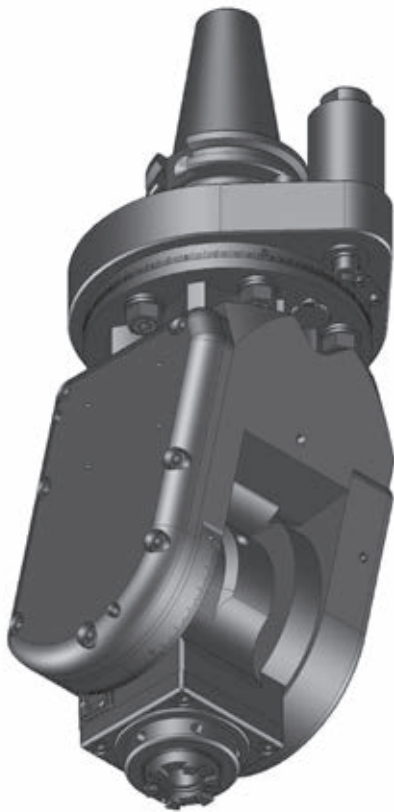
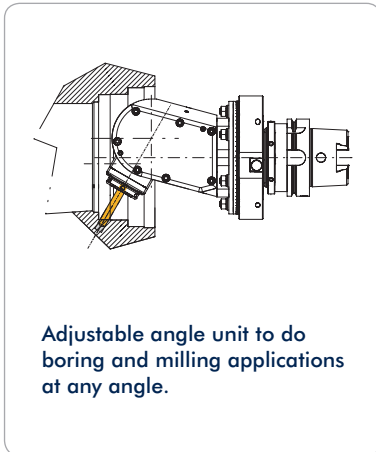


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	213	38	20	36	65	7,0	18
3	15 Nm	10.000	i = 1:1	225	80	24	48	65	6,0	18
5	30 Nm	8.000	i = 1:1	215	76	28	56	65	6,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49,0		-8,0		135613		
3	ER 20	75		54,5		11,2		135614		
3	mi 32	100		54,5		26,0		162929		
5	ER 25	82	82	65,0	65,0	10,0	10,0	135619	162923	
5	mi 40	125	125	65,0	65,0	23,5	23,5	173538	162935	

**ANSI CAT 40 WS**

**Angle Head, Adjustable 0-98°**

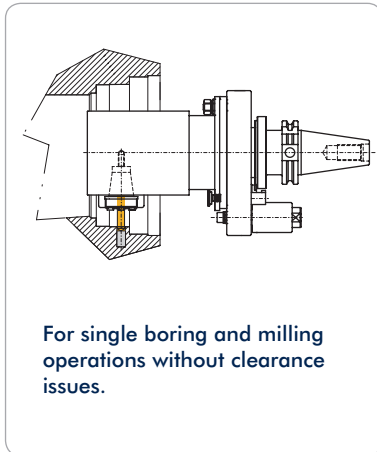


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
3	15 Nm	8.000 / 15.000	i = 1:1 / 1:2,25	189	91	96	65	8,0	18
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	195	96	111	65	9,6	18

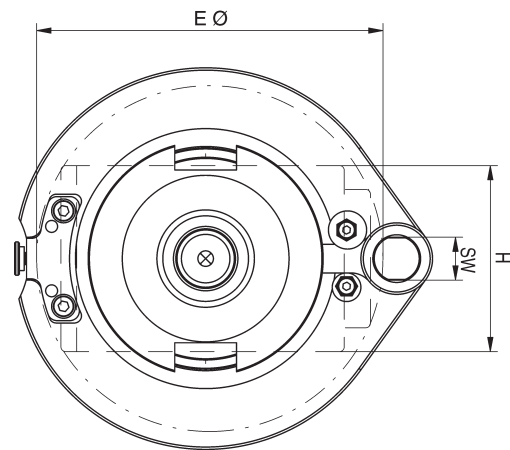
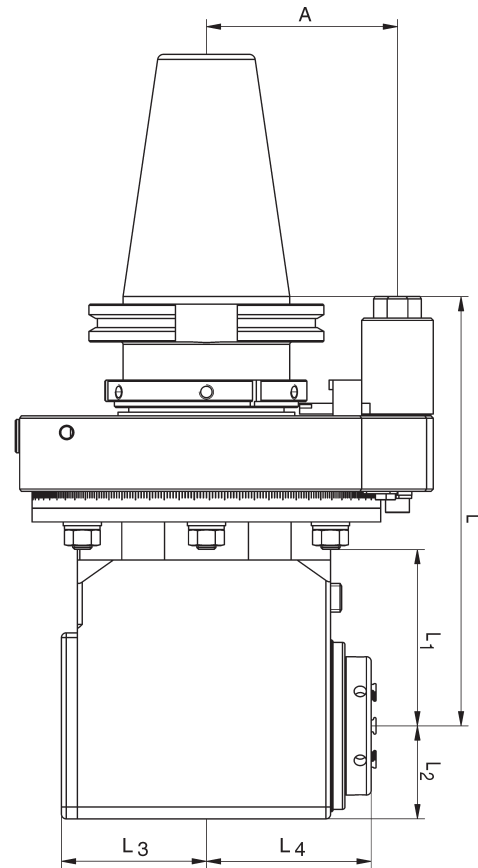
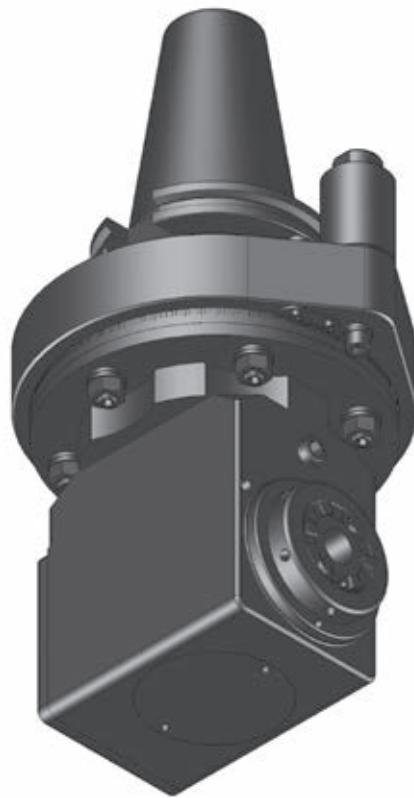
Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
3	ER 20	75,0	20	162797	135811	162800	162801
3	mi 32	82,9	20	156566	167896	156567	156568
5	ER 25	84,0	25	172227	135838	162717	135781
5	mi 40	97,0	25	162932	135817	162725	162724

**ANSI CAT 50 SW**

**Angle Head 90°**



**Attention!**  
Reversal of rotation direction

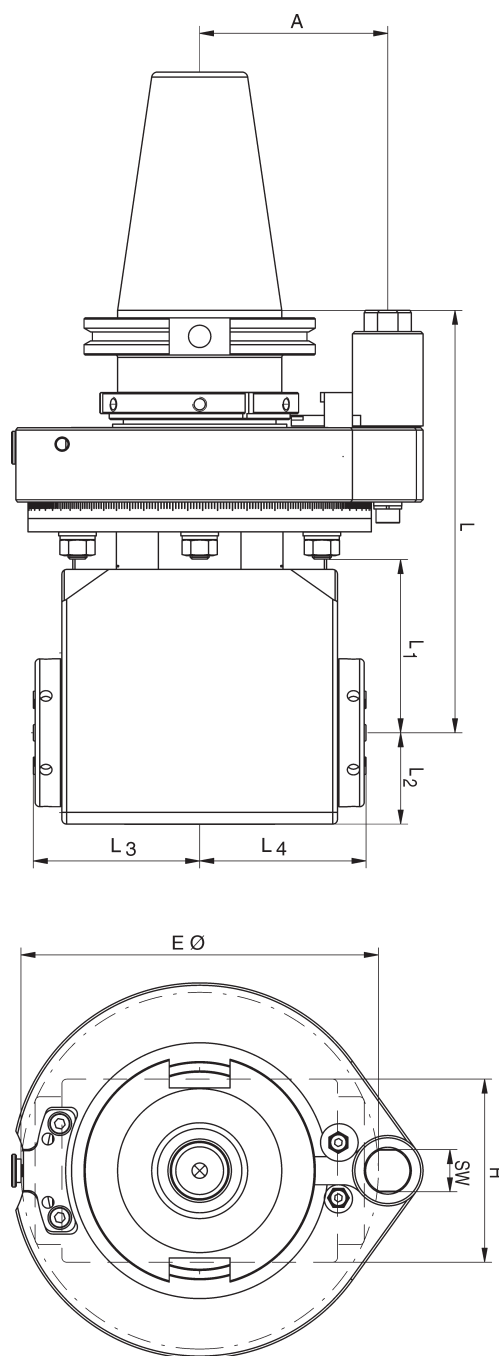
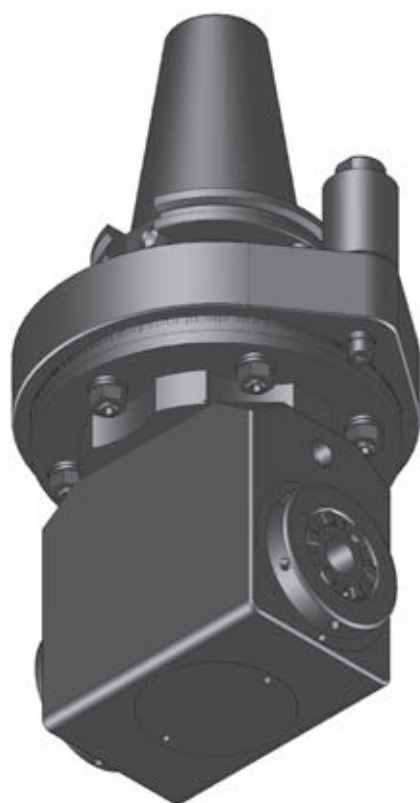
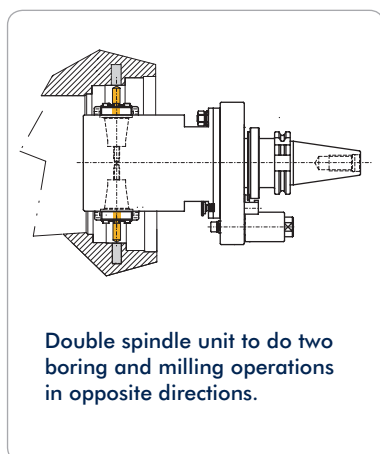


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	75	34	68	80	10,5	18
7	70 Nm	6.500	i = 1:1	180	75	39	78	80	12,0	18
9	150 Nm	5.000	i = 1:1	215	105	52	104	80	18,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	110	120	41,5	52	57,5	63,0	135420	162770	162771
5	mi 40	138	146	41,5	52	72,0	72,0	173068	162807	162808
7	ER 32	145	155	61,0	75	70,0	75,0	135471	162779	172905
7	mi 50	172	178	61,0	75	83,0	83,0	135472	162796	105525
9	ER 40	195	195	81,0	81	92,0	96,0	105553	162781	162782
9	mi 63	224	224	81,0	81	111,5	111,5	173505	162785	162786

**ANSI CAT 50 DW**

**Double Angle Head 90°**

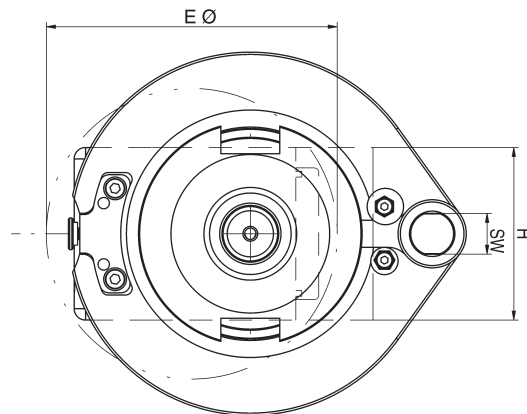
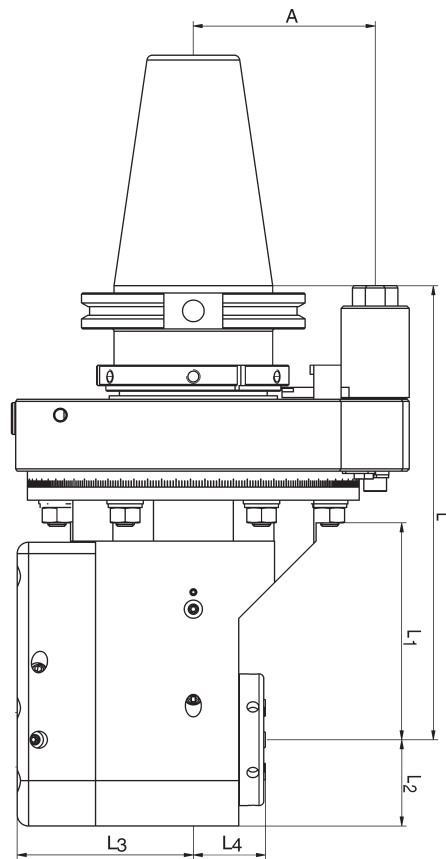
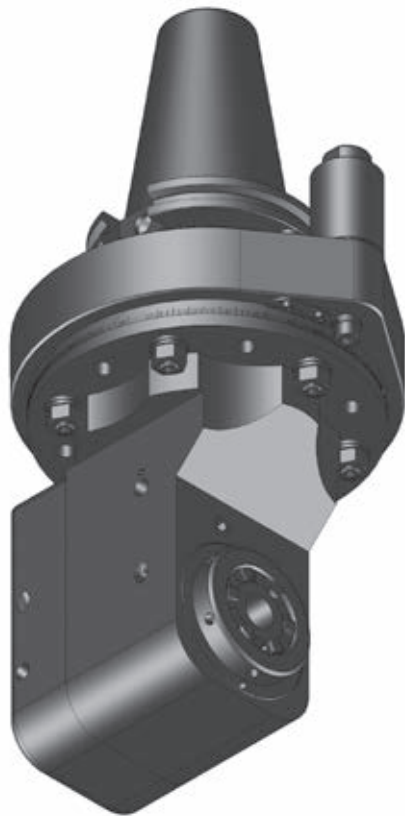
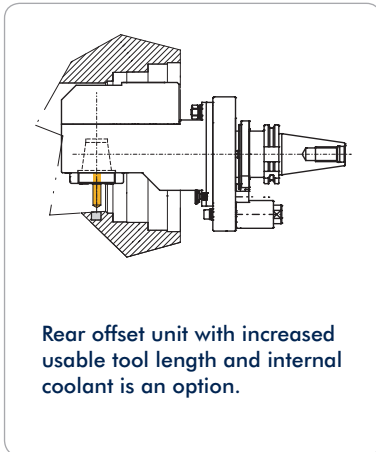


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	180	70	34	68	80	11,5	18
7	70 Nm	6.500	i = 1:1	180	70	39	78	80	13,5	18
9	150 Nm	4.000	i = 1:1	215	109	58	108	80	20,0	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	2 x ER 25	125	125	62,0	62,0	62,0	62,0	135723	135718	
5	2 x mi 32	200	200	76,5	76,5	76,5	76,5	173512	162843	
7	2 x ER 32	152	152	71,2	71,2	71,2	71,2	135725	162831	
7	2 x mi 40	220	220	88,0	88,0	88,0	88,0	173517	162848	
9	2 x ER 40	210	210	103,0	103,0	103,0	103,0	105789	162835	
9	2 x mi 50	250	250	116,0	116,0	116,0	116,0	173519	162852	

**ANSI CAT 50 ZW**

**Angle Head 90°, Offset Type**

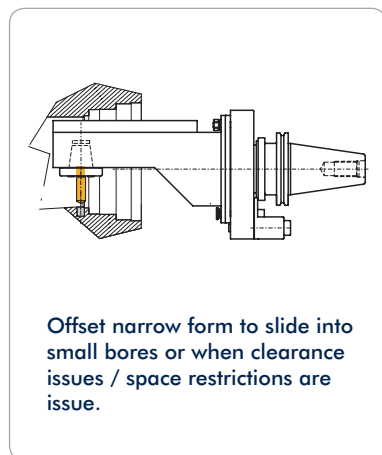


Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
5	30 Nm	8.000	i = 1:1	185	79	28,5	57	80	11,5	18
7	70 Nm	6.000	i = 1:1	200	94	38,0	78	80	14,0	18
9	150 Nm	5.000	i = 1:1	260	152	52,0	104	80	19,0	18

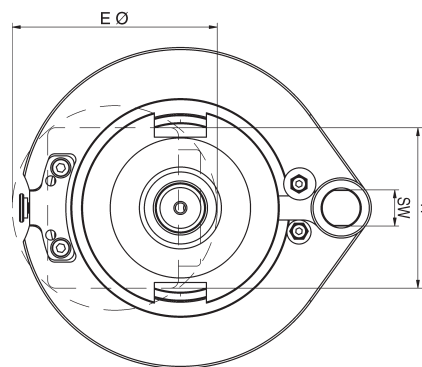
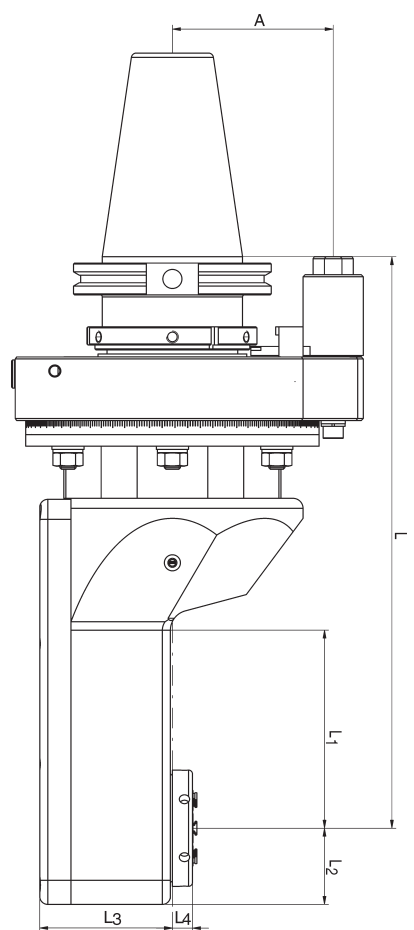
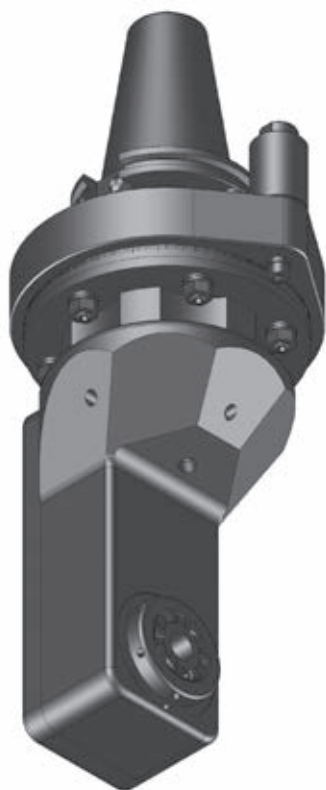
Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
5	ER 25	103	103	58,0	58,0	35,8	41,6	135371	162863	162864
5	mi 40	133	133	58,0	58,0	50,3	50,3	173524	162888	167846
7	ER 32	128	128	77,5	77,5	32,2	38,0	135374	162872	135379
7	mi 50	152	152	77,5	77,5	55,0	55,0	173530	162901	105480
9	ER 40	140	140	89,0	89,0	31,0	34,8	105448	162875	162877
9	mi 63	165	165	89,0	89,0	48,3	48,3	169045	162906	162907

**ANSI CAT 50 ZWS**

**Angle Head 90°, Offset Slim Type**



**Attention!**  
Reversal of rotation direction



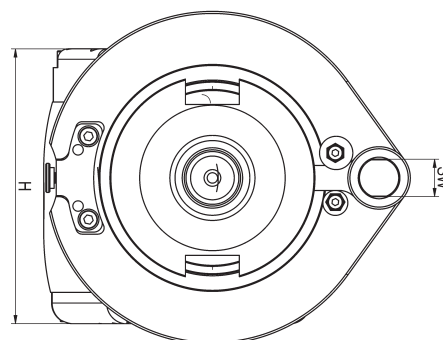
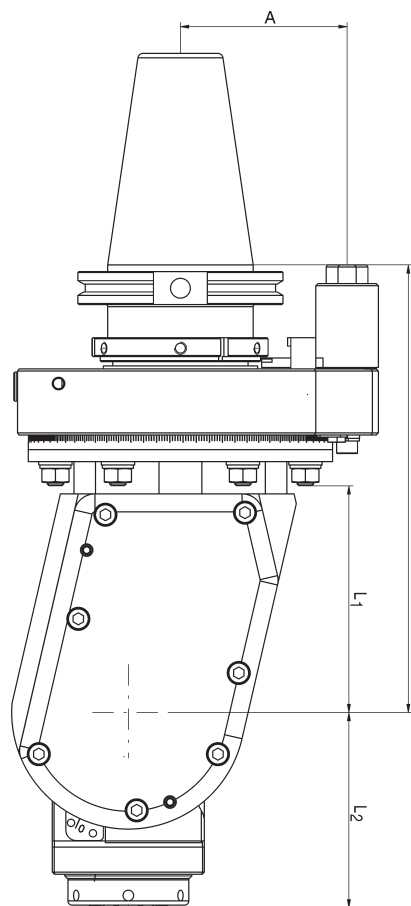
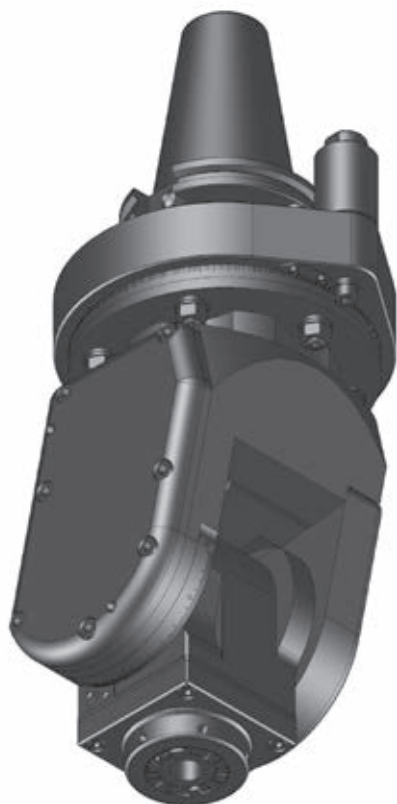
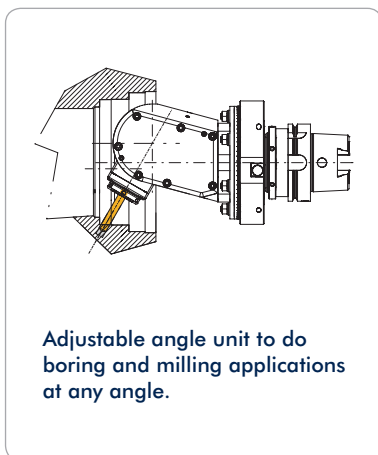
Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	L2 mm	H mm	A mm	kg	SW
0	6 Nm	12.000	i = 1:1,67	227,5	38	20	36	80	11,0	18
5	30 Nm	8.000	i = 1:1	215,0	76	28	56	80	12,5	18
7	70 Nm	6.000	i = 1:1	285,0	100	38	80	80	13,5	18

Size	Toolholder	Clearance dia. E mm		L3 mm		L4 mm		Order No.		
		without coolant	with coolant	without coolant	with coolant	without coolant	with coolant	without coolant	external coolant	internal coolant
0	ER 11	50		49		-8,0		135591		
5	ER 25	82	82	65	65	10,0	10,0	135620	167467	
5	mi 40	125	125	65	65	23,5	23,5	173540	162939	
7	ER 32	102	102	66	66	13,0	13,0	135653	162927	
7	mi 50	135	135	66	66	29,0	29,0	135638	162943	



**ANSI CAT 50 WS**

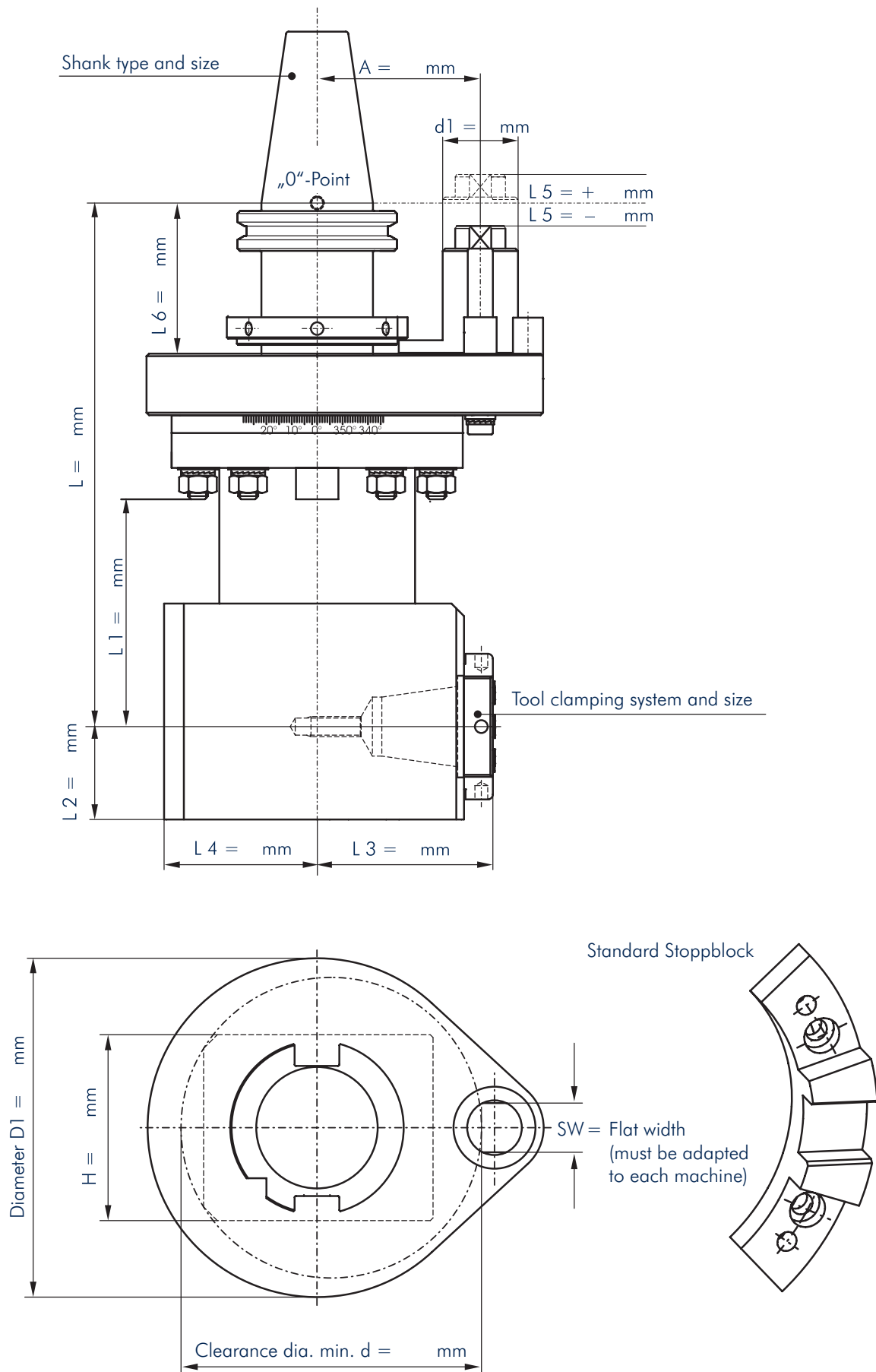
**Angle Head, Adjustable 0-98°**



Size	Torque max.	Rev. max. (r.p.m.)	Gear Ratio	L mm	L1 mm	H mm	A mm	kg	SW
5	30 Nm	7.000 / 13.500	i = 1:1 / 1:2,25	195	100	111	80	14,0	18
7	70 Nm	6.000	i = 1:1	215	109	132	80	16,0	18

Size	Toolholder	L2 mm	L4 mm	Order No. (i=1:1)		Order No. (i=1:2,25)	
				without coolant	internal coolant	without coolant	internal coolant
5	ER 25	84	25	162946	135839	162947	162948
5	mi 40	97	25	162951	169978	162950	162949
7	ER 32	95	25	162984	162983		
7	mi 50	108	25	162990	169941		

## Checklist for Inquiry



**Form for Inquiry**  
**Fax +49-831-57444-90**

Company	
Name	
Street	
Zip/City	
Phone	
Fax	
E-Mail	

**Specifications to the Machine**

Manufacturer	
Type, Year of manufacturing	
Machine No.	
Coolant pressure (internal coolant)	
Spindle speed max.	r.p.m
max. torque of the spindle	Nm
Support available	yes no
Stop block available	yes no
Stop block drawing	yes (please transmit) no
Tool places (magazine)	pieces

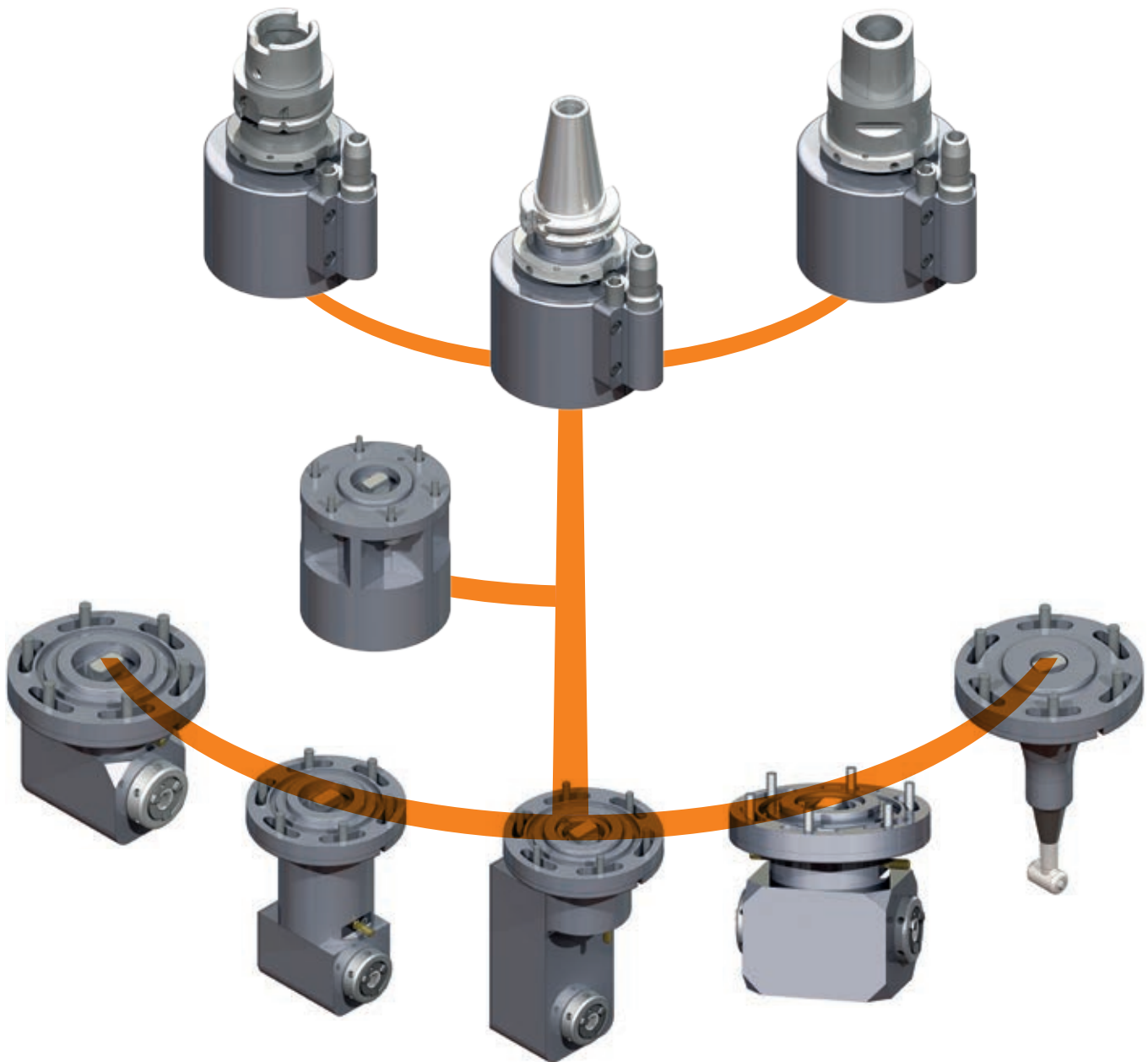
**Specifications to the Operation**

Operation	
(drilling, milling, turning, etc.)	
Material	
Tool	
Work piece drawing	yes (please transmit) no
Number of supports	

**Specifications to the Angle Head**

Spindle connection (Shank)	SK	ANSI-CAT	MAS-BT	HSK
Others				
Shank size (DIN)	others			
Gear ratio	i=			
Dimensions (see drawing page 92)				
Tool holder (One-spindle)				
Another tool holders (Multi-spindle)				
Locking	yes no			
Spindle speed wanted	r.p.m			
Torque moment wanted	Nm			
Offset A	mm			
Locking bolt Ø	mm			
Position to the zero point	+ -		mm	
Tool weight max.	kg			
Tool diameter max.	mm			
Automatic tool change	yes no			
Manual tool change	yes no			
Coolant	yes no			
max. coolant pressure through the spindle (internal)				
Coolant nozzle				
Coolant pipe				
Accessories				

## Modular Angle Heads



### Modular System

- Flexible for a multitude of applications
- Adaptable with a wide variety of machine tapers
- Bolt design mounting system for added rigidity
- Very cost effective when a variety of angle heads are required
- 360 degree body and head rotation
- Tapered positioning pin for alignment accuracy

### Angle Head Variants

- Compact design (SW) for added milling rigidity
- Extended length (LW) design for added reach
- Slim design (ZWS) for inner bore work
- Double output (DW) design eliminates the necessity for two heads
- NSK output for small internal engraving and light duty milling
- Quick Change system for operations involving multiple tools

# Table of Contents – Modular Angle Heads

## Tapers



	HSK-A			HSK-F			DIN 69871			MAS-BT			ANSI CAT			mimatic capto		
Coolant	HSK	ØE mm	Page	HSK	ØE mm	Page	SK	ØE mm		BT	ØE mm	Page	CAT	ØE mm	Page	Capto	ØE mm	Page
✓	63	100	246	80	100	247	40	100	248	40	100	249	40	100	250	C6	100	251
✓	100	100			100			50		100			50	100			50	

## Taper Extension



Coolant	L mm	ØE mm	Page
✓	100	100	254

## Pitch Positioning Pin



Fixation	Coolant	Page
SW 18	✓	252
Cone 20°	✓	253

## Positioning Block

for an exact spindle alignment and as torque support



For taper	Coolant	A mm	Page
40	✓	65	254
50	✓	100	254

## Angle Heads

Selection by Clearance Diameter E and Milling Depth L<sub>1</sub>

### Angle Head 90°

### Angle Head 90° Long Type

### Angle Head 90° Offset Slim Type

### Double Angle Head 90°

### NSK Adapter



Size	Tool holder	Coolant	SW			LW			ZWS			DW			NSK			
			ØE mm	L <sub>1</sub> mm	Page	ØE mm	L <sub>1</sub> mm	Page	ØE mm	L <sub>1</sub> mm	Page	ØE mm	L <sub>1</sub> mm	Page	ØE mm	L <sub>1</sub> mm	Page	
0	ER 11		100	45	255	100	100	256	100	110	257			258			259	
1	ER 16		100	45		100	100		100	135		100	45		100	133,75		
		✓	100	45		100	100		100	135		100	45					
3	ER 20		100	45		100	100		100	135		100	135					
		✓	100	45		100	100		100	135								
2	mi 32		100	45														
		✓	100	45														
		ER 25		100		65	100		115	100		165	100		65			
		✓	100	65		100	115		100	165		100	65					
2	mi 40		100	65														
		✓	100	65														

## Ordering example

### Ordering example for a complete tool. consisting of:

- Propulsion unit
- Pitch positioning pin
- Angle head



### Tapers

Pages 246-251



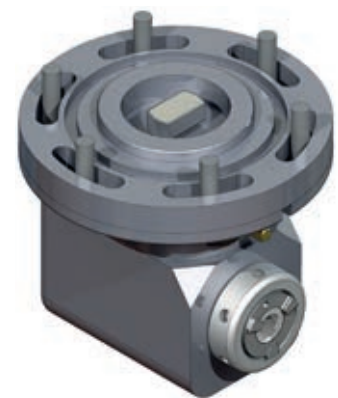
### Pitch Positioning Pins

Pages 252-253



### Angle Heads

Pages 255-259



## Coolant

The coolant can be different configurations.

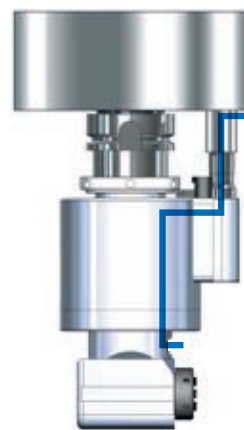
The choice of an internal or external coolant leakage via separate order numbers of the modular angle heads.

### Coolant supply through the spindle



External coolant

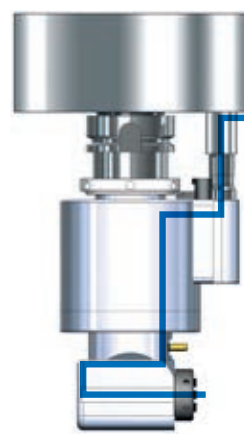
### Coolant supply through the positioning block



External coolant



Internal coolant

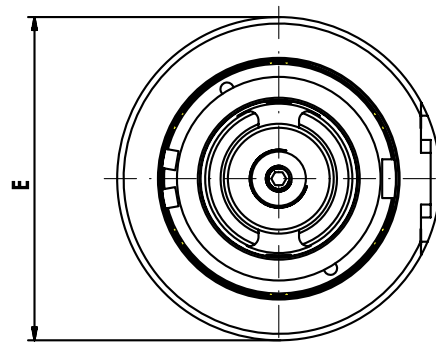
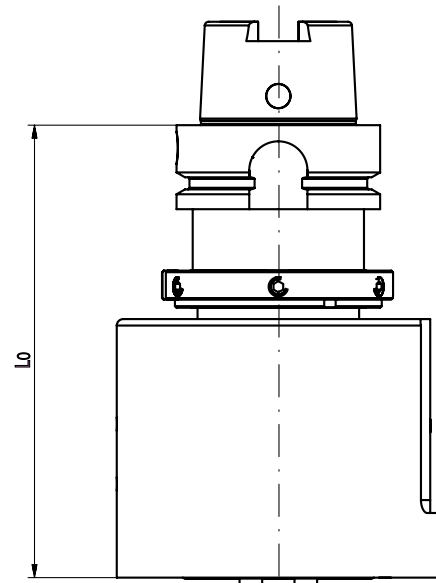


Internal coolant

**HSK-A**

**Tapers for Modular Angle Heads**

- Pitch positioning pins see page 252-253
- Positioning block see page 254



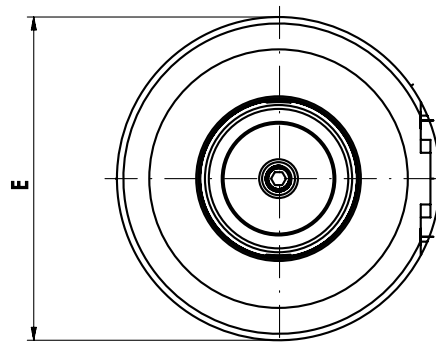
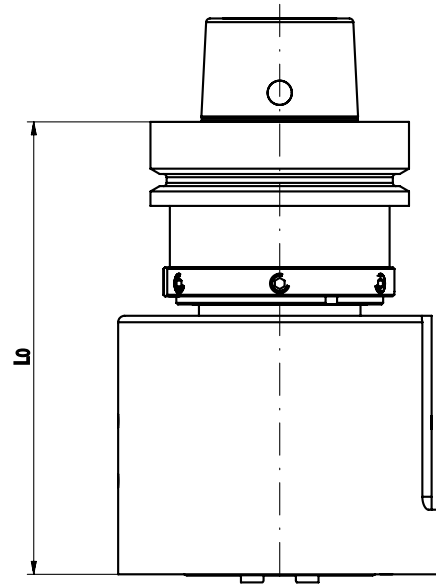
HSK-A	Clearance dia. E mm	L0 mm	Order No.	
			External Coolant	Internal Coolant
63	100	140	162737	162819
100	100	140	162738	162820



**HSK-F**

**Tapers for Modular Angle Heads**

- Pitch positioning pins see page 252-253
- Positioning block see page 254

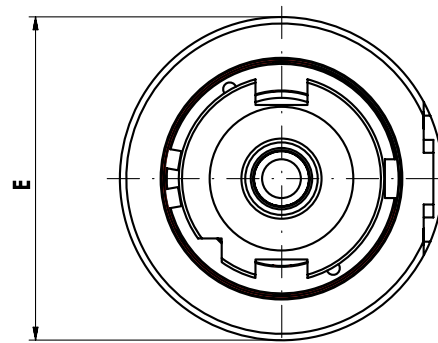
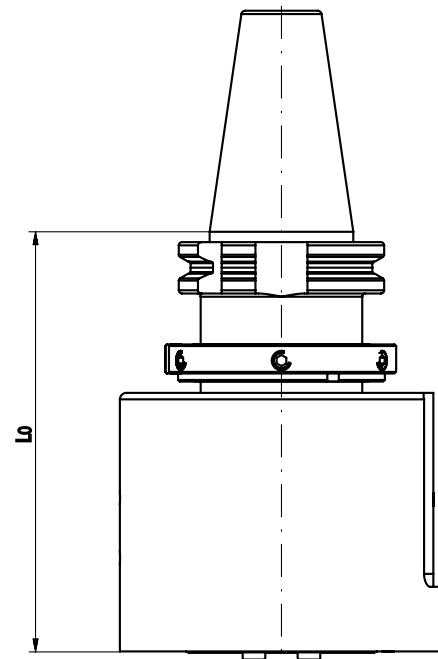


HSK-F	Clearance dia. E mm	L0 mm	Order No.	
			External Coolant	Internal Coolant
80	100	140	162704	

**DIN 69871**

**Tapers for Modular Angle Heads**

- Pitch positioning pins see page 252-253
- Positioning block see page 254

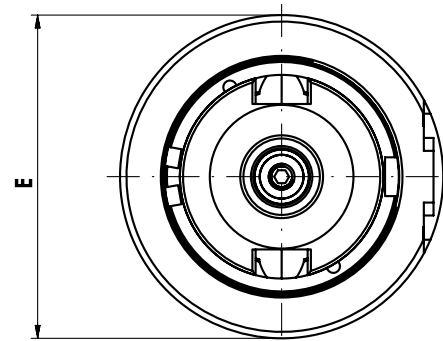
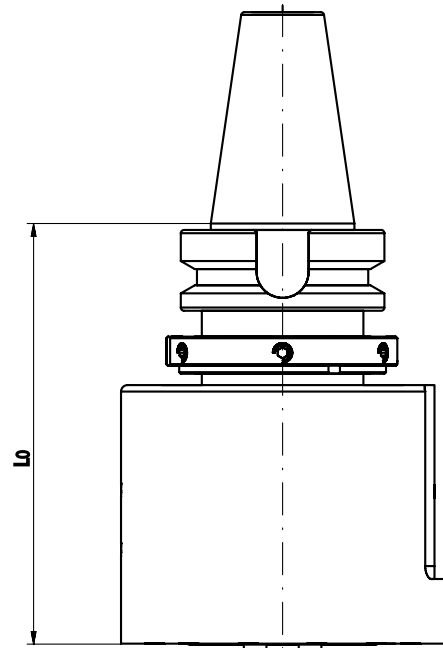


SK	Clearance dia. E mm	L0 mm	Order No.	
			External Coolant	Internal Coolant
40	100	130	162735	162817
50	100	130	162736	162818
50	100	130		

**MAS-BT**

**Tapers for Modular Angle Heads**

- Pitch positioning pins see page 252-253
- Positioning block see page 254

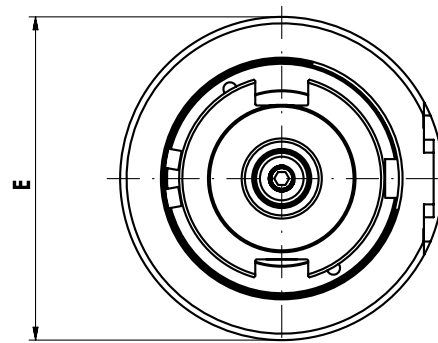
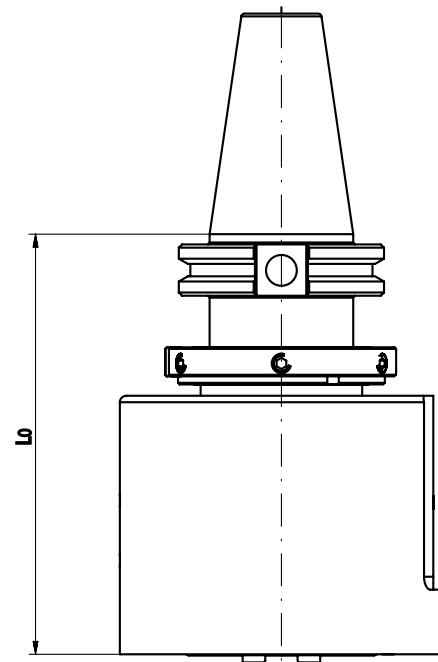


BT	Clearance dia. E mm	L0 mm	Order No.	
			External Coolant	Internal Coolant
40	100	130	162733	162815
50	100	140	162734	162816

**ANSI CAT**

**Tapers for Modular Angle Heads**

- Pitch positioning pins see page 252-253
- Positioning block see page 254

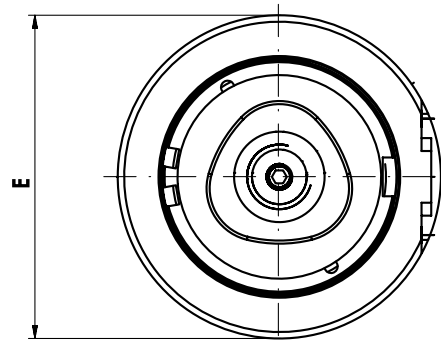
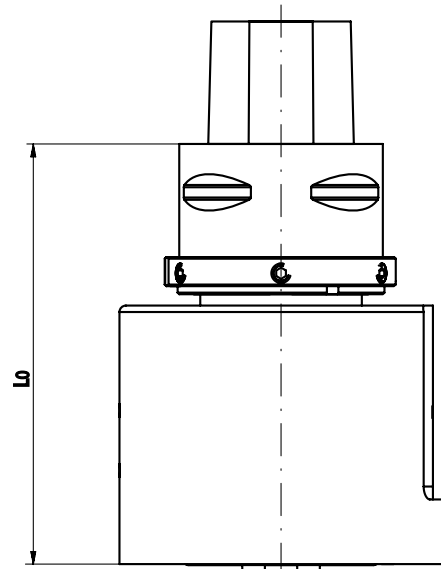


CAT	Clearance dia. E mm	L0 mm	Order No.	
			External Coolant	Internal Coolant
40	100	130	162731	162813
50	100	130	162732	162814
50	100	130		

**mimatic capto**

**Tapers for Modular Angle Heads**

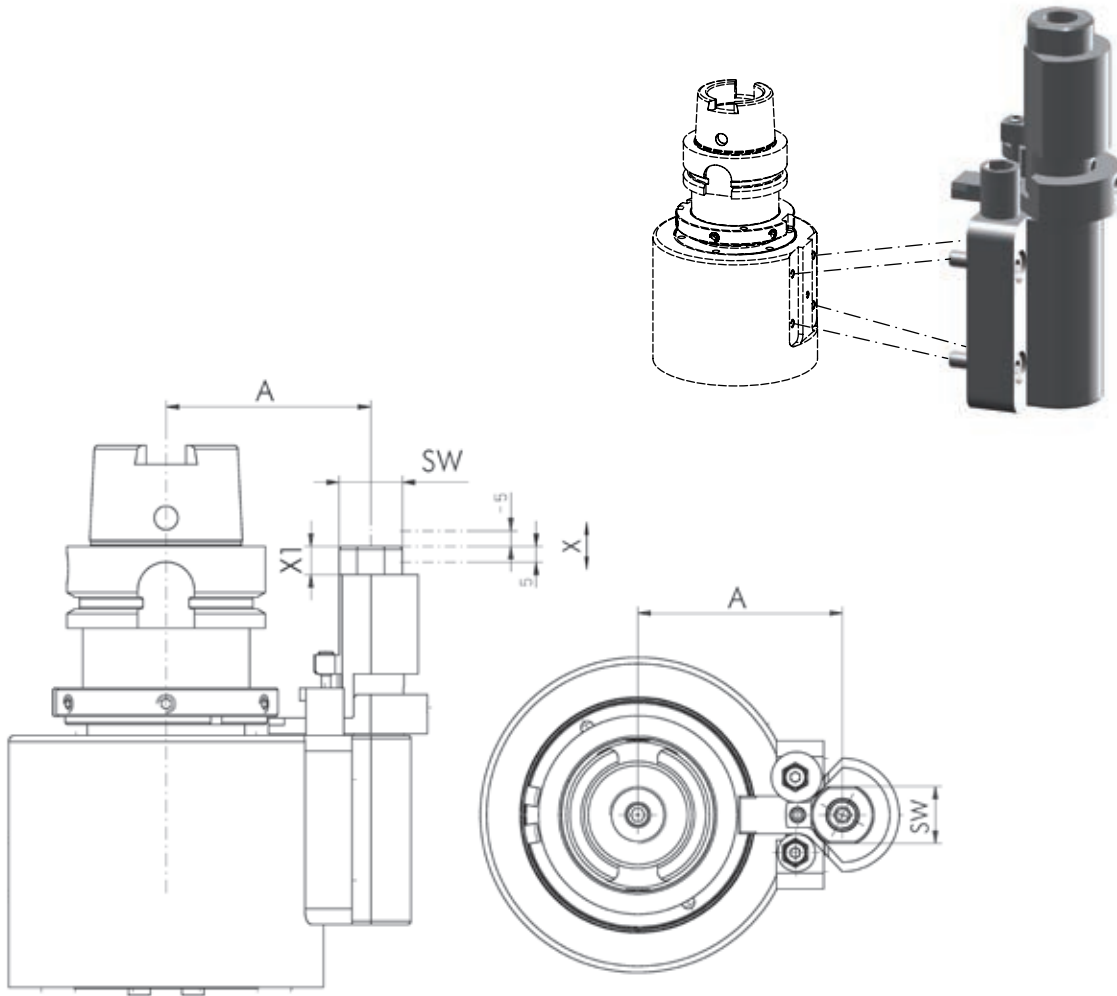
- Pitch positioning pins see page 252-253
- Positioning block see page 254



Capto	Clearance dia. E mm	L0 mm	Order No.	
			External Coolant	Internal Coolant
C6	100	130	178043	178044
C8	100	130	162739	162821

## Positioning Pin with SW 18 Fixation

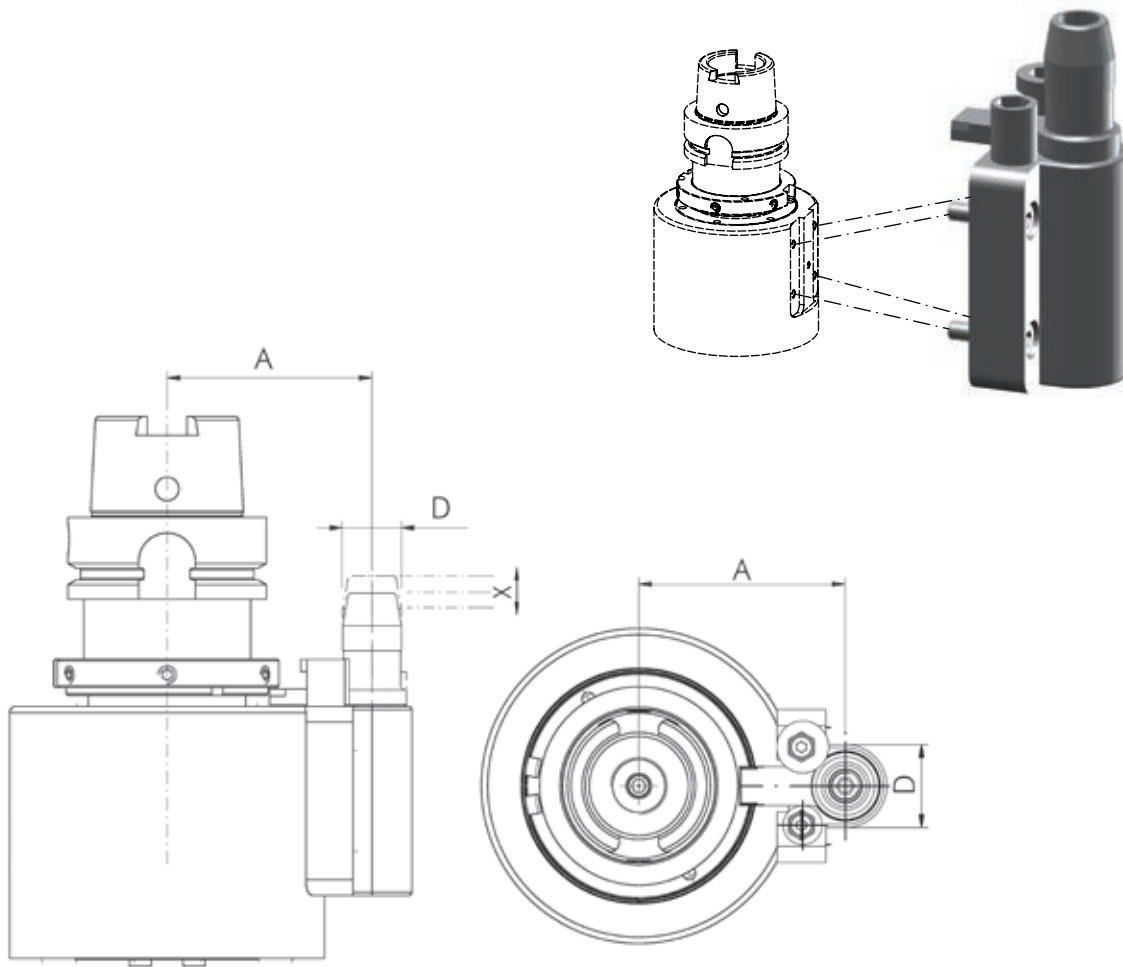
Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM



Suitable for Tapers	A mm	X mm (adjustable $\pm 5$ mm)	X1 mm	SW	Order No.
SK 40 / ANSI CAT 40 / BT 40 / C6	65	0	9	18	156683
SK 40 / ANSI CAT 40 / BT 40 / C6	65	12	9	18	156684
HSK 63	65	0	9	18	156685
HSK 63	65	12	9	18	156686
SK 50 / ANSI CAT 50 / C8	80	2	9	18	156687
SK 50 / ANSI CAT 50 / C8	80	12	9	18	156688
HSK 100 / BT 50	80	2	9	18	156691
HSK 100 / BT 50	80	12	9	18	156692

## Positioning Pin with 20° Cone Fixation

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » PolyREAM

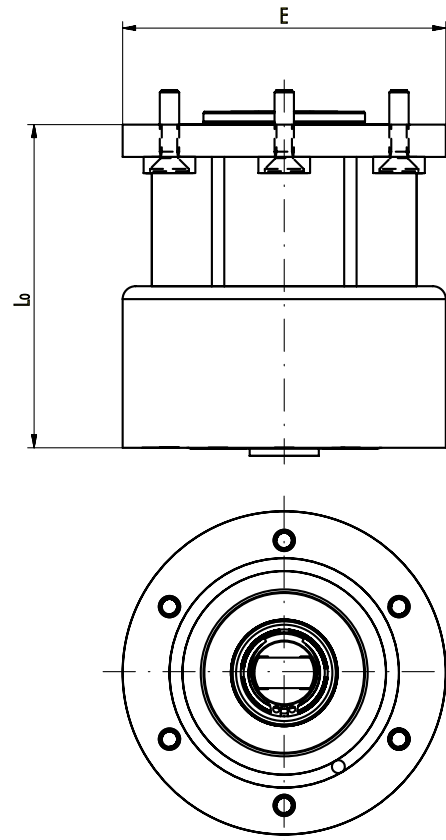
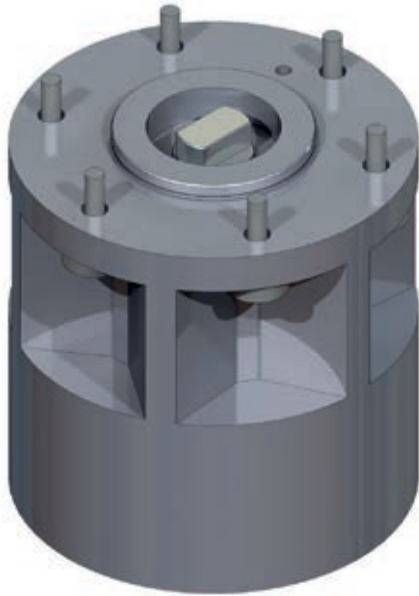


12

Suitable for Tapers	A mm	X mm	D (Pin) mm	Order No.
SK 40 / ANSI CAT 40 / BT 40 / C6	65	14,8	18	162741
SK 40 / ANSI CAT 40 / BT 40 / C6	80	8,3	28	162743
HSK 63	65	14,8	18	162740
SK 50 / ANSI CAT 50 / C8	110	8,3	28	162745
HSK 100 / BT 50	80	8,3	28	162742
HSK 100 / BT 50	110	8,3	28	162744

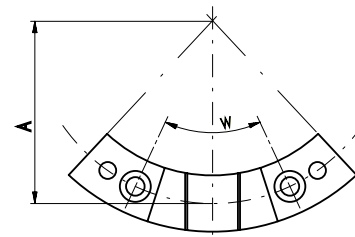
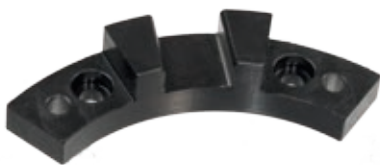
## Taper Extensions for Modular Angle Heads

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » PolyREAM

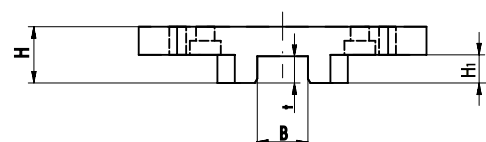


L	Clearance dia. E mm	L <sub>0</sub>	Order No.
75	100	75	162757
100	100	100	162758
200	100	200	162759

## Positioning Block



Order No.	A mm	B mm	t mm	H mm	H <sub>1</sub> mm	W mm
135277	65	18	9,5	20	10	50°
135278	80	18	9,5	20	10	45°

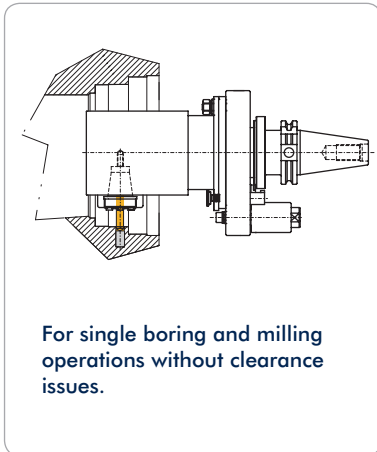




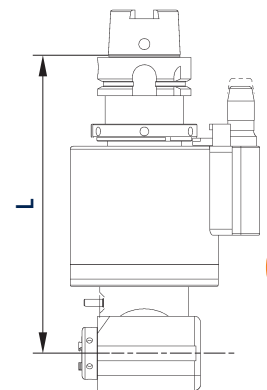
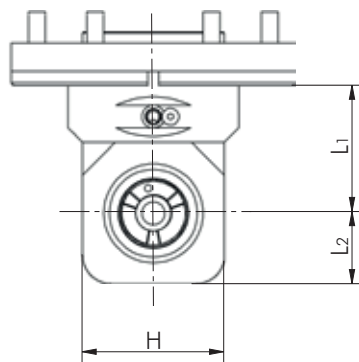
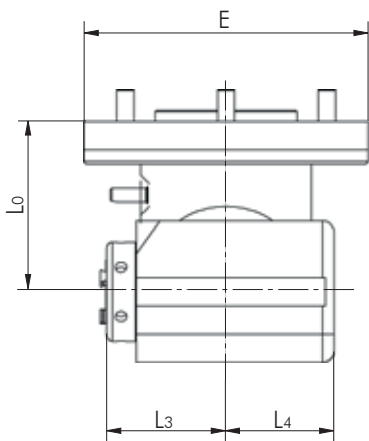
**SW**

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL » PolyREAM

**Angle Head 90°**



**Attention!**  
Reversal of rotation direction



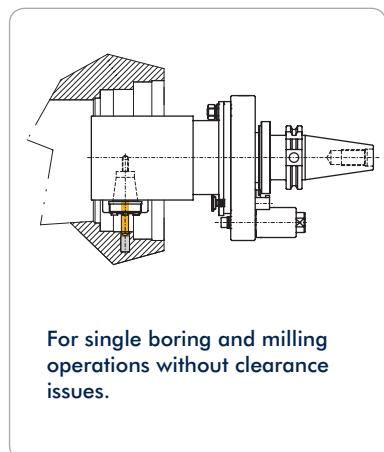
12

Size	Toolholder	Torque max.	Rev. max. (r.p.m.)	L0 mm	L1 mm	L2 mm	L3 mm	L4 mm		H mm	~ kg
								External Coolant	Internal Coolant		
0	ER 11	3 Nm	7.000	60	45	17	34	25	37	40	1,1
1	ER 16	10 Nm	6.000	60	45	25	42	38	50	50	1,4
1	ER 20	10 Nm	6.000	60	45	25	45	38	50	50	1,4
1	mi 32	10 Nm	6.000	60	45	25	59	38	50	50	1,7
2	ER 25	25 Nm	5.000	80	65	35	55	45,5	58	70	2,6
2	mi 40	25 Nm	5.000	80	65	35	71,5	45,5	58	70	3,0

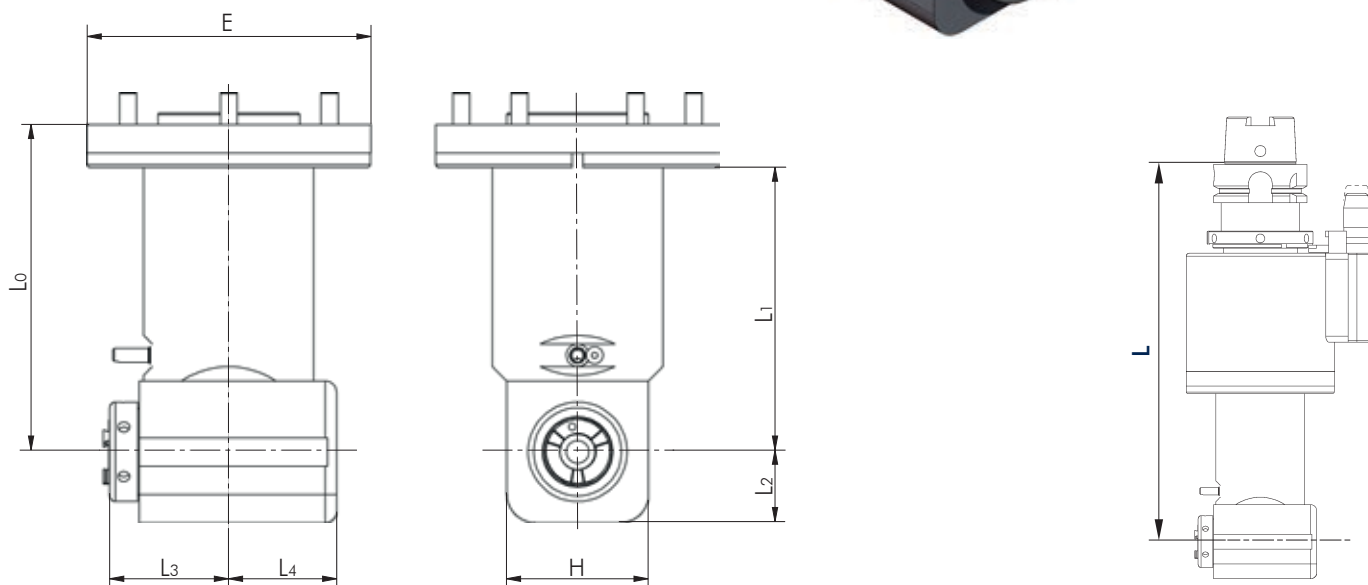
Size	Toolholder	Gear Ratio	Clearance dia. E mm	L mm SK 40,50 / BT 40,50 CAT 40,50 / C6, C8	L mm HSK 63, 80, 100	Order No.	
						External Coolant	Internal Coolant
0	ER 11	i = 1:1	100	190	200	162748	159987
1	ER 16	i = 1:1	100	190	200	162760	162763
1	ER 20	i = 1:1	100	190	200	162749	162889
1	mi 32	i = 1:1	100	190	200	178045	159992
2	ER 25	i = 1:1	100	210	220	162761	162765
2	mi 40	i = 1:1	100	210	220	178047	159994

**LW**

## Angle Head 90°, Long Type



**Attention!**  
Reversal of rotation direction



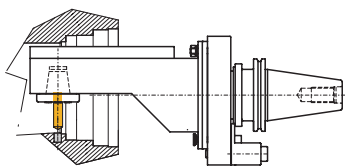
Size	Toolholder	Torque max.	Rev. max. (r.p.m.)	L0 mm	L1 mm	L2 mm	L3 mm	L4 mm External Coolant	Internal Coolant	H mm	~ kg
0	ER 11	3 Nm	7.000	115	100	17	34	25	37	40	1,5
1	ER 16	10 Nm	6.000	115	100	25	42	38	50	50	3,4
1	ER 20	10 Nm	6.000	115	100	25	45	38	50	50	3,6
1	mi 32	10 Nm	6.000	115	100	25	59	38	50	50	3,7
2	ER 25	25 Nm	5.000	130	115	35	55	45,5	58	70	3,2
2	mi 40	25 Nm	5.000	130	115	35	71,5	45,5	58	70	3,6

Size	Toolholder	Gear Ratio	Clearance dia. E mm	L mm SK 40,50 / BT 40,50 CAT 40,50 / C6, C8	L mm HSK 63, 80, 100	Order No.	
						External Coolant	Internal Coolant
0	ER 11	i = 1:1	100	245	255	162706	159988
1	ER 16	i = 1:1	100	245	255	162707	159989
1	ER 20	i = 1:1	100	245	255	162708	159990
1	mi 32	i = 1:1	100	245	255	178046	159993
2	ER 25	i = 1:1	100	260	270	162710	159991
2	mi 40	i = 1:1	100	260	270	178048	159995

**ZWS**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » PolyREAM

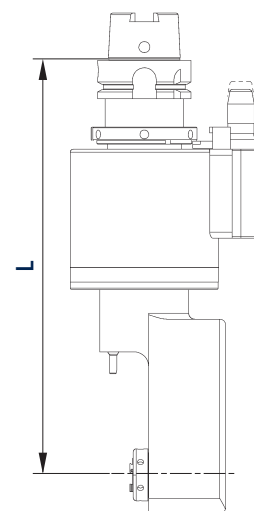
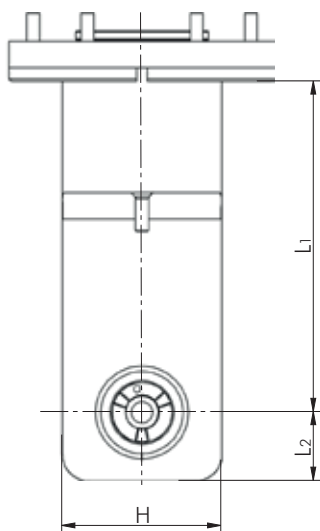
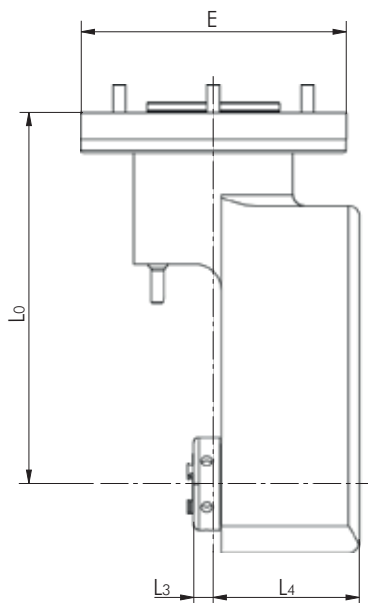
## Angle Head 90°, Offset Slim Type



Offset narrow form to slide into small bores or when clearance issues / space restrictions are issue.



**Attention!**  
Reversal of rotation direction



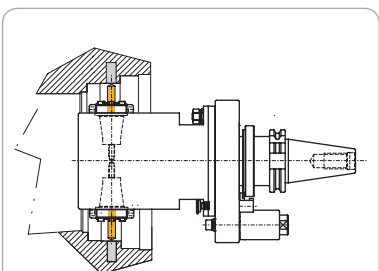
12

Size	Toolholder	Torque max.	Rev. max. (r.p.m.)	L0 mm	L1 mm	L2 mm	L3 mm	L4 mm	H mm	~ kg
0	ER 11	3 Nm	7.000	125	110	195	2,7	42	37	1,5
1	ER 16	10 Nm	6.000	150	135	26	5,0	53	53	2,5
1	ER 20	10 Nm	6.000	150	135	26	9,5	53	53	2,5
2	ER 25	25 Nm	5.000	180	165	29	7,0	67	60	3,5

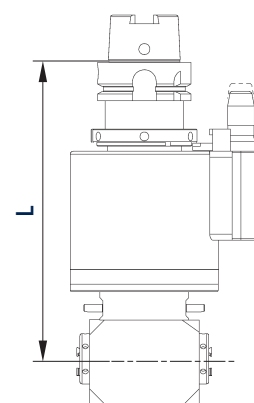
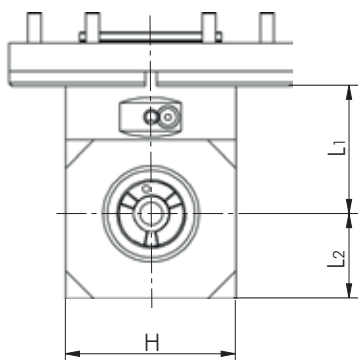
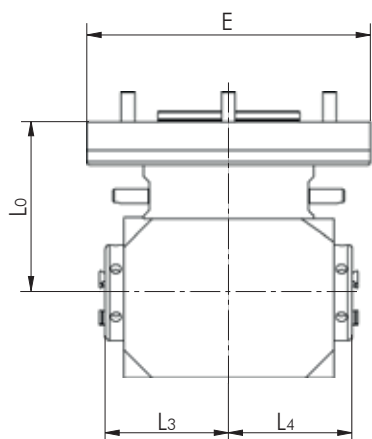
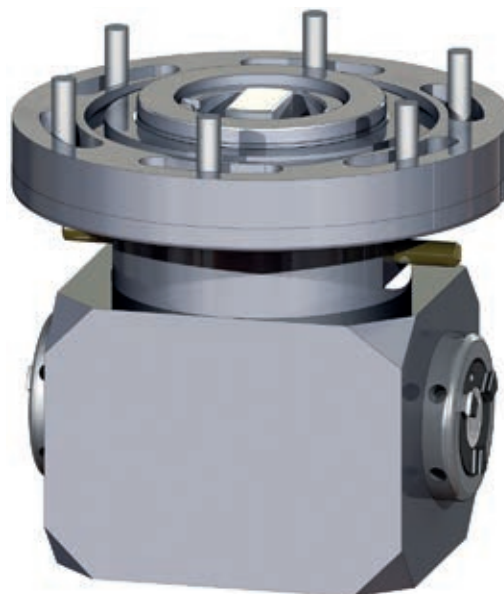
Size	Toolholder	Gear Ratio	Clearance dia. E mm	L mm		Order No.	
				SK 40,50 / BT 40,50 CAT 40,50 / C6, C8	HSK 63, 80, 100	External Coolant	Internal Coolant
0	ER 11	i = 1:1	100	253	263	162716	
1	ER 16	i = 1:1	100	270	280	162000	
1	ER 20	i = 1:1	100	270	280	162751	
2	ER 25	i = 1:1	100	310	320	178049	

**DW**

**Double Angle Head 90°**



Double spindle unit to do two boring and milling operations in opposite directions.



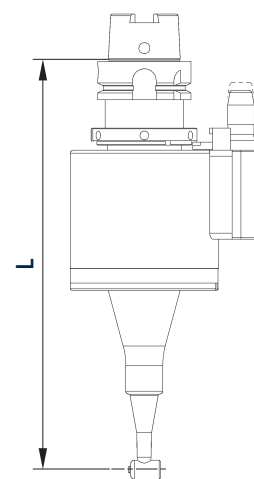
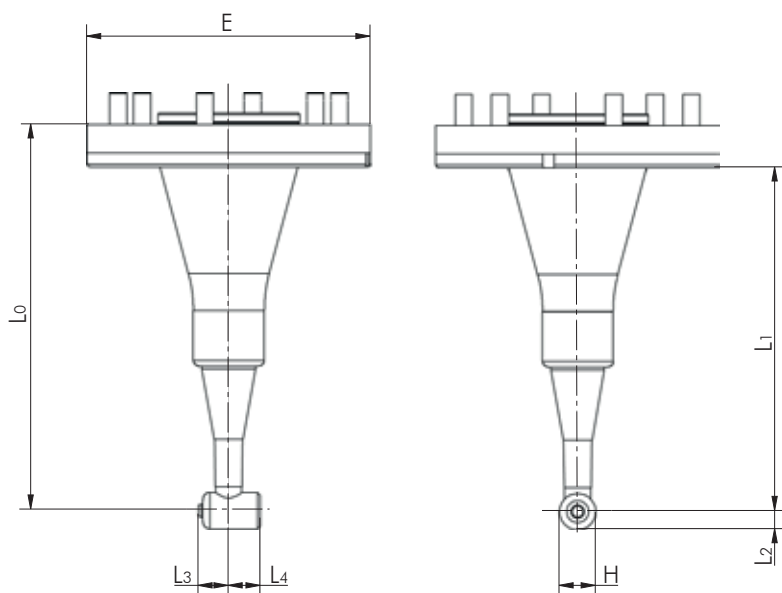
Size	Toolholder	Torque max.	Rev. max. (r.p.m.)	L0 mm	L1 mm	L2 mm	L3 mm	L4 mm	H mm	~ kg
1	ER 16	10 Nm	6.000	60	45	29	43,5	43,5	52	1,8
2	ER 25	30 Nm	5.000	80	65	39	58	58	70	3,2

Size	Toolholder	Gear Ratio	Clearance dia. E mm	L mm		Order No.	
				SK 40,50 / BT 40,50 CAT 40,50 / C6, C8	HSK 63, 80, 100	External Coolant	Internal Coolant
1	ER 16	i = 1:1	100	190	200	162754	
2	ER 25	i = 1:1	100	210	220	162755	

**NSK**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » PolyREAM

## NSK Adapters



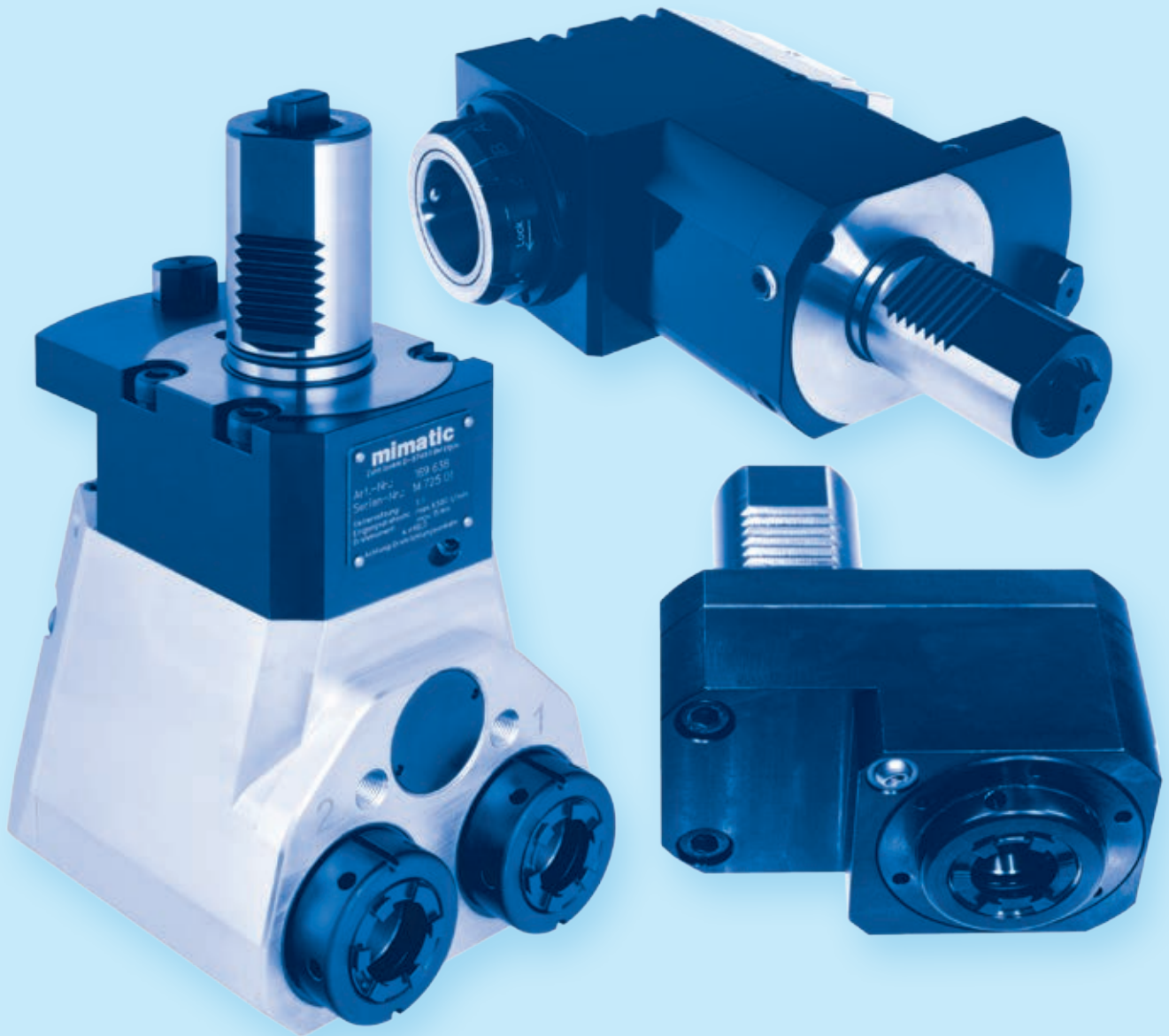
12

Size	Toolholder	Torque max.	Rev. max. (r.p.m.)	L0 mm	L1 mm	L2 mm	L3 mm	L4 mm	Ø H mm	~ kg
1*	NSK - M17	1 Nm	10.000	148,75	133,75	6,35	10,16	10,16	12,7	1,3
1*	NSK - M17	1 Nm	4.255 / 20.000	173,75	158,75	6,35	10,16	10,16	12,7	1,6

Size	Toolholder	Gear Ratio	Clearance dia. E mm	L mm		Order No.	
				SK 40,50 / BT 40,50 CAT 40,50 / C6, C8	HSK 63, 80, 100	External Coolant	Internal Coolant
1*	NSK - M17	i = 1:1	100	266,05	276,05	160250	
1*	NSK - M17	i = 1:4,7	100	291,05	301,05	160251	

\* Units comes standard with NSK model # IC-300

Live Tools for CNC Turning Machines



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Selection According to Machine and Turret Type

		Type	Page
		QTNX 100 + SQT 10	270-277
		QTNX 200 / 250 + SQT 15 + SQ 200 / 250	278-287
		QTNX 300 / 350 / 400 / 450 + SQT 28 / 30	288-293
		QT Smart 100 / 200 / 300 / 350	294-302
		Multiplex 610 / 6100 / 6200 + HQ 150	304-312
		Multiplex 620 / 6200 + HQ 200	314-323
		Multiplex 630 / 6300	324-327
		Integrex IV ST + Multiplex 8200	328-331
		LB / LU 200 - M / ECO - M	332-338
		LB / LU 300 - M/MY	340-345
		LB - 300 - MW/MYW / LT 300 - M/MY	346-350
		LVT 300 - M	352-355
		LB / LU 400 - M	356-359
		LB 3000 + LT 2000	360-368
		DIN 5482 - Disc-type Turrets VDI 30/40/50/60	370-398
		DIN 5480 - Star-type Turrets VDI 30/40	400-419
		VL 3 / 5	420-427
		VSC 200 / 250	420-427
		VSC 315 / 400 / 500	428-434
		VT 2 / VL 2 / VL 2P / VTC 100	436-439
		VT 4 / VTC 200	440-443
		NL 1500 / 2000 / 2500 / 3000	444-448
		NZ 1500 / 2000	450-455
		ST 20 / ST 30	456-459

## Selection According to Manufacturers









see SAUTER tools






## Selection According to Tool Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

		Manufacturer	Page
<b>Straight Unit</b>		MAZAK OKUMA SAUTER EMAG MORI SEIKI HAAS	296, 300 334, 342, 348, 354, 358, 362, 366 372, 380, 388, 396, 402, 412 422, 430, 438, 442 446, 452 458
<b>Straight Unit, Offset Type</b>		MAZAK OKUMA EMAG	272, 280, 290, 306-307, 316-317, 326, 330 335, 343 423
<b>Angle Unit</b>		MAZAK OKUMA SAUTER EMAG MORI SEIKI HAAS	273, 281, 291, 297, 301, 308-309, 318-319, 327, 331 336, 344, 349-350, 355, 359, 363, 367 373, 381, 389, 397, 403-404, 413-414 424, 431, 439, 443 447, 453 459
<b>Angle Unit, Offset Type</b>		OKUMA SAUTER EMAG	337 374, 382, 390, 405-406, 415-416 425, 432
<b>Angle Unit, 2-Axis</b>		MAZAK OKUMA SAUTER MORI SEIKI	274, 282, 320 368 407, 417 448, 454
<b>Angle Unit, adjustable 0-100°</b>		MAZAK OKUMA SAUTER EMAG MORI SEIKI	275, 283, 302, 310, 321 338, 345 375, 383, 391, 398, 408, 418 426, 433 455
<b>Y-Unit, adjustable ± 90°</b>		MAZAK	276, 284, 311, 322
<b>Saw Blade Holder</b>		MAZAK SAUTER EMAG	277, 285, 312, 323 376, 384, 392, 409, 419 427, 434
<b>Straight Unit, Twin Type</b>		MAZAK	286, 292
<b>Angle Unit, Twin Type</b>		MAZAK	287, 293

## Economical Complete Machining with Live Tools

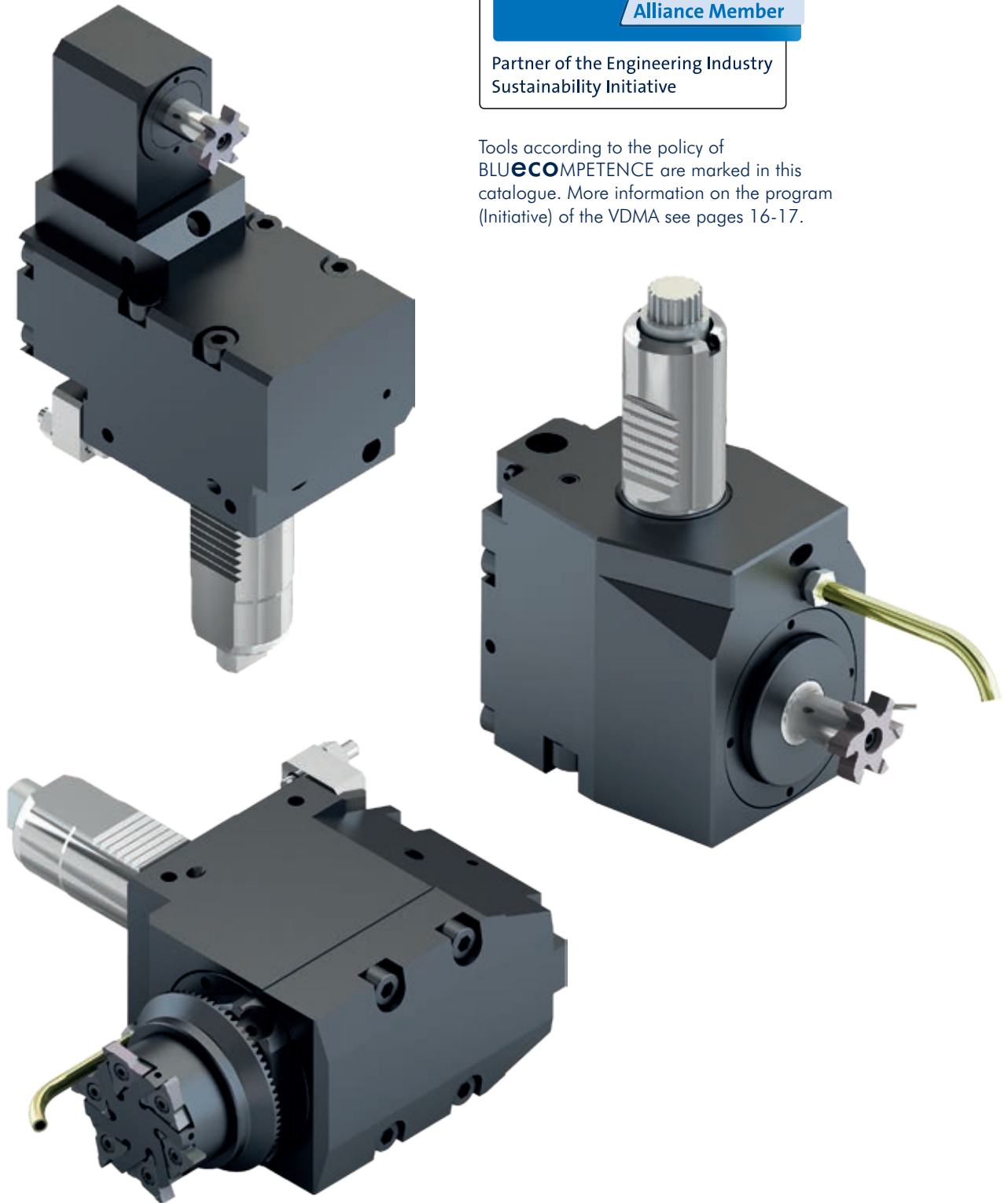
### mimatic® Tool Systems for Sustainability and Efficiency

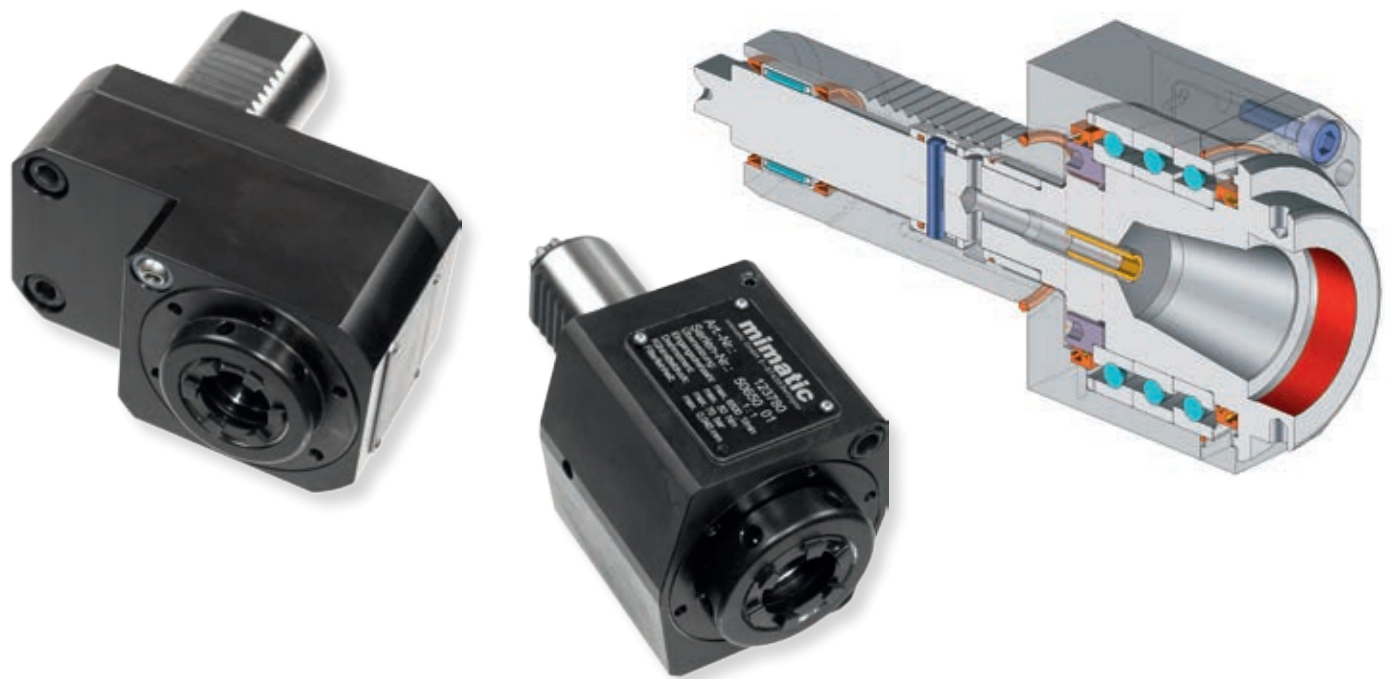
**BLUeCOMPETENCE**

Alliance Member

Partner of the Engineering Industry  
Sustainability Initiative

Tools according to the policy of  
BLUeCOMPETENCE are marked in this  
catalogue. More information on the program  
(Initiative) of the VDMA see pages 16-17.





As a medium-size company with global activities, we are developing and producing CNC precision standard and special tools for the automotive, mechanical engineering, aircraft and woodworking industries since 1974.

The mimatic® brand is acknowledged worldwide for its compliance with strict quality requirements in the context of integrated system solutions for the machining segment.

The philosophy of the Company is based upon synergy between highly motivated staff and excellent standards in the areas of technology and quality development. These attributes enable us to provide the perfect solution to every specific customer requirement.

#### Products from mimatic®

- Driven toolholders for CNC lathes and machining centers
- Cutting tools
- Clamping systems

Our quality systems have been approved since 1998 and we are certified to DIN EN ISO 9001:2000.

The know-how of our 140 employees worldwide is available to you at any time on location.

Many years ago we started to specialize in the production of driven toolholder units for metal processing. These are installed on CNC lathes.

Our products are used for large volume manufacturing and facilitate complete processing without multiple clamping of complex workpieces.

Our products contribute towards constant improvements in our customers production processes due to the use of the most modern technology allied to the highest levels of quality.



## Versions

Our boring and milling units are suitable for most of the popular turning machines and lathe equipment manufacturers. We produce the following types:

- Straight and offset units
- Internal and/or external coolant supply
- Gear multiplication or reduction
- Single or multi-spindle versions
- Angle heads for the production of angled holes, by means of adjustable and fixed angles
- Sawblade holders for sawing or slotting of workpieces
- Every popular type of tool system can be supplied

Technology and quality is at the forefront of our business:

- Highly precise bearing technology (high quality spindle and taper roller bearings)
- Specially optimized gears guarantee an excellently smooth run
- High torque transmission, rigidity and RPM`s
- Highest concentricity and facing accuracy < 3 µm
- Internal coolant supply up to 70 bar
- Use of high pressure seals und friction optimized special seals
- Additional labyrinth seals protect the bearings from the penetration of dirt and coolant

- Internal clamping nut guarantees a compact tool length and optimum bearing positioning ensures maximum axial and radial support at the spindle and high stability
- Alignment pins/blocks on angle units for minimum setup time and fine centreline adjustment
- Limited dry usage of driven toolholders with internal coolant through the spindle (i.C.). Running in dry condition should be avoided. Tools should frequently run with coolant. Easily changeable from internal or external coolant supply.
- The coolant filtering capabilities of the machine should be 40 µm or less.

## Modular Quick Change System „mimatic mi“

### Advantages

- Universal tool clamping system for all production areas
- Presetting of the tools off-line by length adjustment screw
- Tool change within seconds
- Concentricity of the interface < 0,002 mm
- Secure holding force by form-locking
- Very short design
- Toolholders in different sizes
- All toolholders with internal coolant

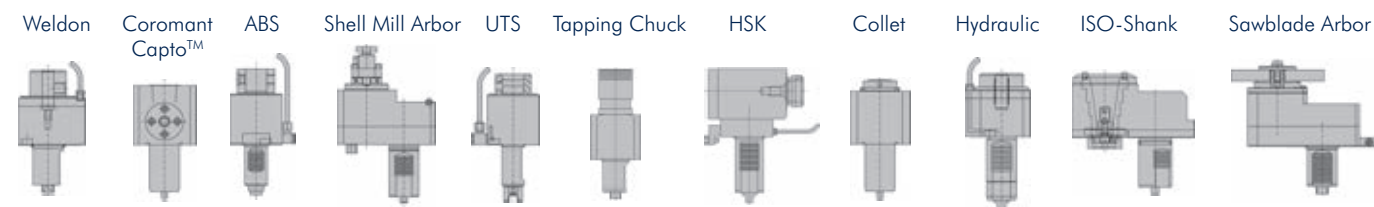
### Modular Toolholders in different Sizes for all Production Areas

- Tapping toolholders
- Collet toolholders (internal and external nut)
- Hydro-Flex hydraulic toolholders
- Thread tightening toolholder cutters
- Morse taper shank toolholders
- Weldon and Whistle Notch toolholders
- Shell mill toolholders

All toolholders are available for use with your presetter.

**Find more information of „mimatic mi“ on pages 470-482.**

## Tool System Examples



## Performance Values

The torques  $M_{max}$  specified in the tables below refer to shock-free processing (e.g. threaded cutting). For processes involving major shock loads (e.g. milling or multi-edge knocking), a value reduction of up to 50 % and more needs to be taken into account. The values  $n_{max}$  and  $P_{max}$  rendered are guideline values for short-time operation.

The permissible relative operating duration depends

- on the version of the spindle unit (with or without gear)
- on the presence of a cooling system and the type of cooling (external or internal through the tool spindle)
- on the processing torque

At a charge of about 60 % of the maximum values the working life calculated amounts to approx. 2.000 hours. Spindle units with gears produce more noise at higher speeds!

### Operating Instructions

**Initial Start-up:** To ensure long tool life it is important to properly “run-in” the tools. This procedure serves to reduce the internal friction in the driven unit and to evenly distribute the grease in the precision bearings.

- **Max. RPM in the first operation hour should not exceed 70 % of the maximum permissible RPM.**
- **Never run the tool above the maximum permissible torque rate and/or maximum permissible RPM (see also the drawing of the unit).**

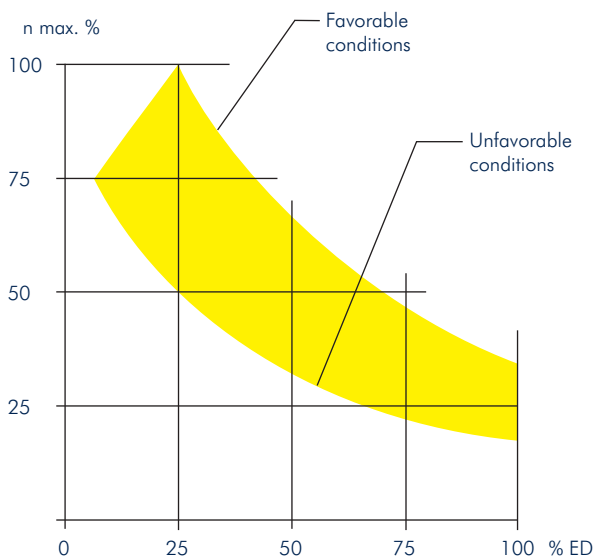
**Tools with internal coolant through the spindle (i.C.):** To avoid premature wear and damage to the seal system we recommend to filter the coolant to 40  $\mu\text{m}$  minimum.

Filter grades of 40  $\mu\text{m}$  worked in operation with very good results. The maximum permissible coolant pressure can be taken from the technical data of the driven toolholder.

Driven Toolholders with internal coolant through the spindle (i.C.) should **never run without coolant**. The coolant should flow through the tool, before the tool drive is switched on. Running in dry condition damages the internal seals.

**Service interval:** The tool life of the driven toolholder depends strongly on the application. Wear parts such as bearings and seals should be exchanged. We recommend to send the tools at least once annually to our service center for cleaning and regreasing. Tools with internal coolant through the spindle should be serviced every 6 months.

### Optimum Relative Cycle Times (Guideline Values)

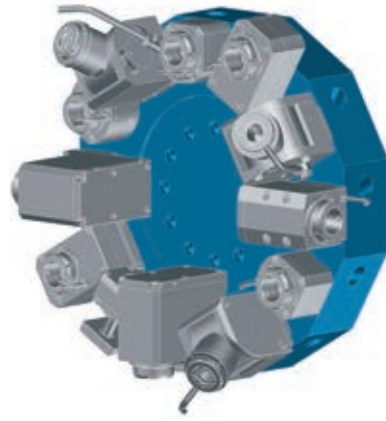


### Determination of the maximum permissible cycle times per minute $ED_{max}$

The maximum permissible cycle times per minute may not be under any circumstances exceeded.

CT max: maximum permissible cycle times in percent per minute (%/min.)

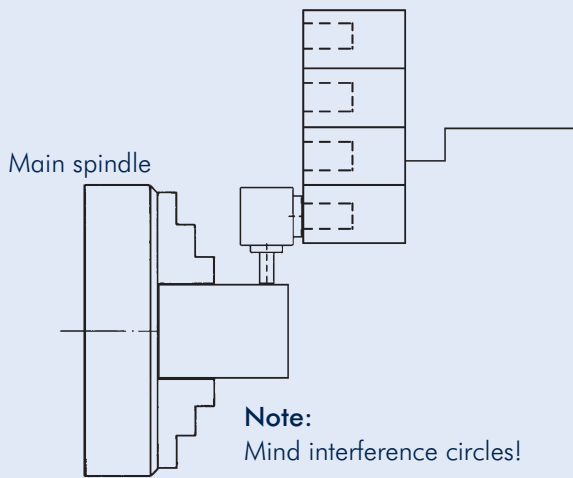
## Operation with Disc-type Turrets



**Tools are fixed on the the revolver face!**

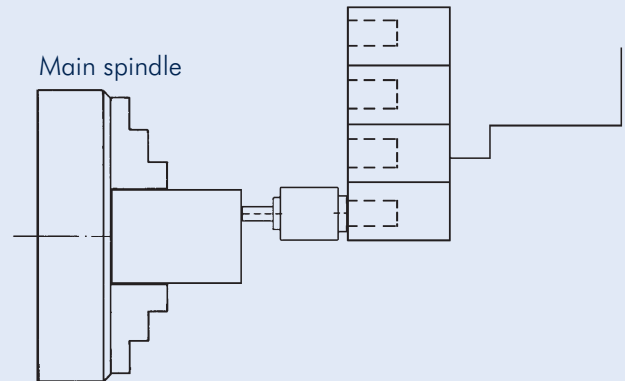
### Radial Operation

Radial tool holders with 90° angle

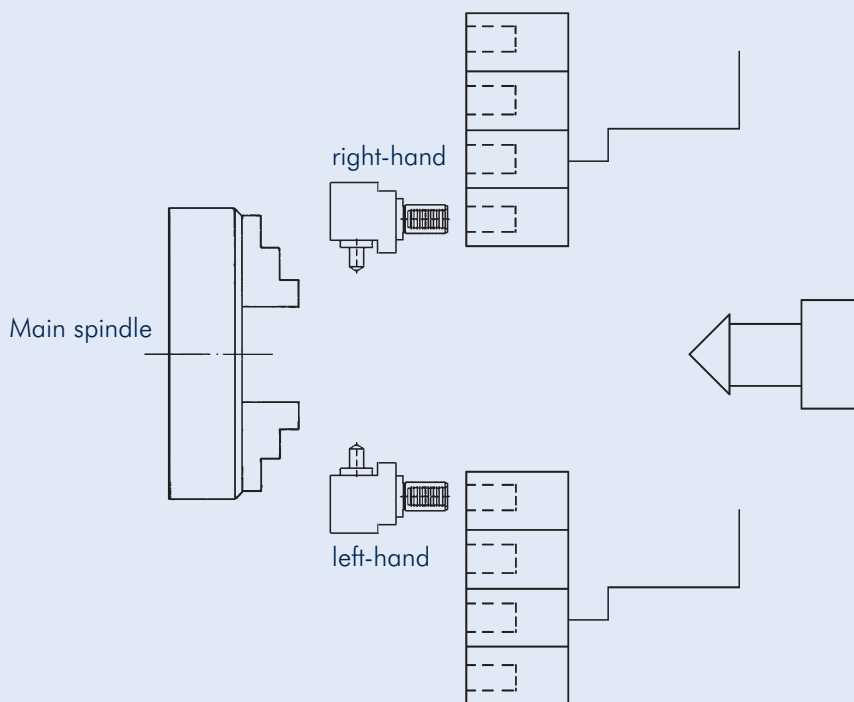


### Axial Operation

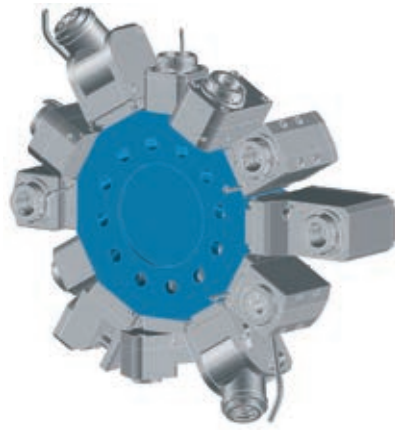
Axial tool holders straight version



### Right- and Left-hand Versions of the Driven Toolholders



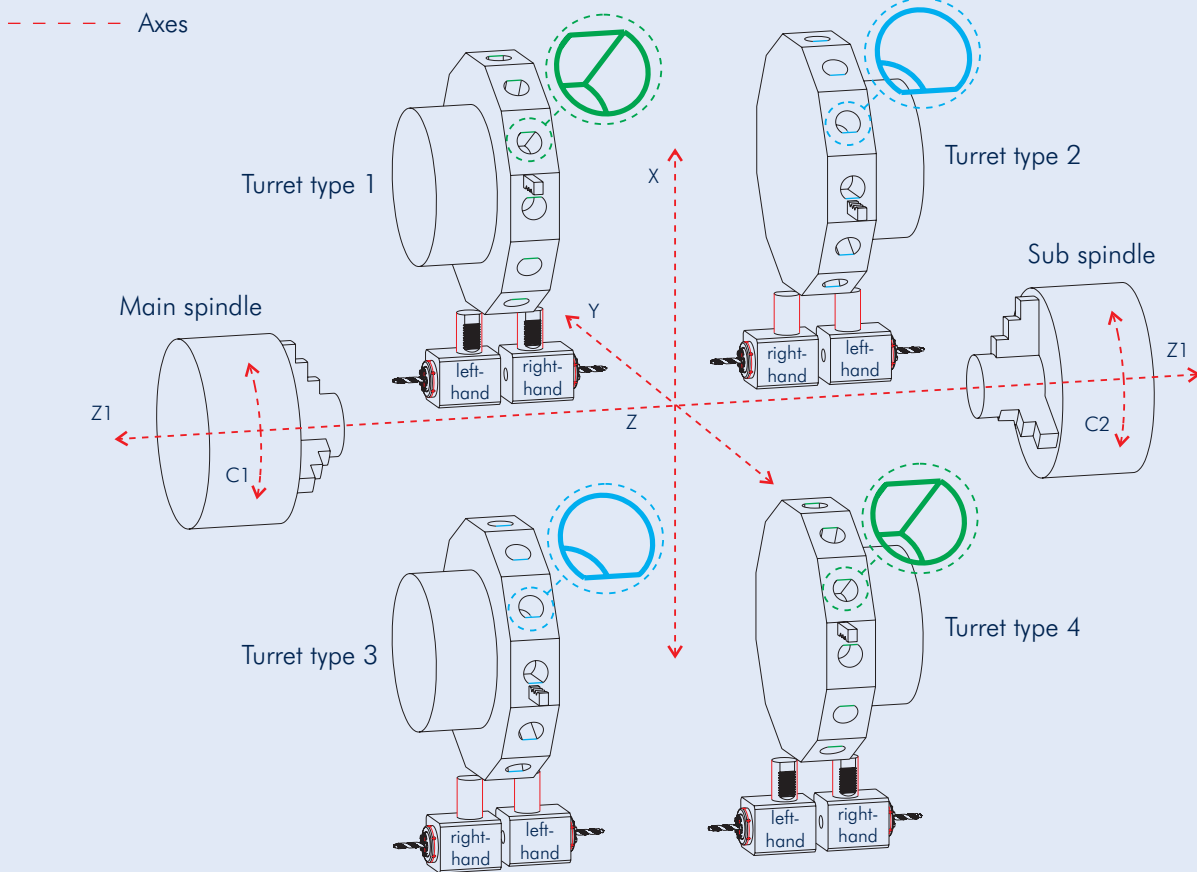
## Operation with Star-type Turrets



**Tools are fixed on the the revolver circuit!**

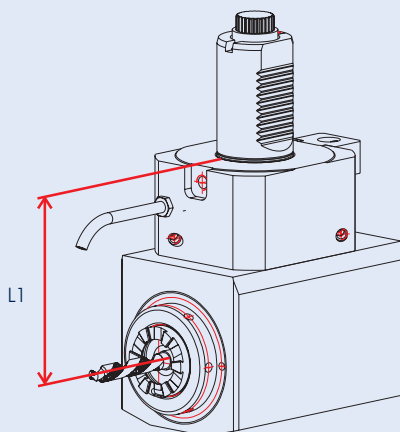
The orientation of the revolver to the spindle is important. Machines with Star-type Turrets often come with a sub spindle.

### Right- and Left-hand Versions on Star-type Turrets with Main- and Sub-Spindle



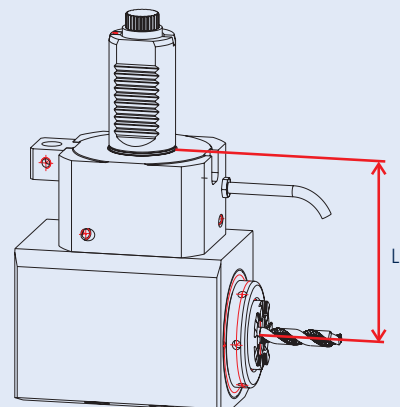
#### Left-hand Version

Please note dimension L1



#### Right-hand Version

Please note dimension L1



**Please check interference circles with fixed tools!**

# Mazak

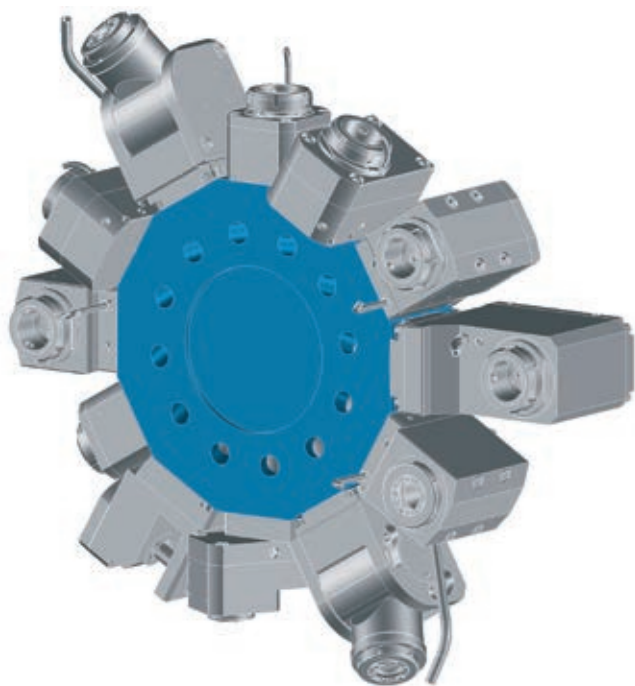
## QUICK TURN NEXUS 100 + SUPER QUICK TURN 10

### Data

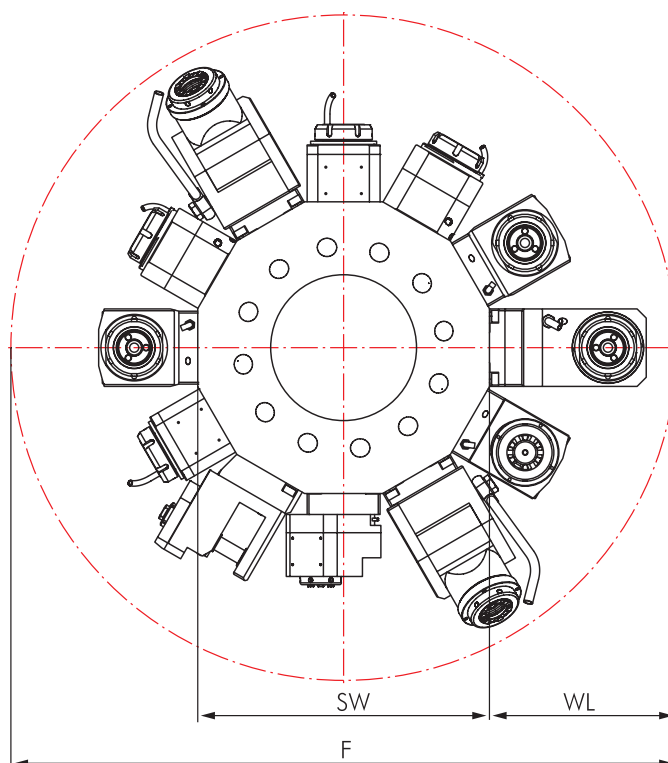
Machine type Series	Turret Stations
<b>QTNX 100/100-II</b> M / MS / MY / MSY	12
<b>QTNX 200</b> M / MS / MY / MSY	16
<b>QTNX 250</b> M / MS / MY / MSY	16
<b>SQT 10</b> M / MS	12
<b>SQT 100</b> M / MS	12
<b>SQT 15</b> M / MS	16
<b>SQT 200</b> M / MS	16
<b>SQT 250</b> M / MS	16



### Star-type Turret VDI 40



### Interference Circles



Machine type Series	F	SW	WL
<b>QTNX 100</b>	564	286	139
<b>QTNX 200/250</b>	564	286	139
<b>SQT 10</b>	564	286	139
<b>SQT 200/250</b>	664	386	139



**QUICK TURN NEXUS 100 + SUPER QUICK TURN 10**

**Live Tools**

	Page		Page		
<b>Straight Unit, Offset Type</b>		272	<b>Angle Unit, adjustable 0-100°</b>		275
<b>Angle Unit</b>		273	<b>Y-Unit, adjustable ± 90°</b>		276
<b>Angle Unit, 2-Axis</b>		274	<b>Saw Blade Holder</b>		277

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



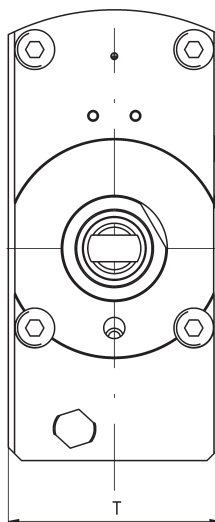
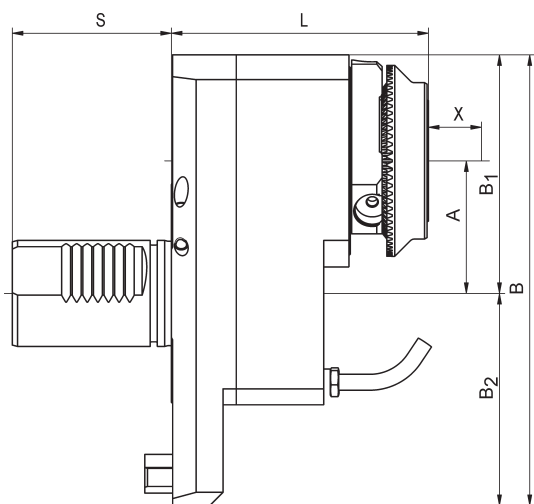
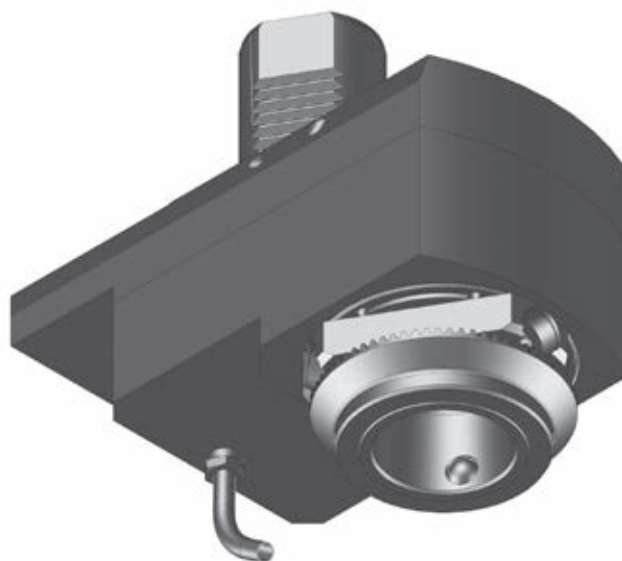
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

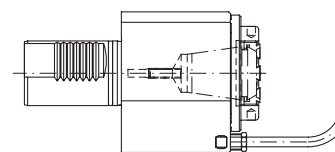
# Straight Unit, Offset and without Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 100/100-II SQT 10</b>	
<b>QTNX</b>	<b>SQT</b>
100 M-12x	10 M/MS-12x
200 M/MS-16x	100 M/MS-12x
250 M/MS-16x	15 M/MS-16x
	200 M/MS-16x
	250 M/MS-16x
Data	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm
Modular Interfaces	
<b>mimaticMi</b>	



Without offset:



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
124042	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	49,0	90,0	50	170	90	80	60	80	↺ ↻
124268	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	49,0	90,0	50	170	90	80	60	80	↺ ↻
124068	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	67,5	71,5	50	174	90	84	60	80	↺ ↻
124345	ER 25*	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	internal	49,0	90,0	50	170	90	80	60	80	↺ ↻
167934	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	49,0	97,0	50	170	90	80	60	80	↺ ↻
<b>Without offset:</b>															
124265	ER 32*	1,0-20	80 Nm	6.500/6.500	i = 1:1	internal	54,0	85,0	0	87	38	49	60	75	↺ ↻
167717	ER 32	1,0-20	80 Nm	6.500/6.500	i = 1:1	external	54,0	85,0	0	87	38	49	60	75	↺ ↻

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**NEXUS QTNX 100/100-II**  
**SQT 10**

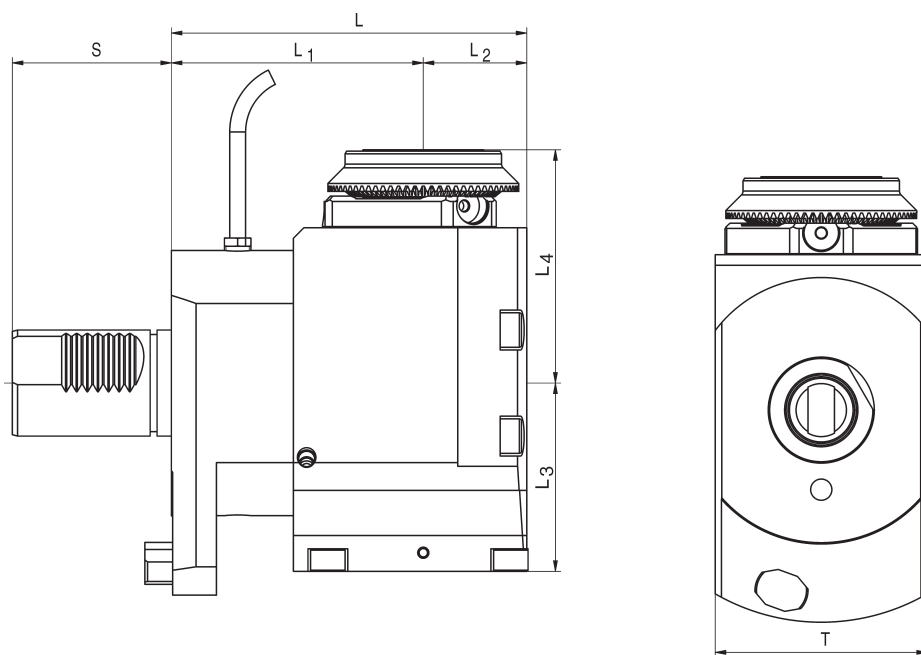
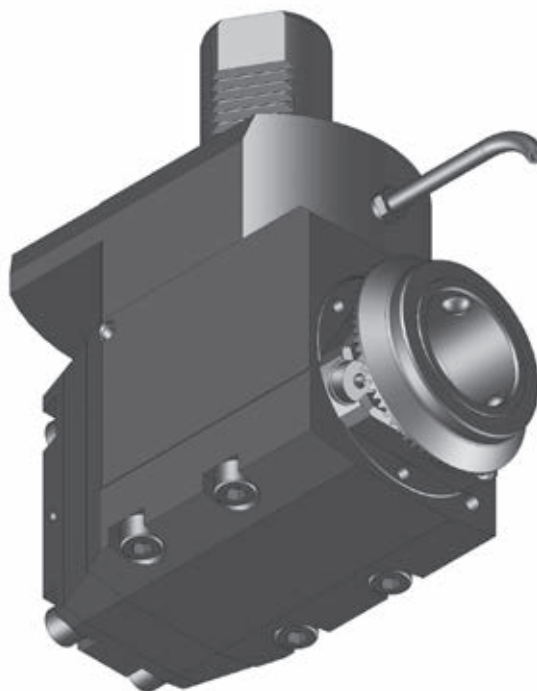
QTNX	SQT
100 M-12x	10 M/MS-12x
200 M/MS-16x	100 M/MS-12x
250 M/MS-16x	15 M/MS-16x
	200 M/MS-16x
	250 M/MS-16x

Data

Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm

Modular Interfaces

**mimaticMi**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124651	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	134	95	39	69,0	76	60	85	↺ ↻
124887	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	135	95	40	75,5	76	60	85	↺ ↻
124693	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	129	95	34	40,0	78	60	80	↺ ↻
124921	ER 25*	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	internal	134	95	39	72,5	75	60	80	↺ ↻
167933	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	134	95	39	71,0	88	60	80	↺ ↻
124886	ER 25*	0,5-16	50 Nm	6.500 / 6.500	i = 1:1	internal	135	95	39	75,5	80	60	80	↺ ↻
124652**	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	134	95	39	76,0	69	60	80	↺ ↻
170640**	ER 25*	0,5-16	50 Nm	6.500 / 6.500	i = 1:1	internal	134	95	39	76,0	69	60	80	↺ ↻

\* With clamping nuts with sealing, seals see page 530 \*\* Type for sub-spindle

## Angle Unit, 2-Axis

for Manufacturer

**Mazak**

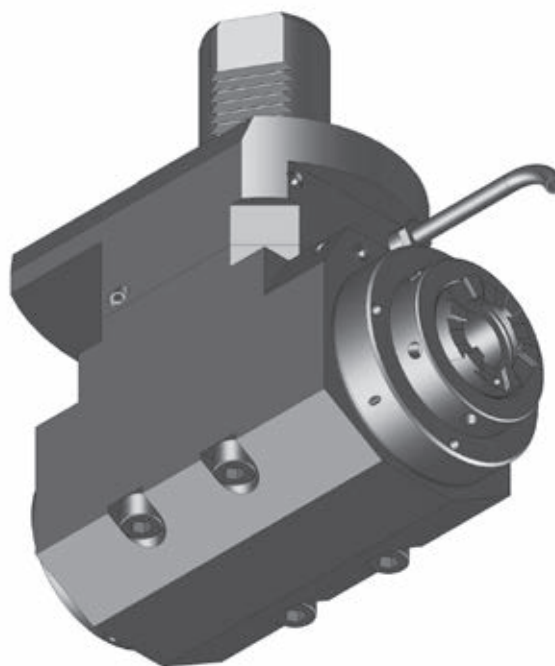
for Machine type

**NEXUS QTNX 100/100-II**  
**SQT 10**

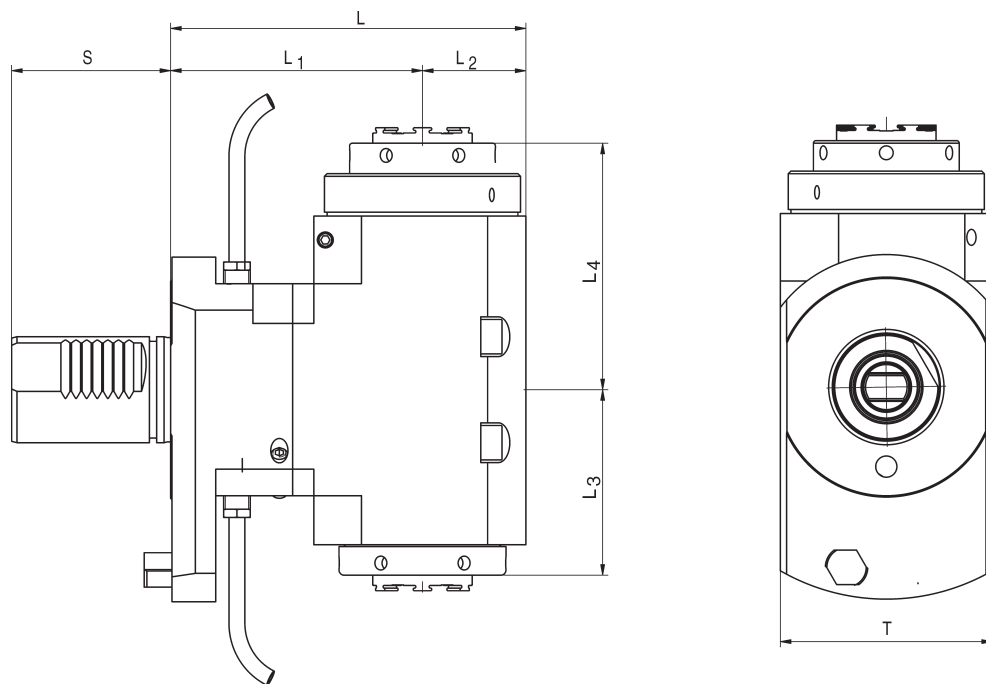
QTNX	SQT
100 M-12x	10 M/MS-12x
200 M/MS-16x	100 M/MS-12x
250 M/MS-16x	15 M/MS-16x
	200 M/MS-16x
	250 M/MS-16x

Data

Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



 **Coolant pressure max. 30 bar**

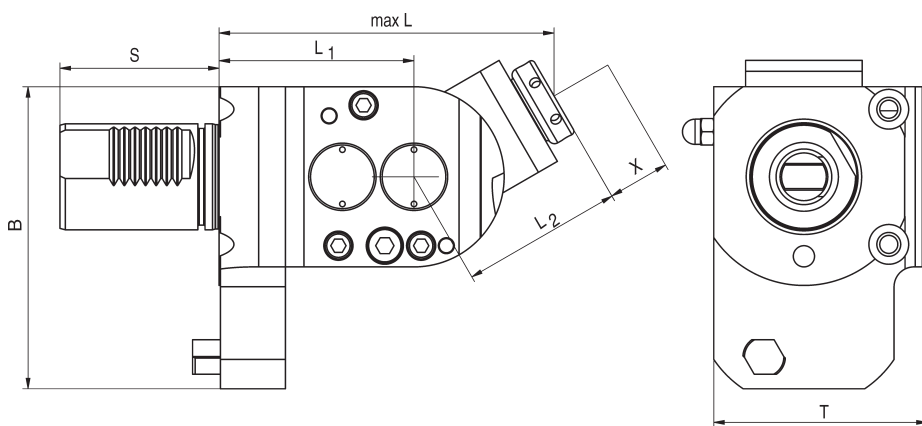
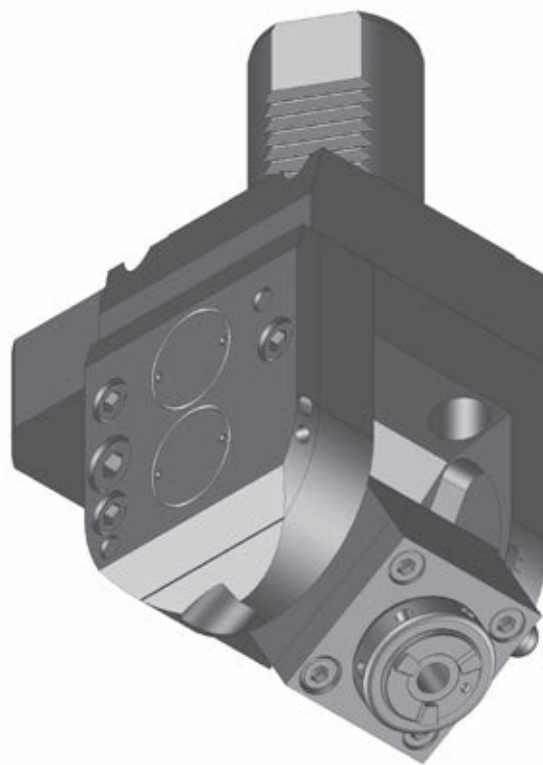


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	
124649**	2x ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	134	100	34	62	62	60	70	-
167306	2x ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	134	95	39	70	93	60	80	-

# Angle Unit, Adjustable 0-100°

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 100/100-II</b> <b>SQT 10</b>	
<b>QTNX</b>	<b>SQT</b>
100 M-12x	10 M/MS-12x
200 M/MS-16x	100 M/MS-12x
250 M/MS-16x	15 M/MS-16x
	200 M/MS-16x
	250 M/MS-16x
Data	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
125034	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	4,5	134,5	73,5	61	114	60	80,5	↺ ↻
125055	ER 16	0,5-10	6 Nm	3.750 / 15.000	i = 1:4	external	4,5	134,5	73,5	61	114	60	80,5	↻ ↺

# Y-Unit, Adjustable $\pm 90^\circ$

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

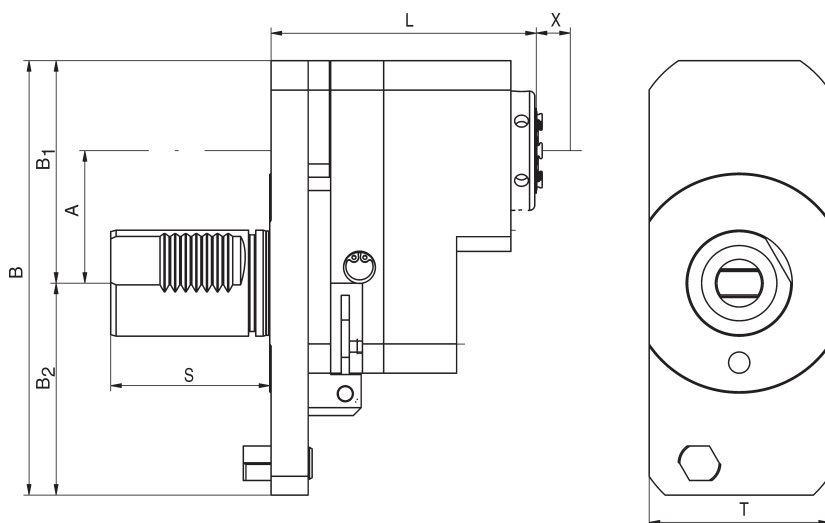
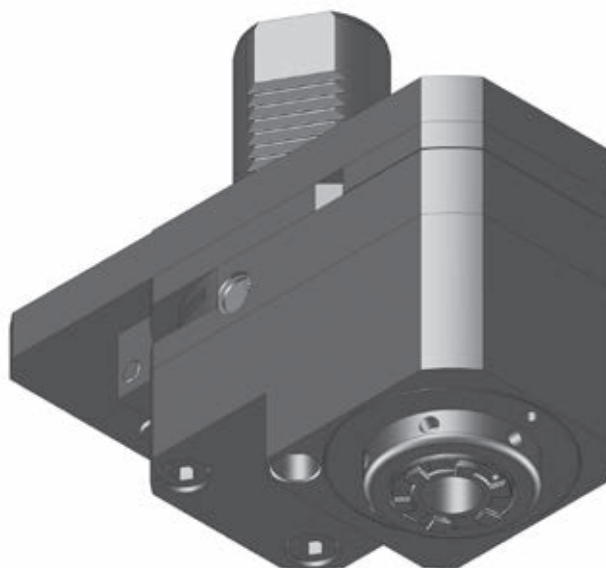
for Machine type

**NEXUS QTNX 100/100-II**  
**SQT 10**

<b>QTNX</b>	<b>SQT</b>
100 M-12x	10 M/MS-12x
200 M/MS-16x	100 M/MS-12x
250 M/MS-16x	15 M/MS-16x
	200 M/MS-16x
	250 M/MS-16x

Data

Turret type	Star-type Turret
Type	$\pm 90^\circ$ continuous adjustable
Shank	VDI 40
Drive	Tang
SW	10 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	S mm	T mm	Rotating direction
124120	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	39	100	50	164	60	68	

# Saw Blade Holder

for Manufacturer

**Mazak**

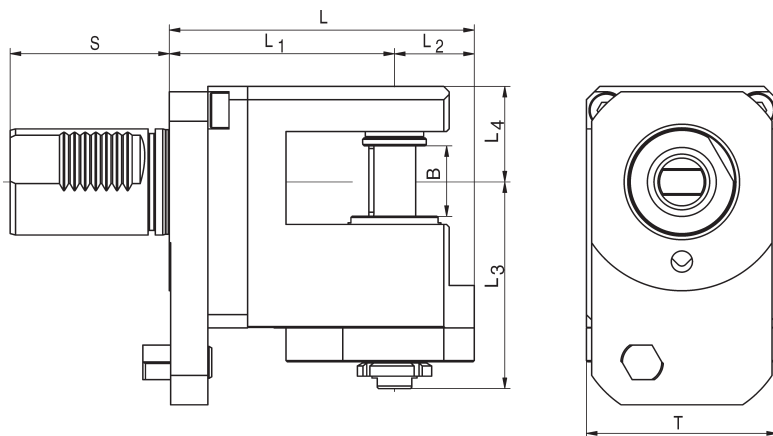
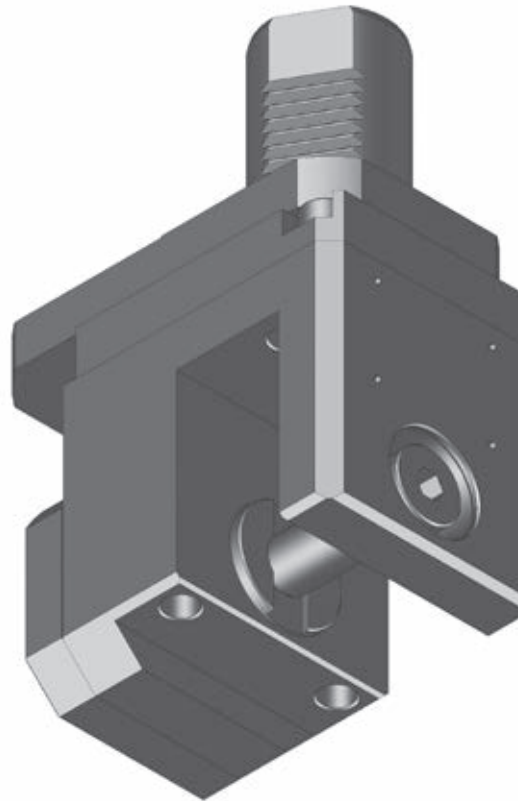
for Machine type

**NEXUS QTNX 100/100-II**  
**SQT 10**

<b>QTNX</b>	<b>SQT</b>
100 M-12x	10 M/MS-12x
200 M/MS-16x	100 M/MS-12x
250 M/MS-16x	15 M/MS-16x
	200 M/MS-16x
	250 M/MS-16x

Data

Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Kühlung	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
125111*	16	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	30	77,5	36	25	60	72
125110*	22	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	30	77,5	36	25	60	72

\* Saw blade diameter max. = 80 mm

# Mazak

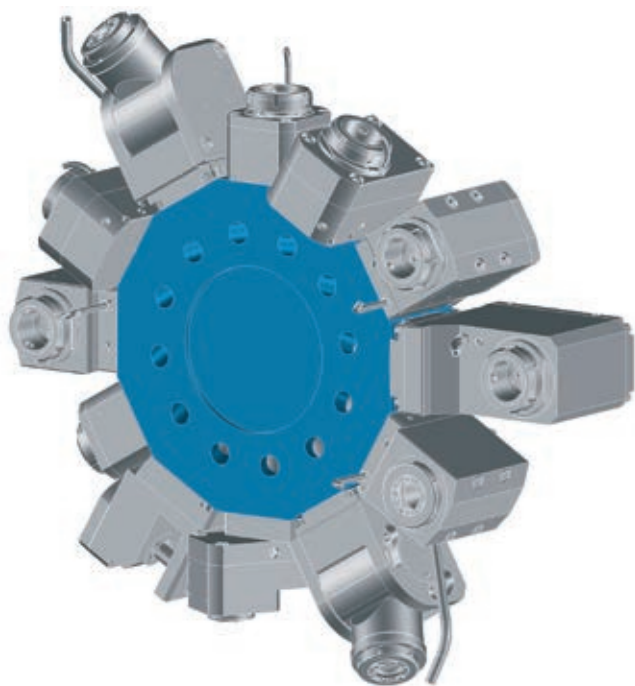
## QUICK TURN NEXUS 200/250, SUPER QUICK TURN 15/18, SUPER QUADREX 200/250

### Data

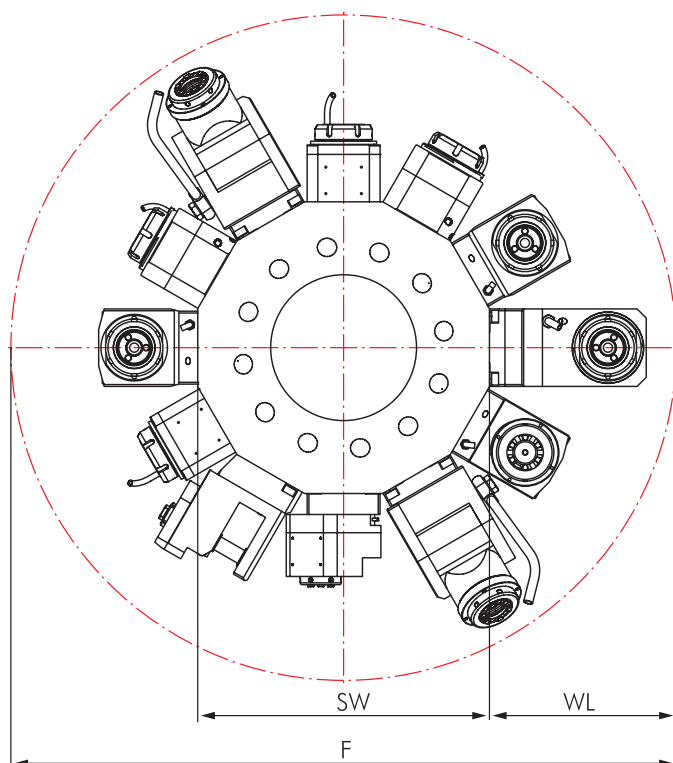
Machine type Series	Turret Stations
<b>QTNX 200/200-II</b> M / MY / MS / MSY	12
<b>QTNX 250/250-II</b> M / MY / MS / MSY	12
<b>SQ 200/250</b>	12
<b>SQT 15</b> M / MS	12
<b>SQT 18</b> M / MS	12
<b>SQT 200</b> M / MS	12
<b>SQT 250</b> M / MS	12



### Star-type Turret VDI 40



### Interference Circles



Machine type Series	F	SW	WL
<b>QTNX 200/250</b>	660	320	170
<b>SQT 15/18</b>	660	320	170
<b>Super Quadrex 200/250</b>	660	320	170











# Mazak

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

## QUICK TURN NEXUS 200/250, SUPER QUICK TURN 15/18, SUPER QUADREX 200/250

### Live Tools

	Page		Page
<b>Straight Unit, Offset Type</b>	280		
		<b>Y-Unit, adjustable ± 90°</b>	284
			
<b>Angle Unit</b>	281		
		<b>Saw Blade Holder</b>	285
			
<b>Angle Unit, 2-Axis</b>	282		
		<b>Straight Unit, Twin type</b>	286
			
<b>Angle Unit, adjustable 0-100°</b>	283		
		<b>Angle Unit, Twin type</b>	287
			

### Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



#### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit, Offset and without Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**NEXUS QTNX 200/250, SQT 15/18 + SUPER QUADREX 200/250**

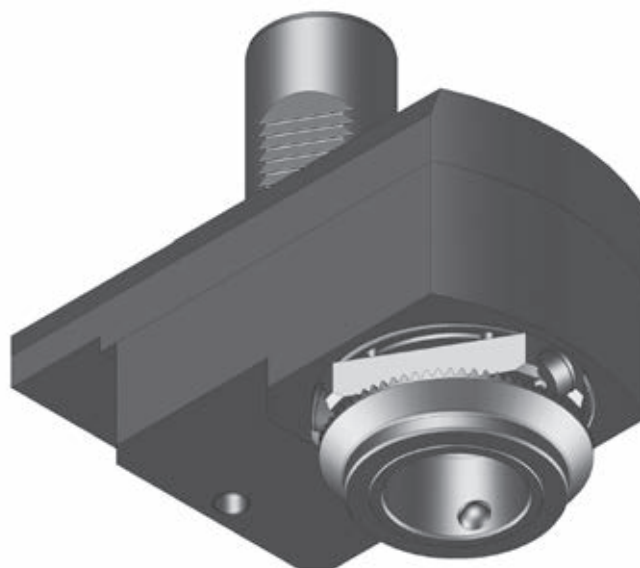
QTNX	SQT
200 M/MS-12x	15 M/MS-12x
250 M/MS-12x	18 M/MS-12x
	200 M/MS-12x
	250 M/MS-12x

Dimensions

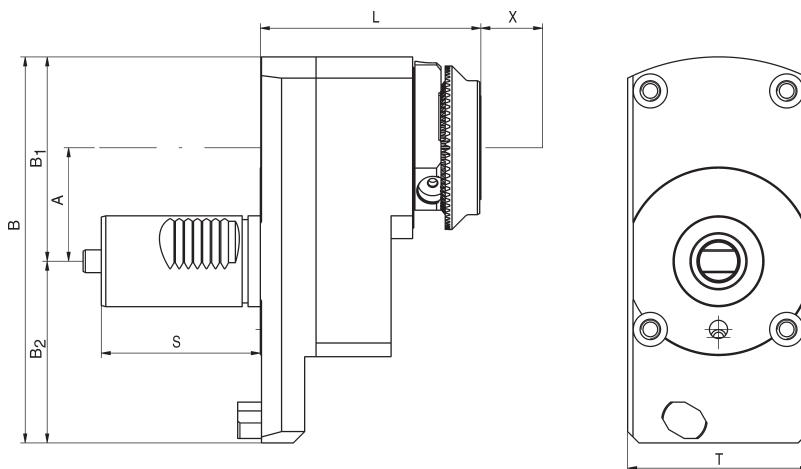
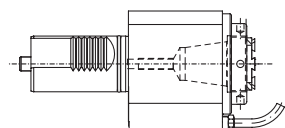
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm

Modular Interfaces

**mimaticMi**  
**mimatic capto**



Without offset:



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
124034	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	80,0	90,0	50	170	90	80	70	80	↺ ↻
124259	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	80,0	90,0	50	170	90	80	70	80	↺ ↻
123688	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	-	97,0	50	170	90	80	70	80	↺ ↻
167294	HF 20	6,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	-	89,0	50	170	90	80	70	80	↺ ↻
124067	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	80,0	90,0	50	170	90	80	70	80	↺ ↻
100277	ER 25*	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	internal	80,0	90,0	50	170	90	80	70	68	↺ ↻
124375**	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	80,0	90,0	50	132	90	42	70	80	↺ ↻
124025	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	external	80,0	97,0	50	170	90	80	70	80	↺ ↻
123711	mi 40	-	-	6.500 / 13.000	i = 1:2	internal	80,0	112,0	50	170	90	80	70	80	↺ ↻
124033	ER 25	0,5-16	50 Nm	6.500/6.500	i = 1:1	external	80,0	90,0	50	170	90	80	70	80	↺ ↻
173063	C4	-	50 Nm	6.500/6.500	i = 1:1	internal	76,5	93,5	50	172	90	80	70	84	↺ ↻
Without offset:															
176039	ER 32	1,0-20	80 Nm	6.500/6.500	i = 1:1	external	85,0	85,0	0	87	38	49	70	75	↺ ↻
124256	ER 32*	1,0-20	80 Nm	6.500/6.500	i = 1:1	internal	85,0	85,0	0	87	38	49	70	75	↺ ↻
123895	C 4	-	80 Nm	6.500/6.500	i = 1:1	external	90,0	80,5	0	102	42	60	70	84	↺ ↻

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TriaCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**NEXUS QTNX 200/250, SQT 15/18  
+ SUPER QUADREX 200/250**

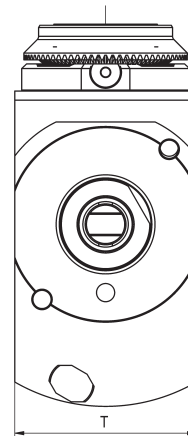
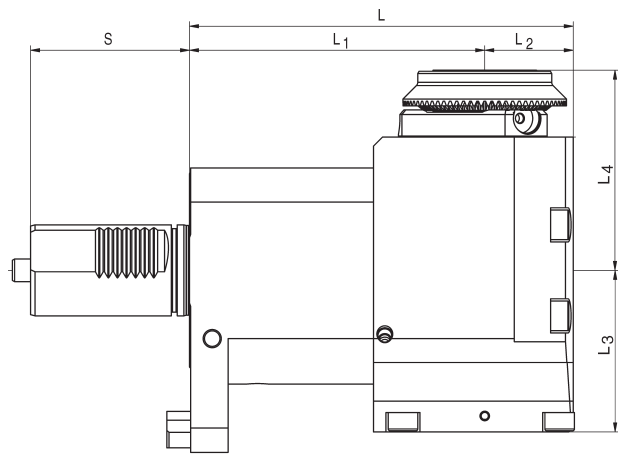
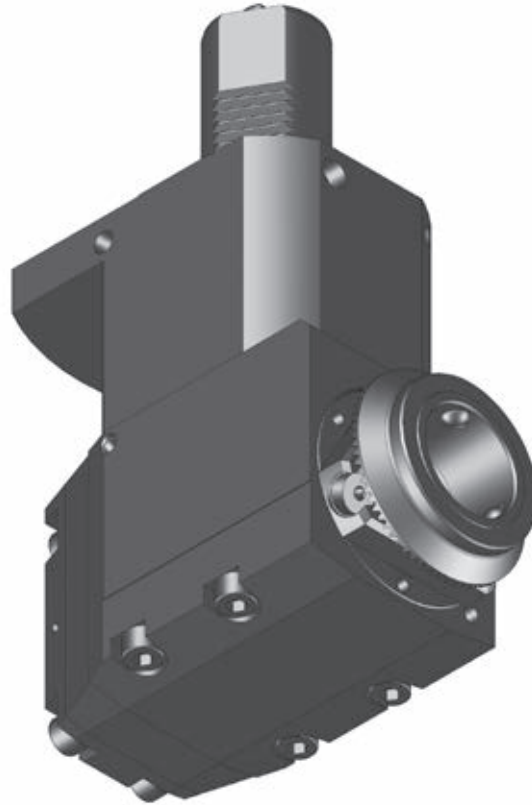
QTNX	SQT
200 M/MS-12x	15 M/MS-12x
250 M/MS-12x	18 M/MS-12x
	200 M/MS-12x
	250 M/MS-12x

Dimensions

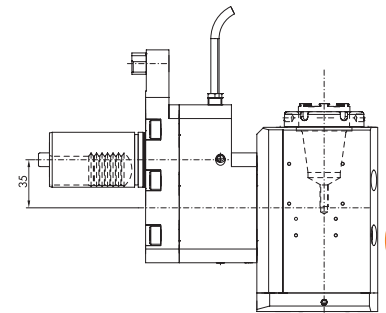
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm

Modular Interfaces

**mimaticMi**  
**mimatic capto**



With offset 35 mm:



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124635	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	169	130	39	69,0	70,0	70	80	↺ ↻
124691	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	164	130	34	40,0	78,0	70	80	↺ ↻
124918	ER 32*	1,0- 20	25 Nm	6.500 / 13.000	i = 1:2	internal	169	130	39	72,5	91,0	70	80	↺ ↻
124873	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	75,5	70,0	70	80	↺ ↻
124875	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	173	130	43	71,0	88,0	70	80	↺ ↻
124636**	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	169	130	39	69,0	70,0	70	80	↺ ↻
124874**	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	75,5	70,0	70	80	↺ ↻
101584	ER 25*	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	internal	169	130	39	72,5	75,0	70	80	↺ ↻
124639	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	external	173	130	43	71,0	88,0	70	80	↺ ↻
124919	mi 40	-	25 Nm	6.500 / 13.000	i = 1:2	internal	169	130	39	72,5	97,0	70	80	↺ ↻
167296	HF 20	-	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	75,5	82,0	70	80	↺ ↻
124872	C 4	-	50 Nm	6.500 / 6.500	i = 1:1	internal	168	126	42	71,0	74,5	70	85	↺ ↻
With offset 35 mm:														
166541**	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	35,0	110,5	70	80	↺ ↻

\* With clamping nuts with sealing, seals see page 530 \*\* Type for sub-spindle

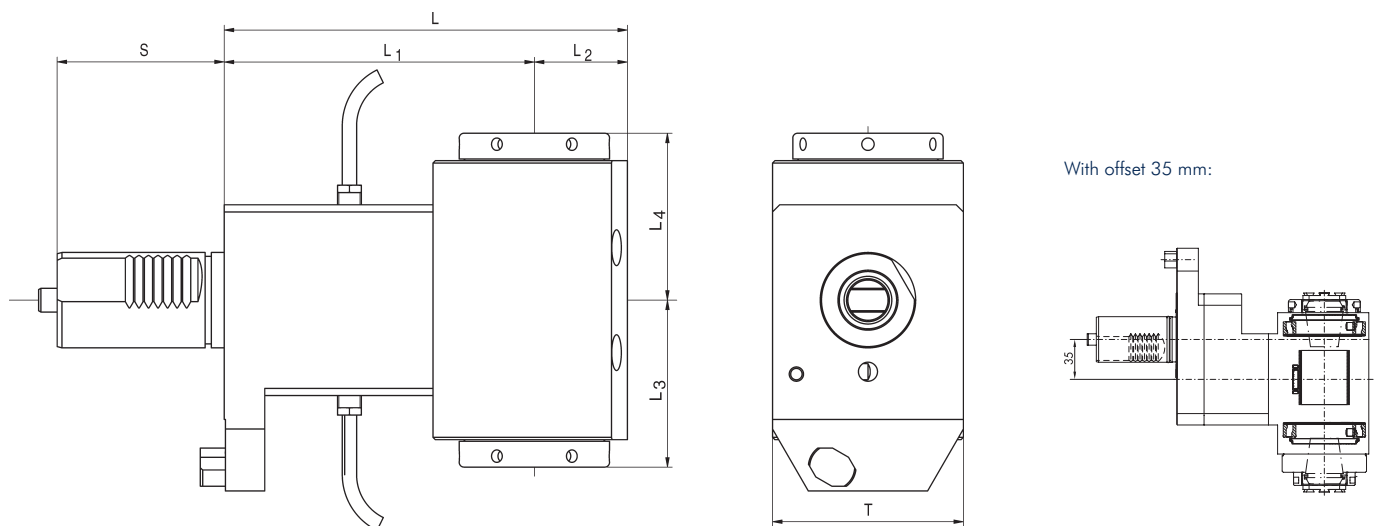
# Angle Unit, 2-Axis

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 200/250, SQT 15/18 + SUPER QUADREX 200/250</b>	
<b>QTNX</b>	<b>SQT</b>
200 M/MS-12x	15 M/MS-12x
250 M/MS-12x	18 M/MS-12x
	200 M/MS-12x
	250 M/MS-12x
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



**Coolant pressure max. 30 bar**



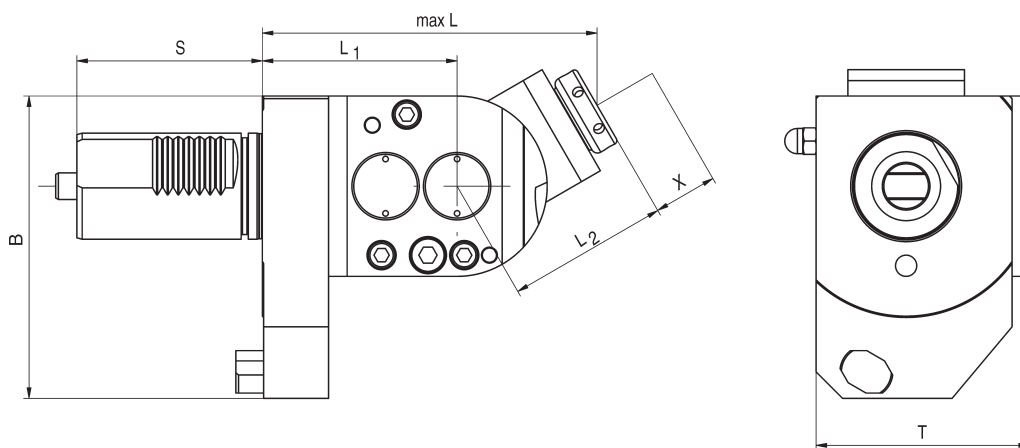
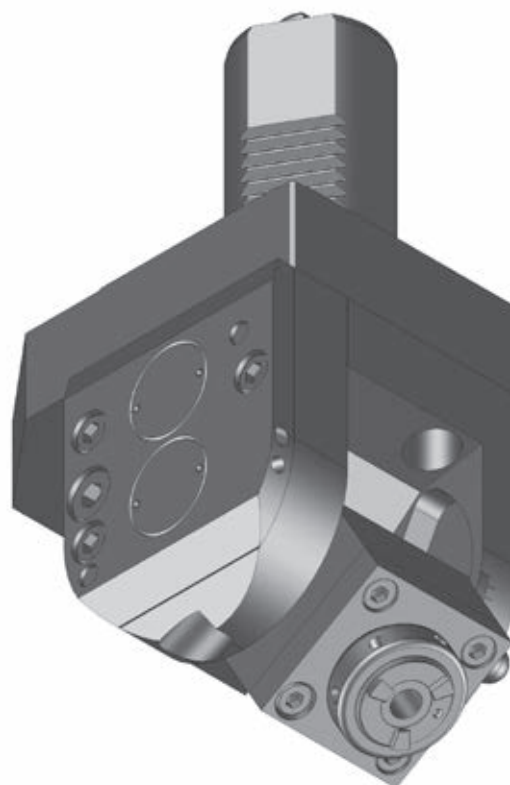
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm
124632**	2x ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	164	130	34	62	62	70	70
124638	2x ER 32	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	external	169	130	39	70	70	70	80
133725	2x ER 32*	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	70	93	70	80
With offset 35 mm:													
167955	2x ER 32*	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	70	93	70	80

# Angle Unit, Adjustable 0-100°

Connectable in accordance with  
**BLUECOMPETENCE**

» PolyMILL » TriMILL

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 200/250, SQT 15/18 + SUPER QUADREX 200/250</b>	
<b>QTNX</b>	<b>SQT</b>
200 M/MS-12x	15 M/MS-12x
250 M/MS-12x	18 M/MS-12x
	200 M/MS-12x
	250 M/MS-12x
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
125027	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	35,5	134,5	73,5	61	114	70	80,5	↺ ↻
125054	ER 16	0,5-10	6 Nm	3.750 / 15.000	i = 1:4	external	35,5	134,5	73,5	61	114	70	80,5	↺ ↻
125029**	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	35,5	134,5	73,5	61	114	70	80,5	↺ ↻

\*\* Type for sub-spindle

# Y-Unit, Adjustable $\pm 90^\circ$

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**NEXUS QTNX 200/250, SQT 15/18  
+ SUPER QUADREX 200/250**

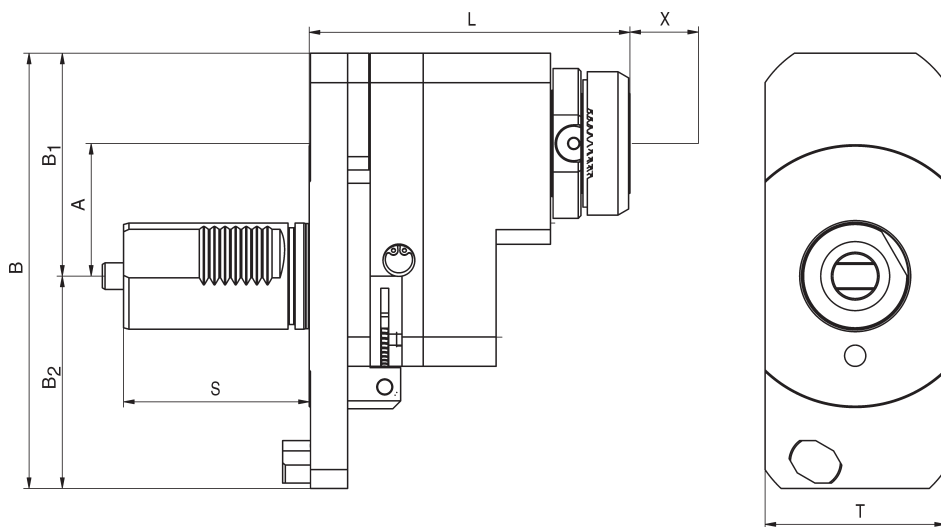
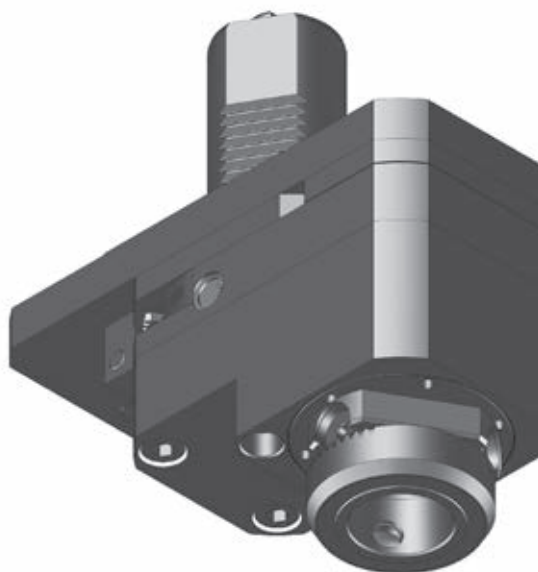
QTNX	SQT
200 M/MS-12x	15 M/MS-12x
250 M/MS-12x	18 M/MS-12x
	200 M/MS-12x
	250 M/MS-12x

Dimensions

Turret type	Star-type Turret
Type	$\pm 90^\circ$ continuous adjustable
Shank	VDI 40
Drive	Tang
SW	10 mm

Modular Interfaces

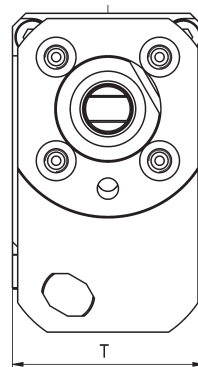
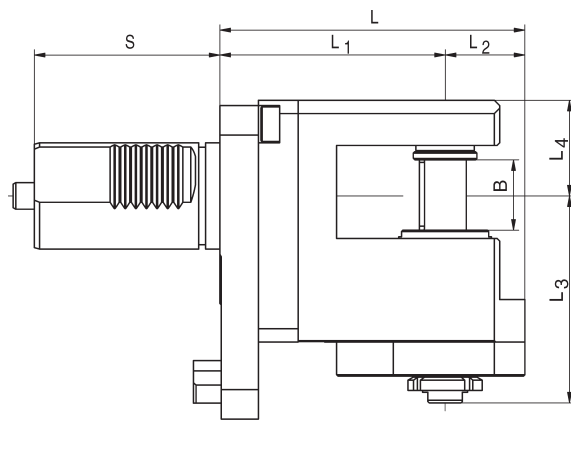
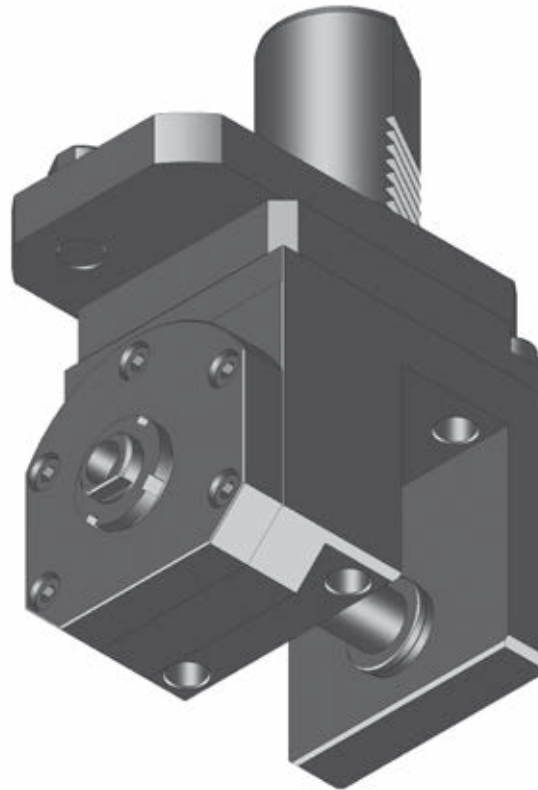
**mimaticMi**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	S mm	T mm	Rotating direction
124118	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	70	100	50	164	70	68	↺ ↻
169140	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	external	-	121	50	164	70	68	↺ ↻

## Saw Blade Holder

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 200/250, SQT 15/18 + SUPER QUADREX 200/250</b>	
<b>QTNX</b>	<b>SQT</b>
200 M/MS-12x	15 M/MS-12x
250 M/MS-12x	18 M/MS-12x
	200 M/MS-12x
	250 M/MS-12x
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
125104*	22	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	30	77,5	36	25	70	72
125123**	22	40 Nm	6.500 / 2.450	i = 2,66:1	external	165	130	35	87,5	36	25	70	72

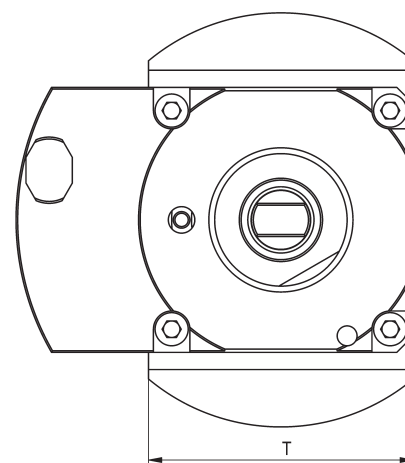
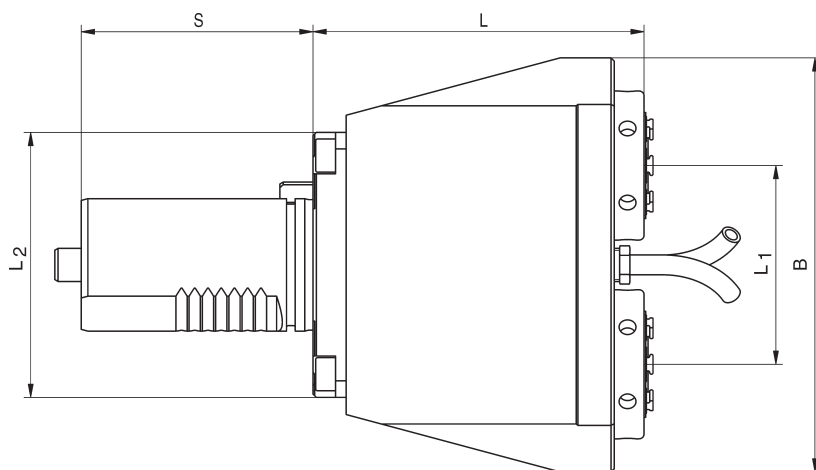
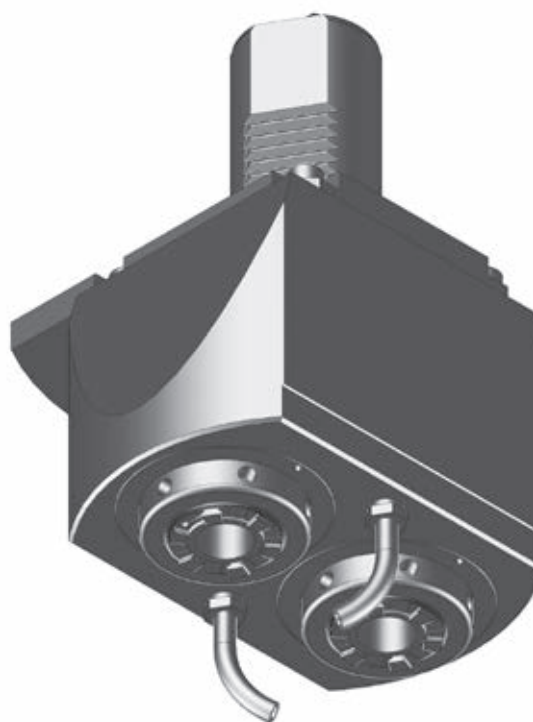
\* Saw blade diameter max. = 80 mm

\*\* Saw blade diameter max. = 100 mm

# Straight Unit, Twin Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 200/250-II</b>	
<b>QTNX</b> 200 MY/MSY-12x 250 MY/MSY-12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



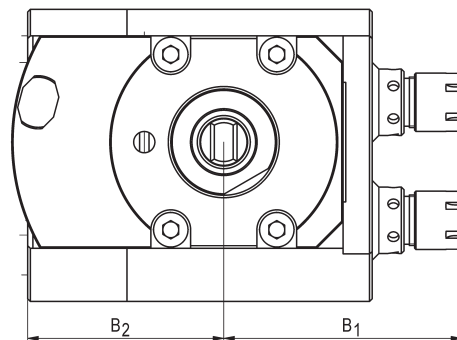
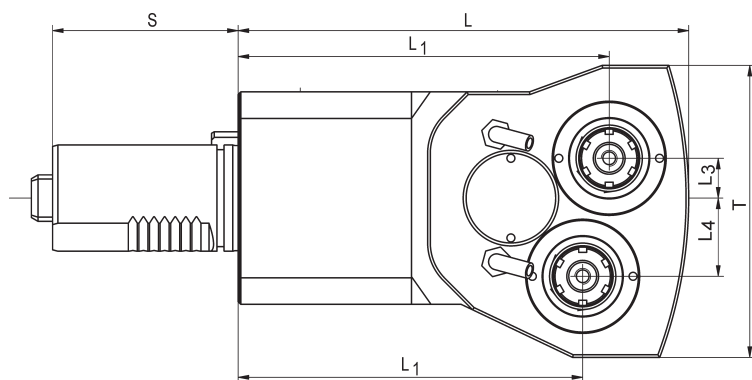
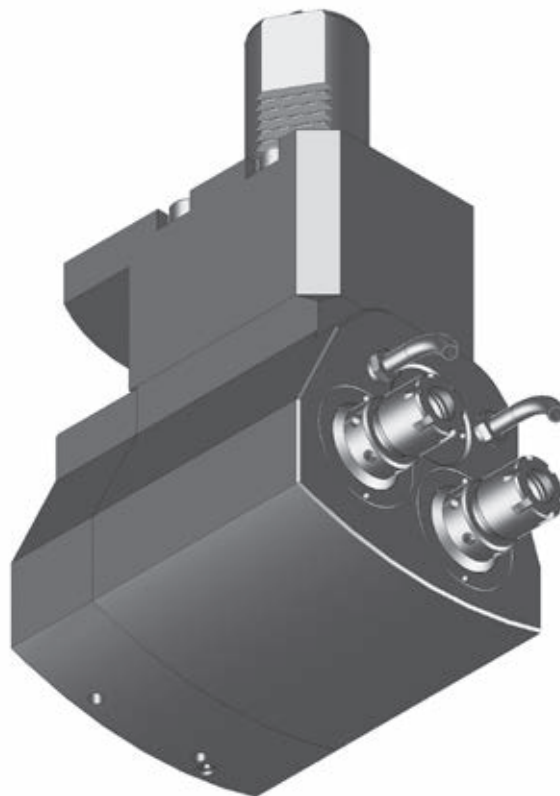
Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
169636	2x ER 25*	0,5-16	2x 15 Nm	6.500 / 6.500	i = 1:1	external	100	60	80	125	70	80	↺ ↻
171059	2x ER 25*	0,5-16	2x 15 Nm	6.500 / 6.500	i = 1:1	internal	100	60	80	125	70	80	↺ ↻
171060	2x mi 40		2x 15 Nm	6.500 / 6.500	i = 1:1	internal	120	60	80	125	70	80	↺ ↻



# Angle Unit, Twin Type

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 200/250-II</b>	
<b>QTNX</b> 200 MY/MSY-12x 250 MY/MSY-12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
173876	2x ER16	0,5-10	15 Nm	6.500 / 6.500	i = 1:1	external	170	140/130	30	15	29,44	90	74	70	110	↺ ↻
162911	2x ER16*	0,5-10	15 Nm	6.500 / 6.500	i = 1:1	internal	170	140/130	30	15	29,44	90	74	70	110	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Mazak

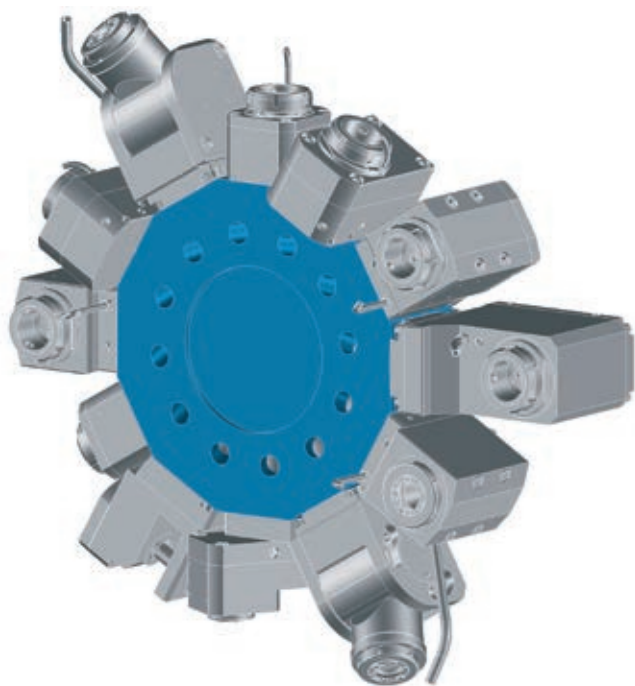
## QUICK TURN NEXUS 300/350/400/450 + SUPER QUICK TURN 28/30

### Data

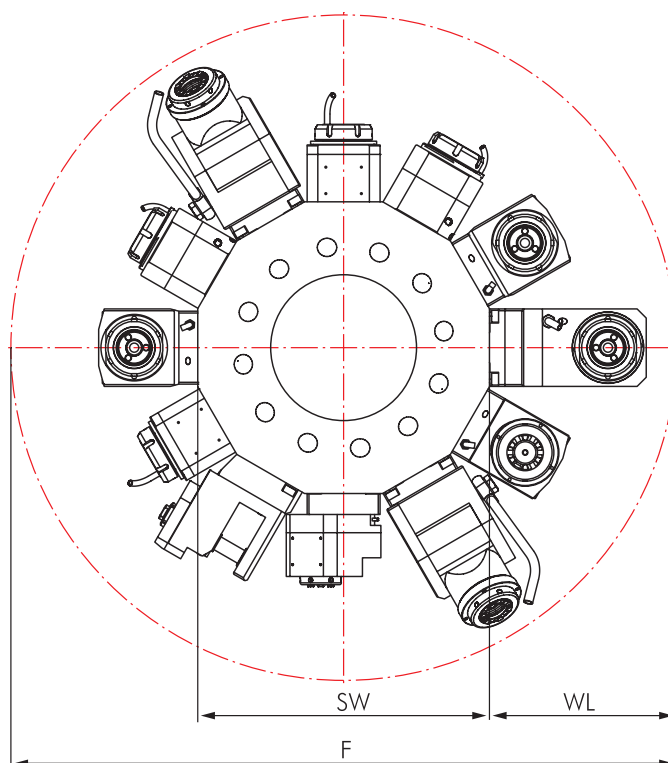
Machine type Series	Turret Stations
<b>QTNX 300/300-II M / MY</b>	12
<b>QTNX 350/350-II M / MY</b>	12
<b>QTNX 400/400-II M</b>	12
<b>QTNX 450/450-II M</b>	12
<b>SQT 28 M / MS</b>	12
<b>SQT 30 M / MS</b>	12
<b>SQT 300 M / MS</b>	12



### Star-type Turret VDI 50



### Interference Circles



Machine type Series	F	SW	WL
<b>QTNX 300/400</b>	810	380	215
<b>SQT 28/30</b>	810	380	215

**QUICK TURN NEXUS 300/350/400/450 + SUPER QUICK TURN 28/30**

**Live Tools**

		Page		Page
<b>Straight Unit, Offset Type</b>		290	<b>Straight Unit, Twin type</b>	292
<b>Angle Unit</b>		291	<b>Angle Unit, Twin type</b>	293

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit, Offset Type

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**NEXUS QTNX 300/350/400/450 + SQT 28/30**

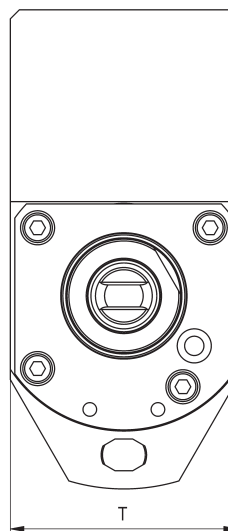
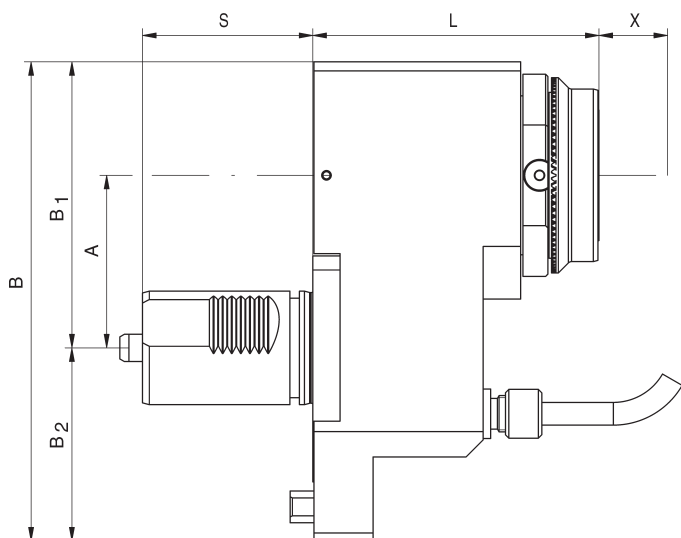
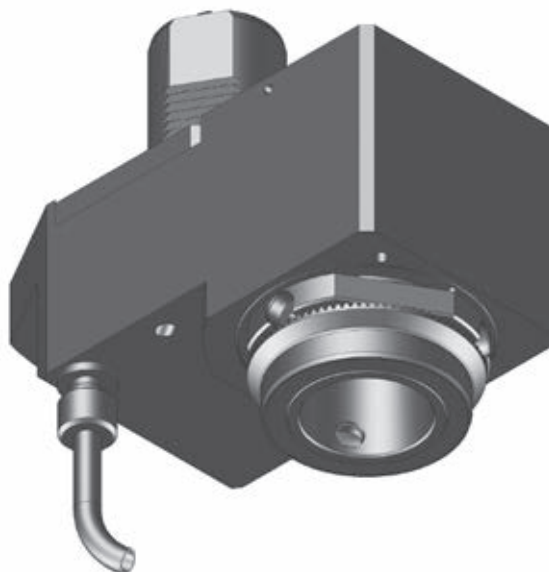
QTNX	SQT
300 M/MY-12x	28 M/MS-12x
350 M/MY-12x	30 M/MS-12x
400 M-12x	300 M/MS-12x
450 M-12x	

Dimensions

Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12 mm

Modular Interfaces

**mimaticMi**  
**mimatic capto**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
124037	ER 40	2,0-26	100 Nm	6.500 / 6.500	i = 1:1	external	82,0	133	76	208	126	82	75	100	↺ ↻
123690	ER 40*	2,0-26	100 Nm	6.500 / 6.500	i = 1:1	internal	74,0	141	76	208	126	82	75	100	↺ ↻
123691	mi 63	-	100 Nm	6.500 / 6.500	i = 1:1	internal	95,0	126	76	208	126	82	75	100	↺ ↻
131538	SK/CAT 40	-	100 Nm	6.500 / 6.500	i = 1:1	external	116,0	99	76	208	126	82	75	96	↺ ↻
103663	SK/CAT 40	-	100 Nm	6.500 / 6.500	i = 1:1	internal	106,5	108	75	223	126	82	75	100	↺ ↻
173558	C 5	-	100 Nm	6.500 / 6.500	i = 1:1	internal	105,0	110	75	223	65	158	75	100	↺ ↻
Without offset:															
102810	C 5	-	100 Nm	6.500 / 6.500	i = 1:1	internal	108,0	112	-	146,5	-	-	75	100	↺ ↻

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TriaCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**NEXUS QTNX 300/350/  
400/450 + SQT 28/30**

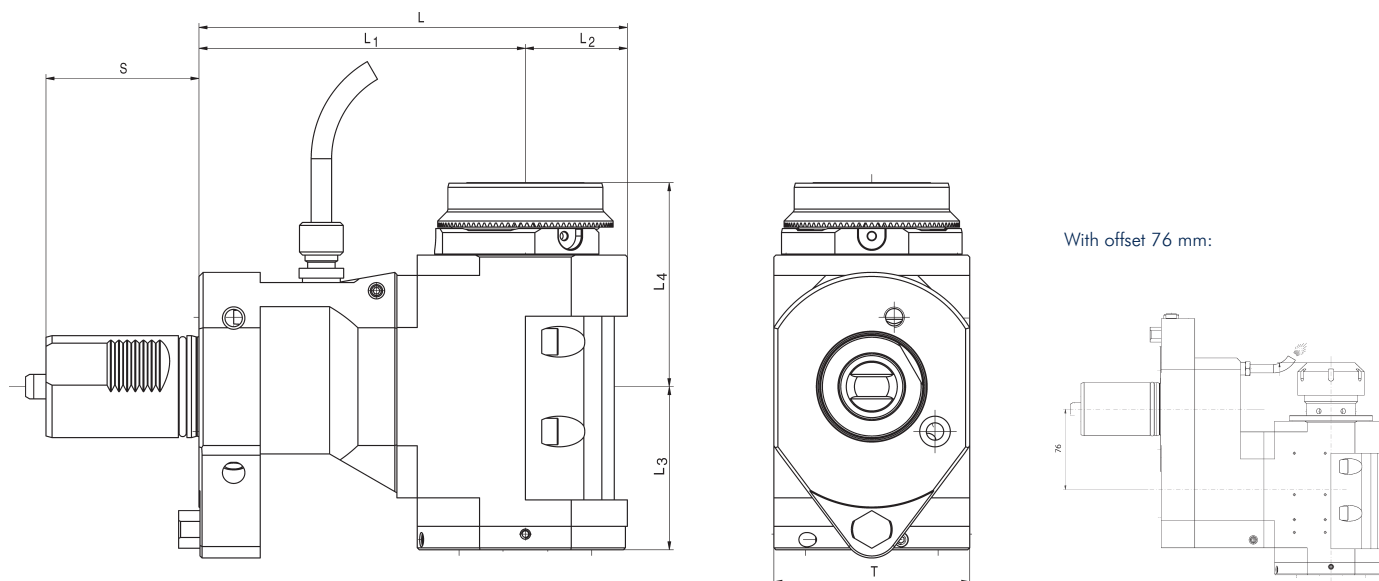
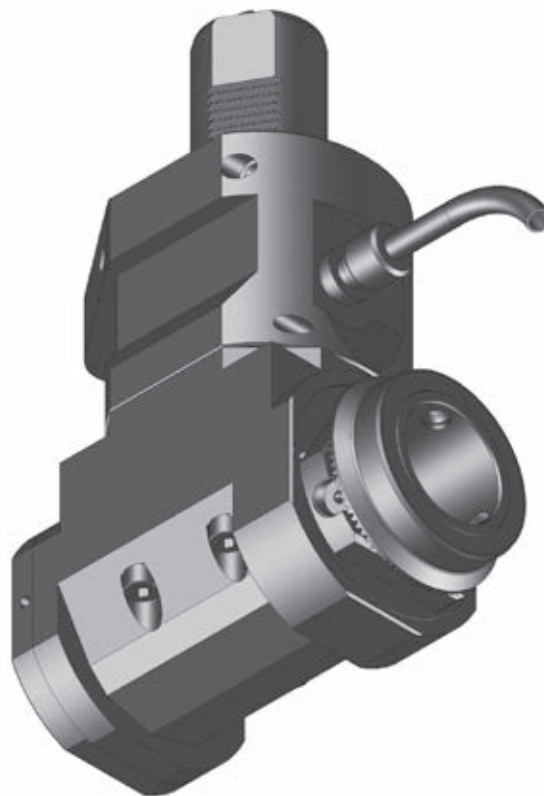
QTNX	SQT
300 M/MY-12x	28 M/MS-12x
350 M/MY-12x	30 M/MS-12x
400 M-12x	300 M/MS-12x
450 M-12x	

Dimensions

Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12 mm

Modular Interfaces

**mimaticMi**  
**mimatic capto**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124641	ER 40	2-30	100 Nm	6.500 / 6.500	i = 1:1	external	210	160	50	91,5	119,5	75	96	↺ ↻
124877	ER 40*	2-30	100 Nm	6.500 / 6.500	i = 1:1	internal	210	160	50	91,5	119,5	75	96	↻ ↺
124878	mi 63	-	100 Nm	6.500 / 6.500	i = 1:1	internal	210	160	50	91,5	103,0	75	96	↺ ↻
131591	SK/CAT 40	-	100 Nm	6.500 / 6.500	i = 1:1	external	210	160	50	80,0	81,0	75	96	↻ ↺
103667	SK/CAT 40	-	100 Nm	6.500 / 6.500	i = 1:1	internal	210	160	50	80,0	81,0	75	96	↺ ↻
131605	C 5	-	100 Nm	6.500 / 6.500	i = 1:1	internal	215	160	55	85,0	65,0	75	130	↻ ↺
With offset 76 mm:														
180586**	ER 40	2-30	100 Nm	6.500 / 6.500	i = 1:1	external	210	160	50	155	43,5	75	96	↻ ↺
With twin axe:														
173233	2x ER 32	1-20	50 Nm	6.500 / 6.500	i = 1:1	external	199	160	39	70	70	75	96	-

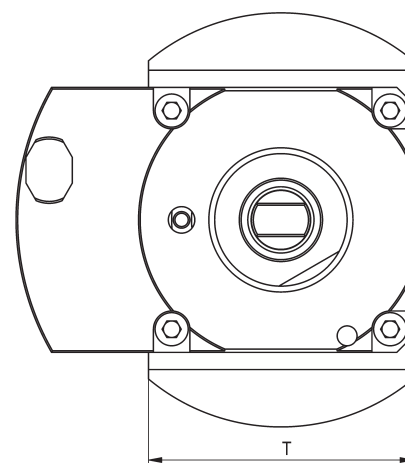
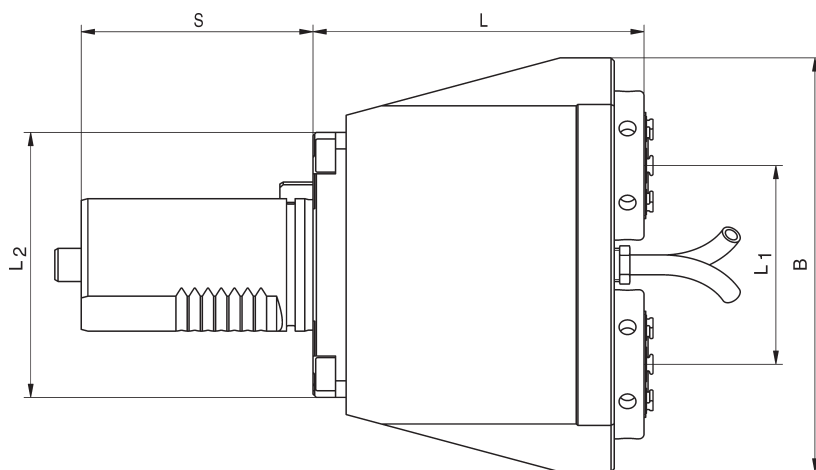
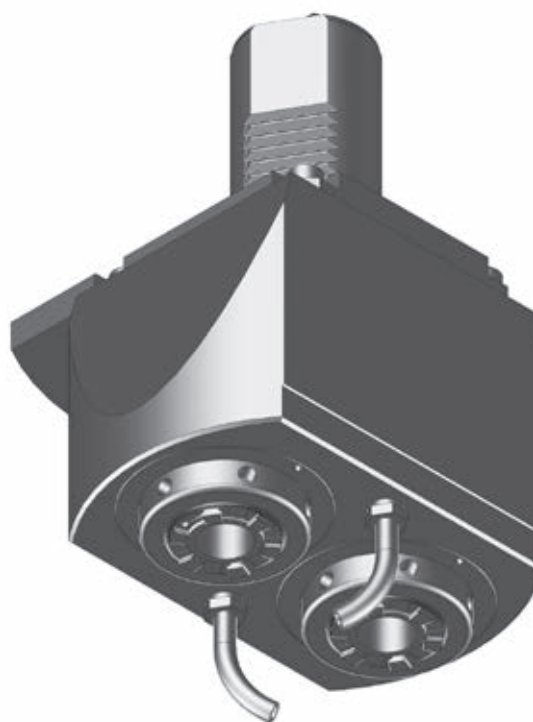
\* With clamping nuts with sealing, seals see page 530

\*\* Type for sub-spindle

# Straight Unit, Twin Type

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» PolyMILL » TriMILL

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 300/350-II</b>	
<b>QTNX</b> 300 MY/MSY-12x 350 MY/MSY-12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12 mm

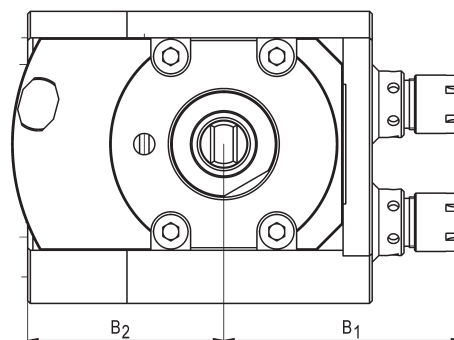
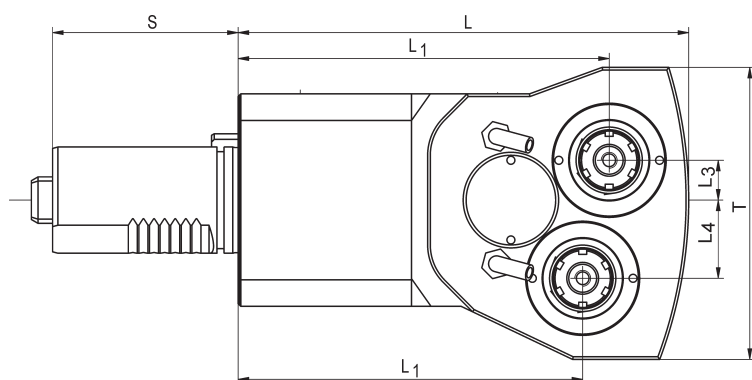
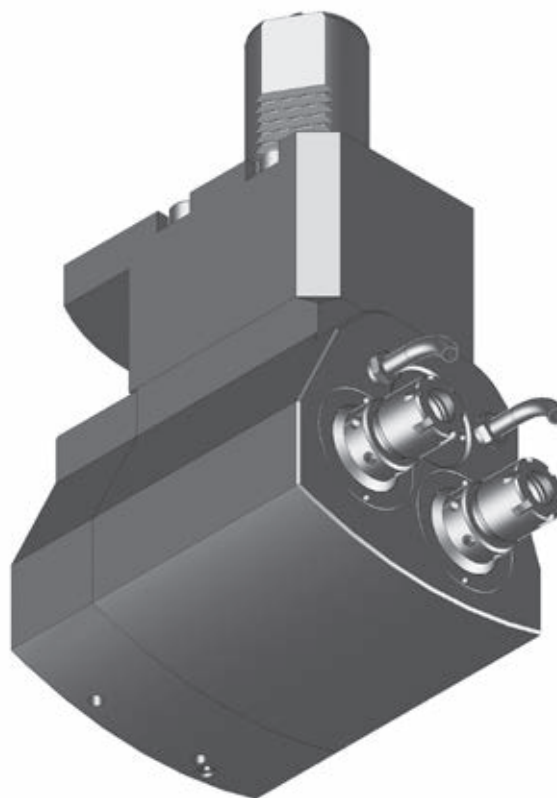


Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
171042	2x ER 32	1,0-20	2x 20 Nm	6.500 / 6.500	i = 1:1	external	125	75	96	150	75	90	↺ ↻
171063	2x ER 32*	1,0-20	2x 20 Nm	6.500 / 6.500	i = 1:1	internal	125	75	96	150	75	90	↻ ↺
171064	2x mi 50		2x 20 Nm	6.500 / 6.500	i = 1:1	internal	140	75	96	150	75	90	↻ ↺

# Angle Unit, Twin Type

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>NEXUS QTNX 300/350-II</b>	
<b>QTNX</b> 300 MY/MSY-12x 350 MY/MSY-12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12 mm



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
162912	2x ER25	0,5-10	20 Nm	6.500 / 6.500	i = 1:1	external	170	140/130	30	35	47,47	93	94	75	140	↻ ↻
162913	2x ER25*	0,5-10	20 Nm	6.500 / 6.500	i = 1:1	internal	170	140/130	30	35	47,47	93	94	75	140	↻ ↻

\* With clamping nuts with sealing, seals see page 530

# Mazak

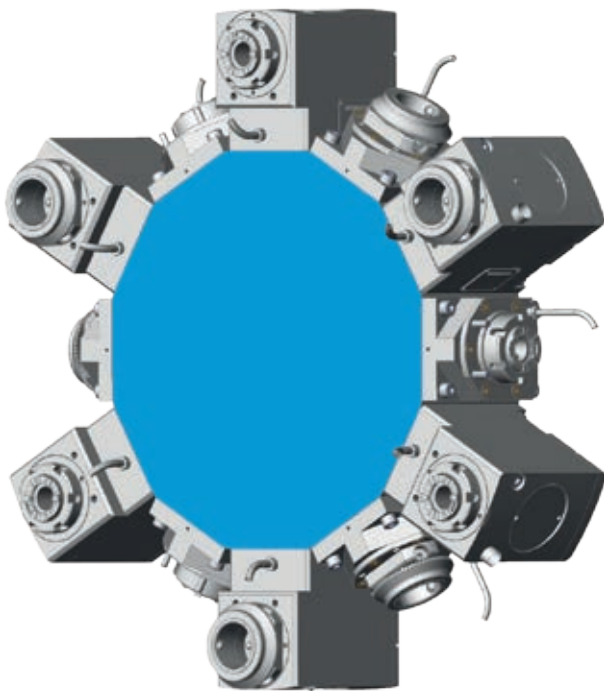
## QUICK TURN SMART 100 M / 200 M

### Data

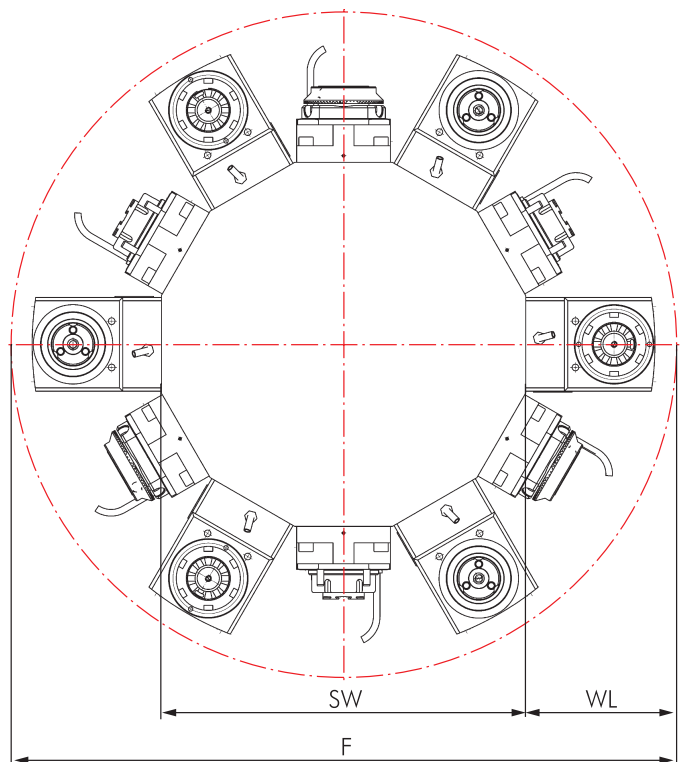
Machine Type Series	Turret Stations
<b>QTS 100 M</b>	12
<b>QTS 200 M</b>	12



### Star-Type Turret BMT





### Interference Circles



Machine type Series	F	SW	WL
<b>QTS 100 M</b>	564	330	117
<b>QTS 200 M</b>	580	330	125



**Live Tools**

	Page		Page
<b>Straight Unit</b>			296
<b>Angle Unit</b>			297

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



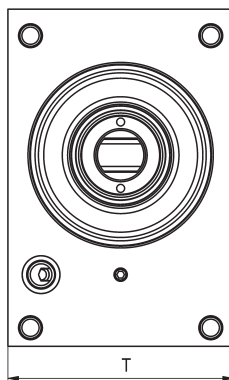
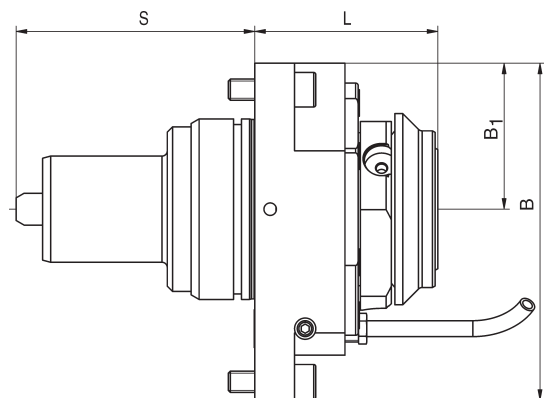
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

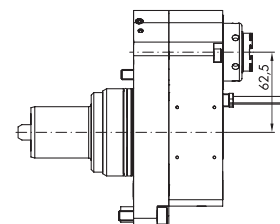
# Straight Unit, Offset and without Offset Type

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine Type	
<b>QUICK TURN SMART 100 M/200M</b>	
<b>QTS</b>	
100M 200M	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 68 mm
Drive	Tang
SW	12 mm
Modular Interfaces	
<b>mimaticMi</b>	



With offset:

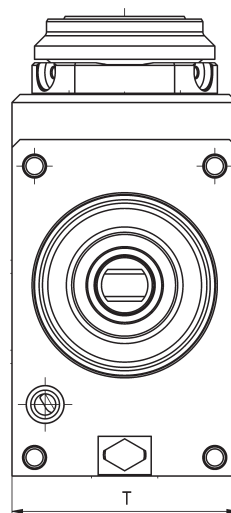
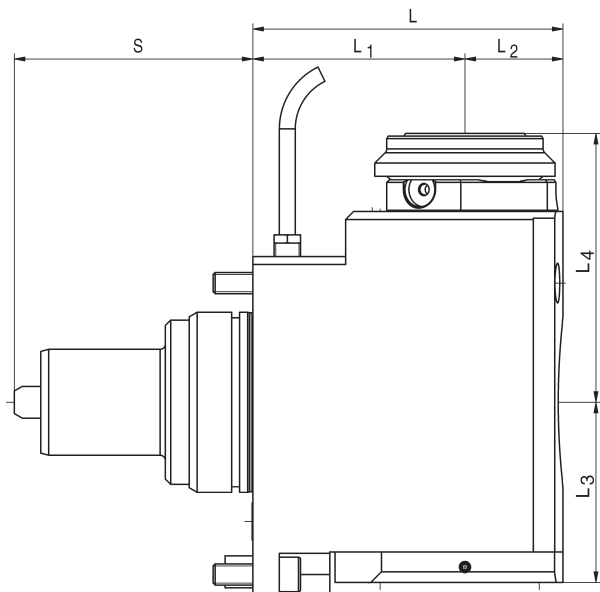
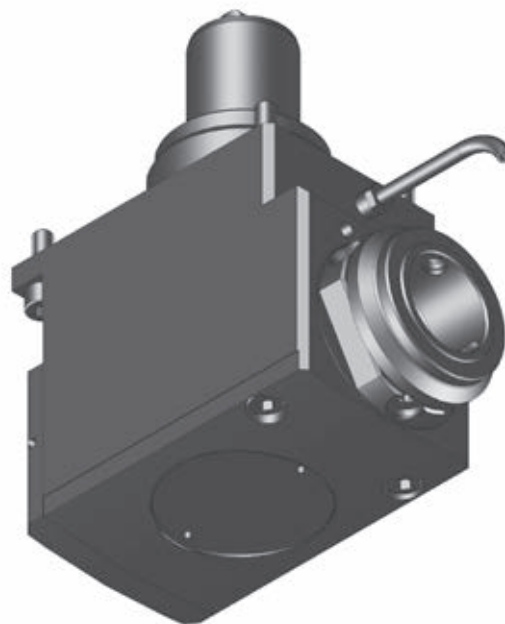


Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	A mm	B mm	B1 mm	S mm	T mm	Rotating direction
162920	ER 25	0,5-16	80 Nm	6.500 / 6.500	i = 1:1	external	90	0	85	42,5	80	127	↺ ↻
176781	ER 25*	0,5-16	80 Nm	6.500 / 6.500	i = 1:1	internal	90	0	85	42,5	80	127	↻ ↺
162921	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	81	0	85	42,5	80	127	↺ ↻
176783	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	81	0	85	42,5	80	127	↻ ↺
174673	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	60	0	85	42,5	80	127	↺ ↻
174674	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	60	0	85	42,5	80	127	↻ ↺
174901	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	69	0	85	42,5	80	127	↺ ↻
<b>With offset 62,5 mm:</b>													
177631	ER 25	0,5-16	25 Nm	4.000 / 6.000	i = 1:1,5	internal	84,5	62,5	167	95	90	85	↺ ↻

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine Type	
<b>QUICK TURN SMART 100 M/200M</b>	
<b>QTS</b>	
100M 200M	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 68 mm
Drive	Tang
SW	12 mm
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
174675	ER 32	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	external	117	80	37	69	86,0	80	85	↺ ↻
174676	ER 32*	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	internal	117	80	37	69	86,0	80	85	↻ ↺
174902	mi 50	-	70 Nm	6.500 / 6.500	i = 1:1	internal	117	80	37	69	101,5	80	85	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Mazak

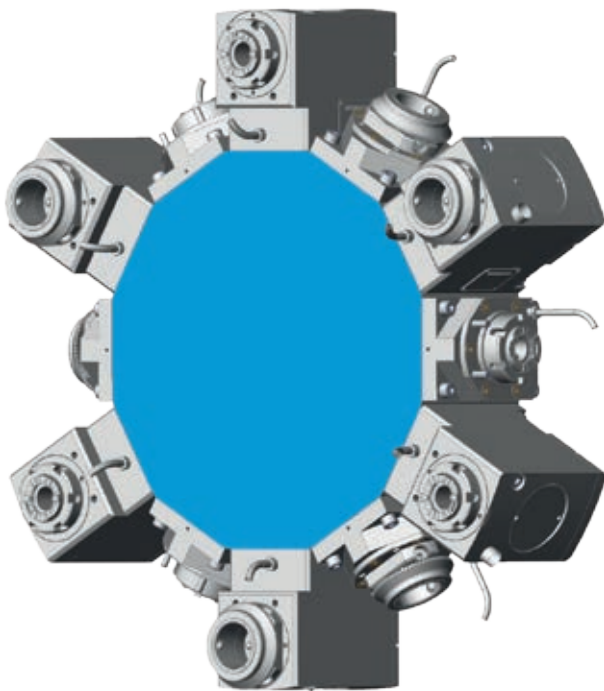
## QUICK TURN SMART 300 M / 350 M

### Data

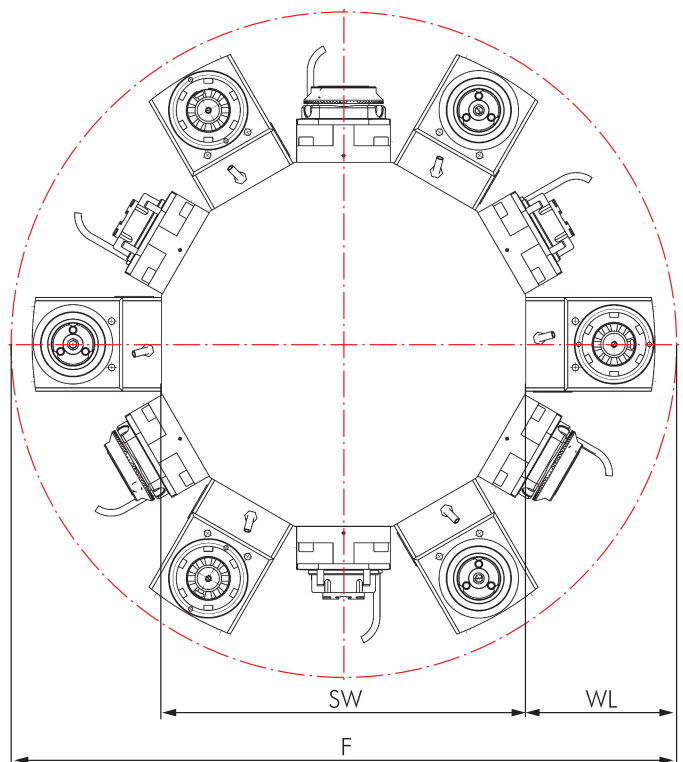
Machine Type Series	Turret Stations
<b>QTS 300 M</b>	12
<b>QTS 350 M</b>	12



### Star-Type Turret BMT



### Interference Circles



Machine type Series	F	SW	WL
<b>QTS 300 M</b>	700	380	160
<b>QTS 350 M</b>	700	380	160




# Mazak

## QUICK TURN SMART 300 M / 350 M

Connectable in accordance with  
**BLUECOMPETENCE**

» mimatic mi  
» PolyMILL » TriMILL » TrioCut » PolyREAM

### Live Tools

	Page		Page		
<b>Straight Unit</b>		300	<b>Angle Unit, adjustable 0-90°</b>		302
<b>Angle Unit</b>		301			

### Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



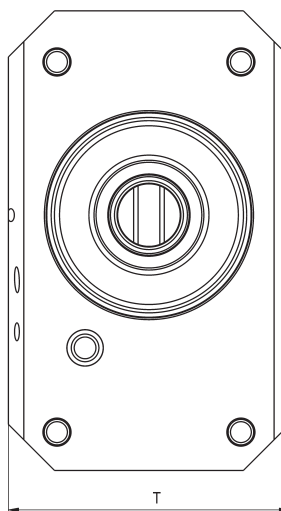
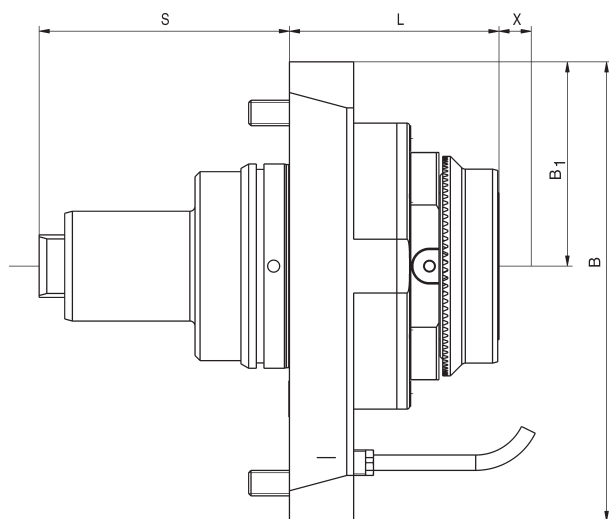
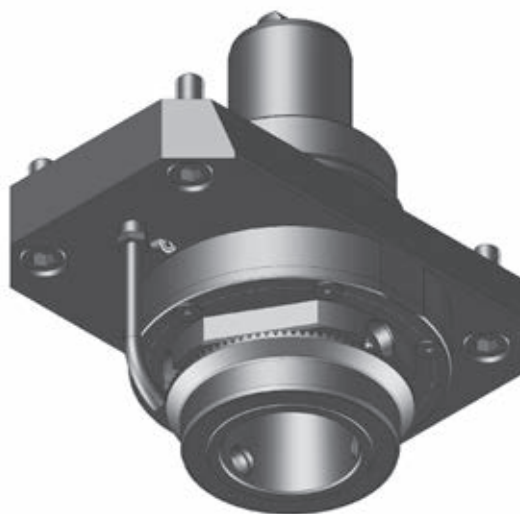
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

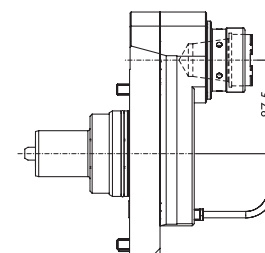
# Straight Unit, Offset and without Offset Type

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine Type	
<b>QUICK TURN SMART 300M/350M</b>	
<b>QTS</b>	
300M 350M	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 80 mm
Drive	Tang
SW	12 mm
Modular Interfaces	
<b>mimaticMi</b>	



With offset:

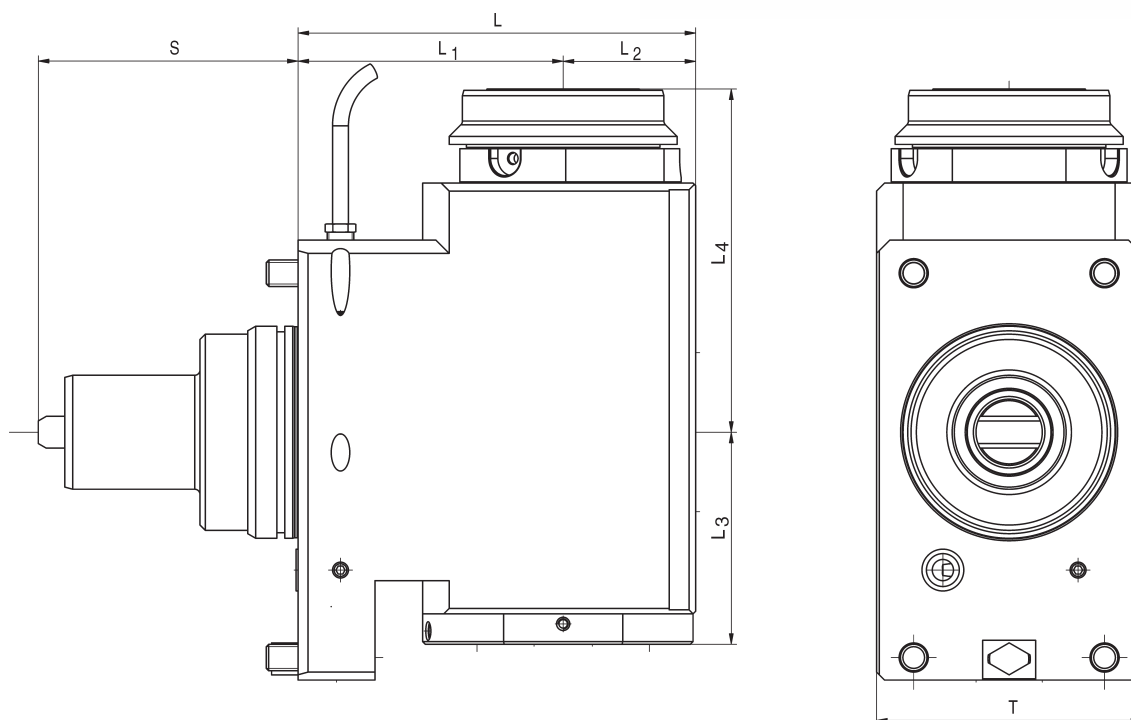
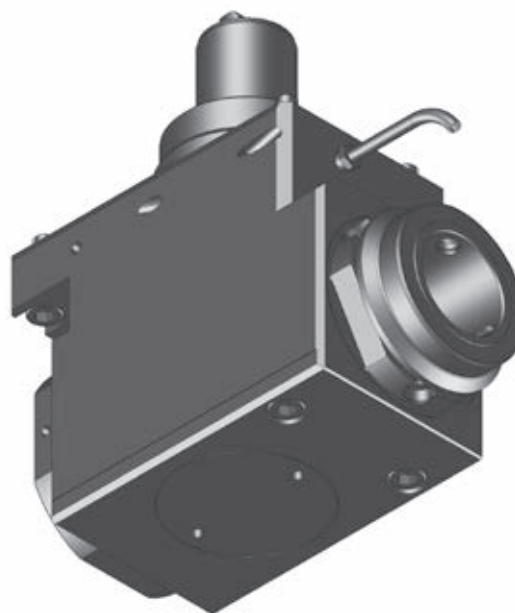


Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
175586	ER 40	2,5-30	140 Nm	6.500 / 6.500	i = 1:1	external	89	71	175	55	88	110	↺ ↻
175587	ER 40*	2,5-30	140 Nm	6.500 / 6.500	i = 1:1	internal	89	71	175	55	88	110	↻ ↺
175588	mi 63	-	140 Nm	6.500 / 6.500	i = 1:1	internal	78	82	175	55	88	110	↻ ↺
<b>With offset 87,5 mm:</b>													
179163	ER 40	2,5-30	50 Nm	4.000 / 6.000	i = 1:1,5	internal	45	108	225	132,5	88	120	↻ ↺

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TriaCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine Type	
<b>QUICK TURN SMART 300M/350M</b>	
<b>QTS</b>	
300M	
350M	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 80 mm
Drive	Tang
SW	12 mm
Modular Interfaces	
<b>mimaticMi</b>	



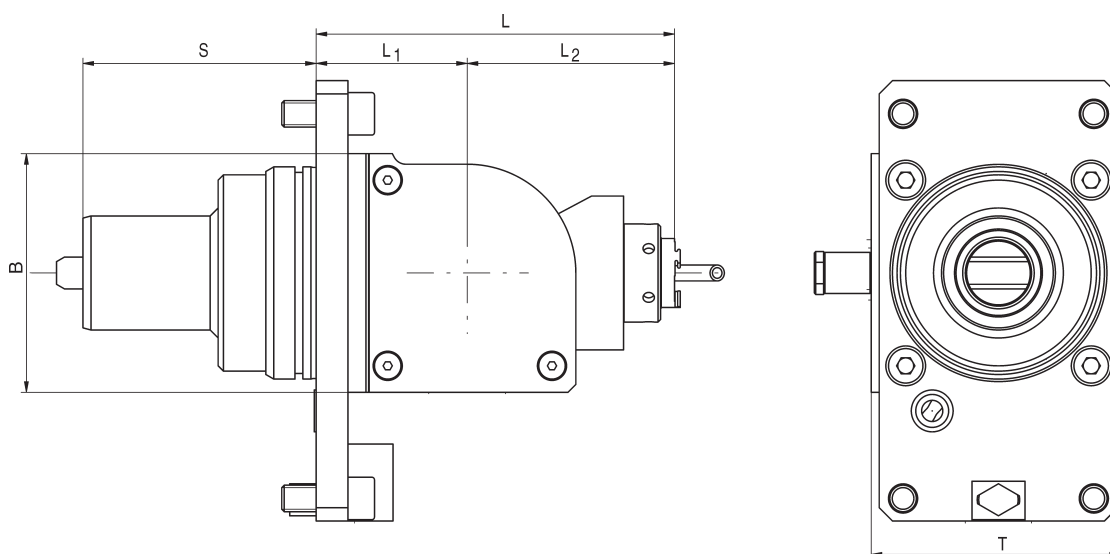
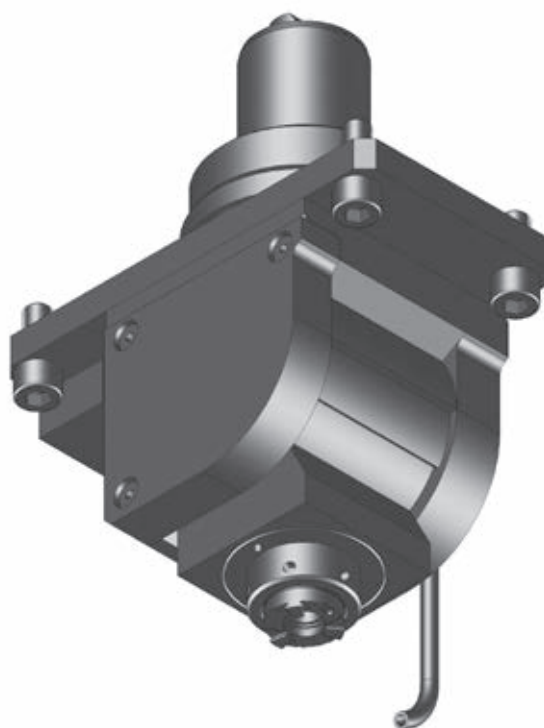
Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
175591	ER 40	2,5-30	100 Nm	6.500 / 6.500	i = 1:1	external	150	100	50	80	108,0	88	100	↺ ↻
175592	ER 40*	2,5-30	100 Nm	6.500 / 6.500	i = 1:1	internal	150	100	50	80	108,0	88	100	↻ ↺
175593	mi 63	-	100 Nm	6.500 / 6.500	i = 1:1	internal	150	100	50	80	129,5	88	100	↺ ↻

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Adjustable 0-90°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine Type	
<b>QUICK TURN SMART 300M/350M</b>	
<b>QTS</b>	
300M 350M	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 80 mm
Drive	Tang
SW	12 mm



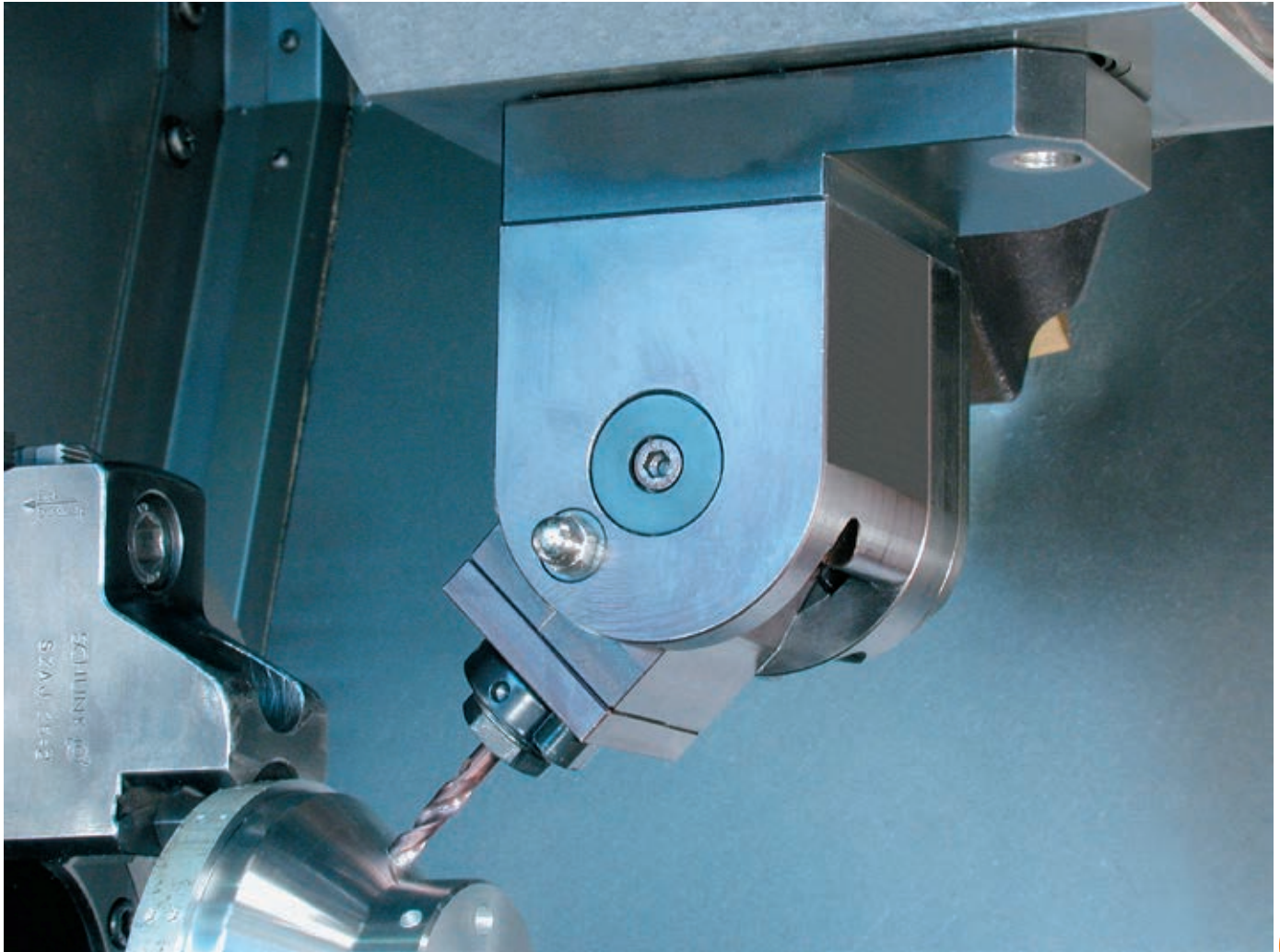
Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
176382	ER 20	1,0-13	20 Nm	6.500 / 6.500	i = 1:1	internal	135	57	78	90	88	94	↻ ↻



**BLUECOMPETENCE**

Alliance Member

Partner of the Engineering Industry  
Sustainability Initiative



Picture shows an adjustable angle head (90°) on a Mazak SQT 18 MS drilling holes on 45°.

# Mazak

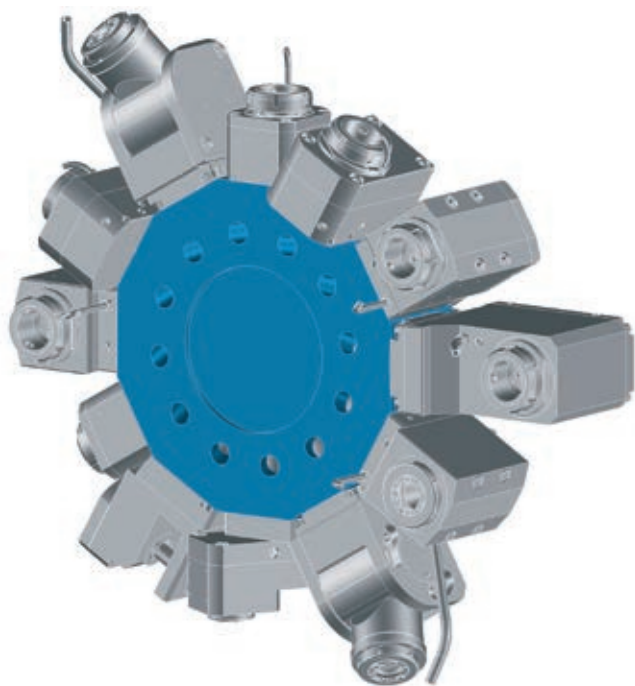
## MULTIPLEX 610/6100/6200 + HYPER QUADREX MSY 150

### Data

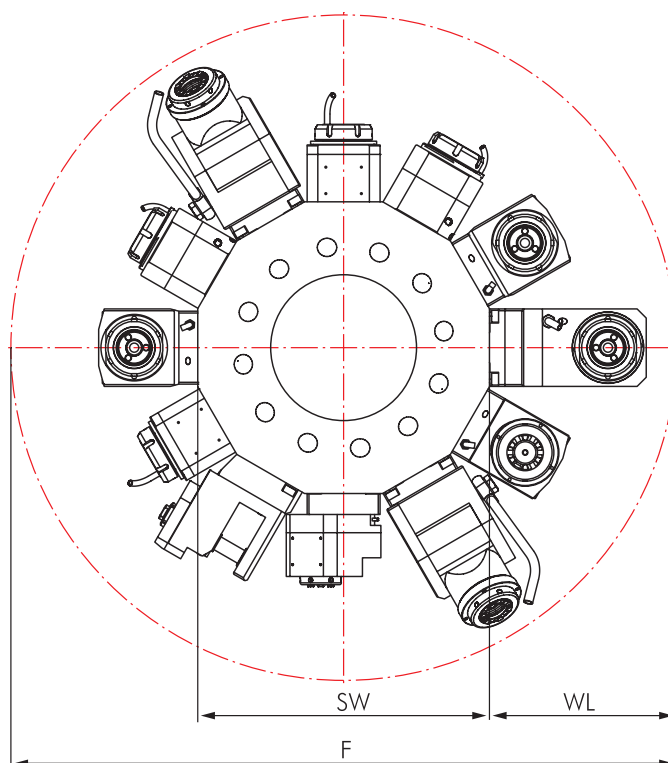
Machine type Series		Turret Stations
<b>MP 610</b>		12
<b>MP 6100/6100</b>	<b>Y</b>	16
<b>MP 6200/6200</b>	<b>Y</b>	16
<b>HQ 150</b>	<b>MSY</b>	12



### Star-type Turret VDI 40



### Interference Circles



Machine type Series	F	SW	WL
<b>Multiplex 610 / 6100</b>	596	286	155
<b>Multiplex 6200</b>	596	286	155
<b>HQ 100 / 150</b>	616	286	165

**MULTIPLEX 610/6100/6200 + HYPER QUADREX MSY 150**

**Driven Toolholders**

	Page		Page
<b>Straight Unit, Offset Type</b>	306-307		
		<b>Angle Unit, adjustable 0-100°</b>	310
			
<b>Angle Unit</b>	308-309		
		<b>Y-Unit, adjustable ± 90°</b>	311
			
		<b>Saw Blade Holder</b>	312
			

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



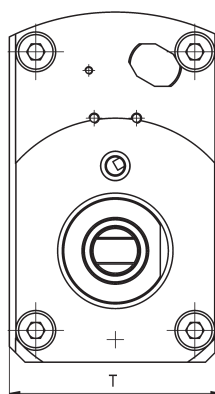
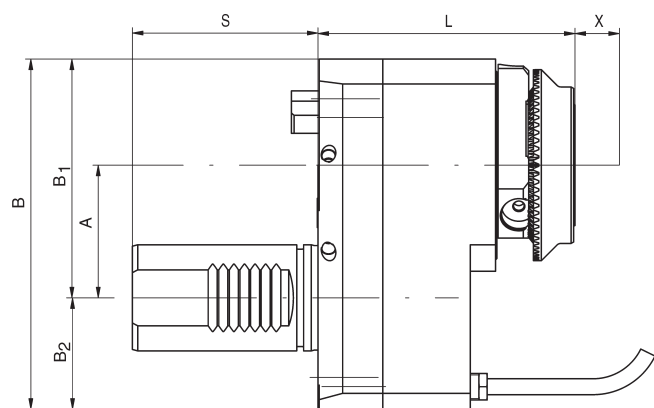
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

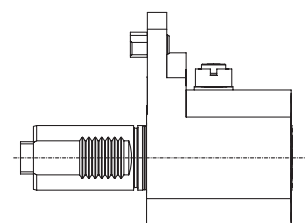
# Straight Unit, Offset Type

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 610/6100/6200 HYPER QUADREX MSY 150</b>	
<b>MP</b> 610 - 12x 6100 - 16x 6200 - 16x	<b>HQ MSY</b> 150 - 12x
Dimensions	
Turret type Shank Drive SW	Star-type Turret VDI 40 Tang 10 mm
Modular Interfaces	
<b>mimaticMi</b> <b>mimatic capto</b>	



Without offset:

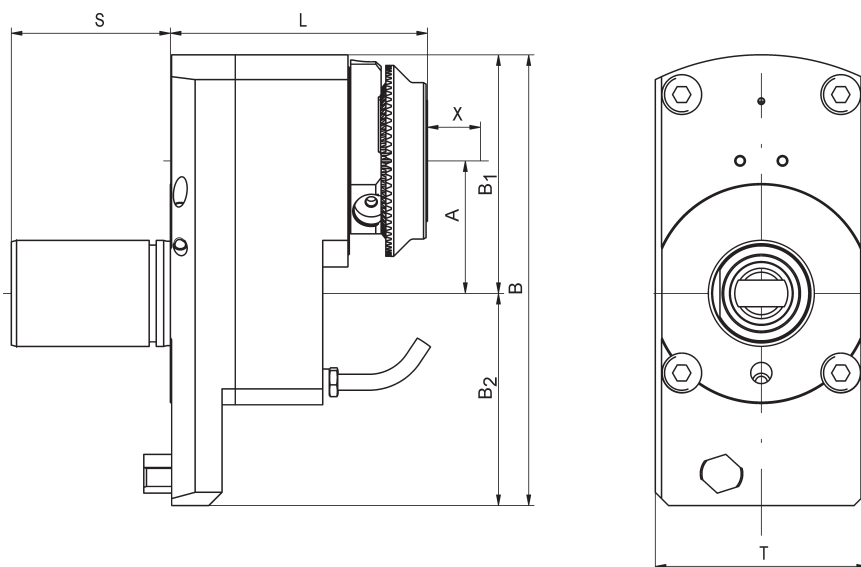
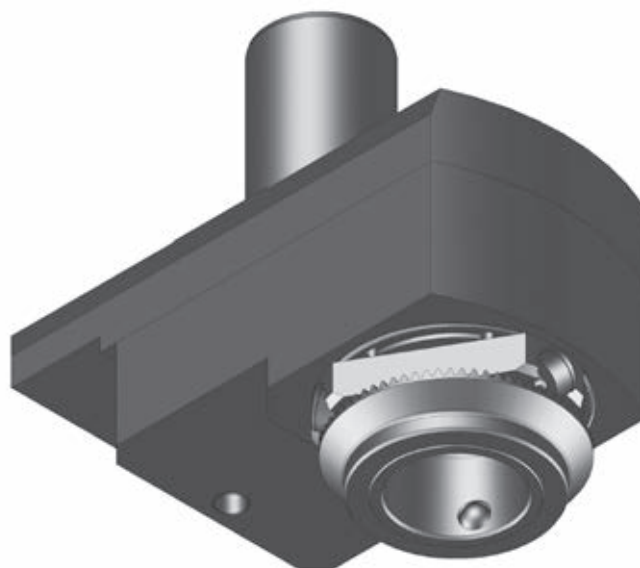


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
124018	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	65,0	90,0	50	132	90	42	60	80	↺ ↻
124252	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	65,0	90,0	50	132	90	42	60	80	↺ ↻
124064	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	83,5	71,5	50	118	84	34	60	68	↺ ↻
124342	ER 25*	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	internal	65,0	90,0	50	132	90	42	60	80	↺ ↻
123681	ER 25*	0,5-16	50 Nm	6.500 / 6.500	i = 1:1	internal	65,0	90,0	50	132	90	42	60	80	↺ ↻
124013	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	external	65,0	97,0	50	132	90	42	60	80	↺ ↻
123683	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	-	97,0	50	132	90	42	60	80	↺ ↻
123680	HF 20	6,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	-	89,0	50	132	90	42	60	80	↺ ↻
173557	C 4	-	50 Nm	6.500 / 6.500	i = 1:1	internal	(61,5)	93,5	50	134	92	42	60	84	↺ ↻
Without offset (HQ 150)															
173577	C 4	-	80 Nm	6.500 / 6.500	i = 1:1	external	-	80,0	-	132	90	42	60	84	↺ ↻

# Straight Unit, Offset Type for Sub-Spindle

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>HYPER QUADREX MSY 150</b>	
<b>HQ MSY</b> 150 - 12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm
Modular Interfaces	
<b>mimaticMi</b>	



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
174697	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	75	90	-50	180	90	90	60	80	↺ ↻
174698	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	75	90	-50	180	90	90	60	80	↻ ↺
174699	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	68	97	-50	180	90	90	60	80	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**MULTIPLEX 610/6100/6200**  
**HYPER QUADREX MSY 150**

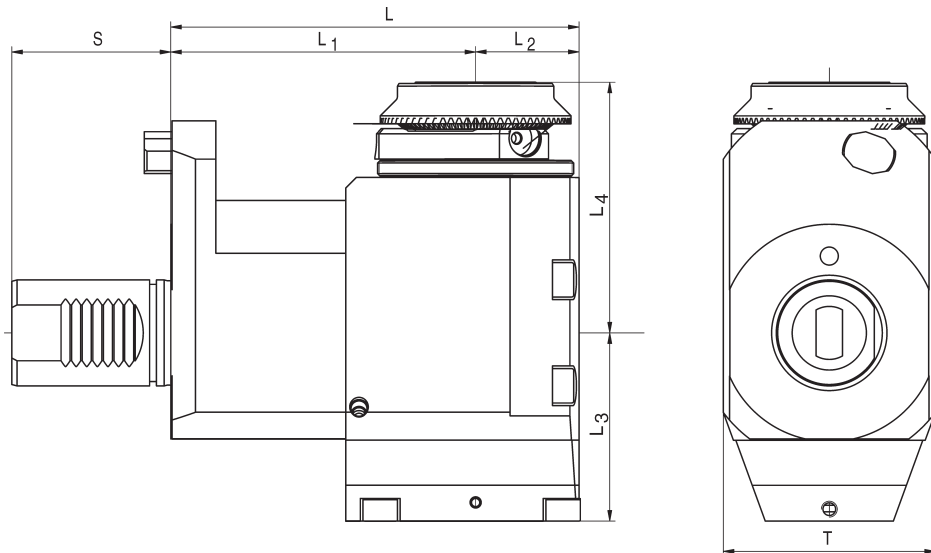
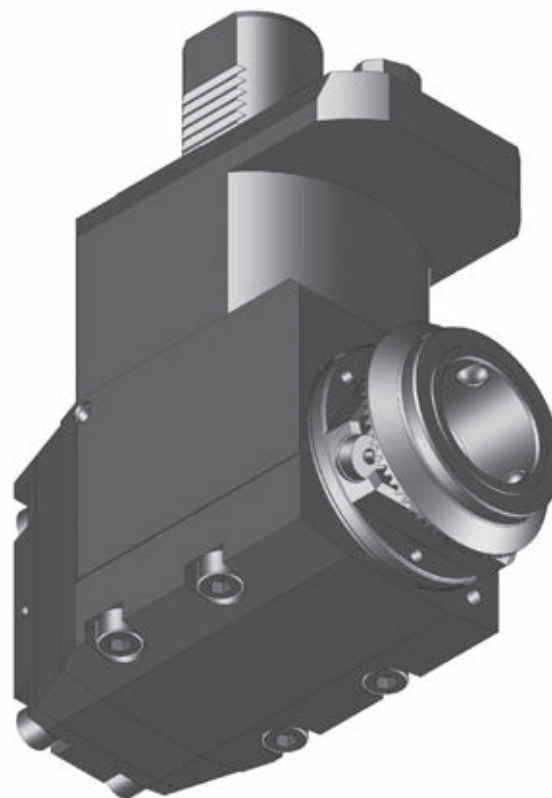
<b>MP</b>	<b>HQ MSY</b>
610 - 12x	150 - 12x
6100 - 16x	
6200 - 16x	

Dimensions

Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm

Modular Interfaces

**mimaticMi**  
**mimatic capto**

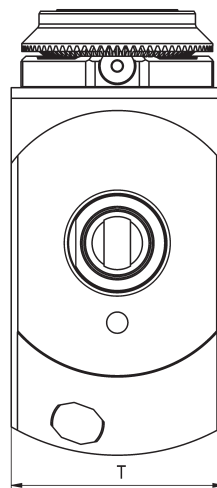
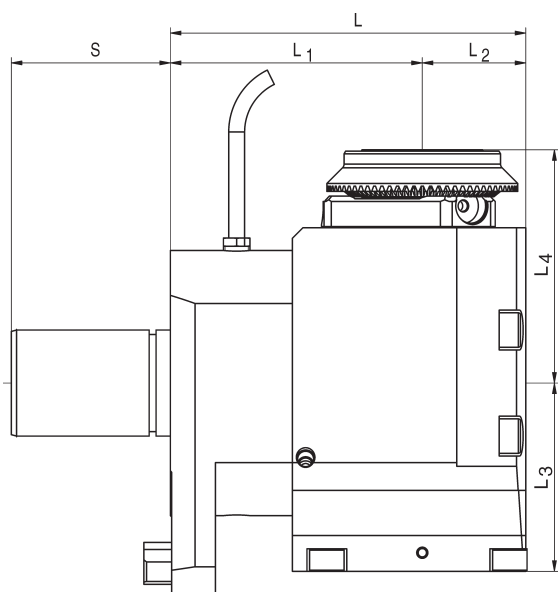
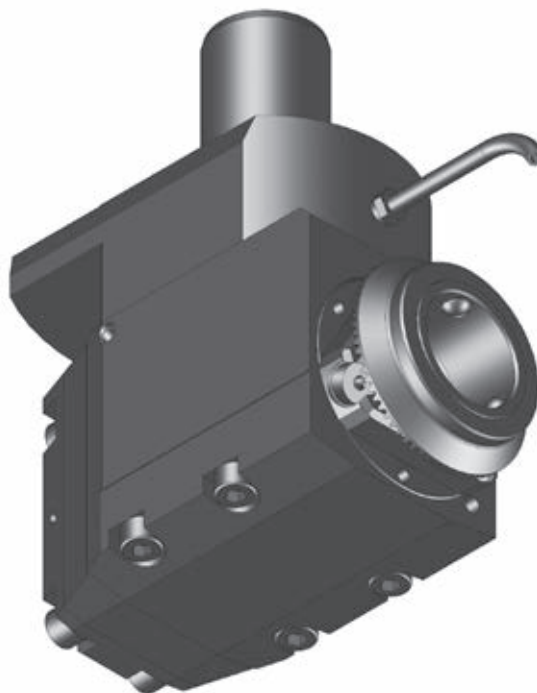


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124610	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	154	115	39	69,0	70	60	85	↺ ↻
124854	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	154	115	39	71,0	70	60	85	↺ ↻
124856	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	155	115	39	71,0	88	60	80	↺ ↻
124689	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	149	115	34	40,0	78	60	80	↺ ↻
124850	HF 20	6,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	149	115	39	71,0	81	60	80	↺ ↻
170167	mi 40	-	25 Nm	6.500 / 13.000	i = 1:2	external	149	115	34	40,0	97	60	80	↺ ↻
124915	mi 40	-	25 Nm	6.500 / 13.000	i = 1:2	internal	154	115	39	72,5	97	60	80	↺ ↻
173583	C 4	-	60 Nm	6.500 / 6.500	i = 1:1	internal	152	110	42	71,0	75	70	85	↺ ↻

# Angle Unit for Sub-Spindle

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>HYPER QUADREX MSY 150</b>	
<b>HQ MSY</b> 150 - 12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm
Modular Interfaces	
<b>mimaticMi</b>	



13

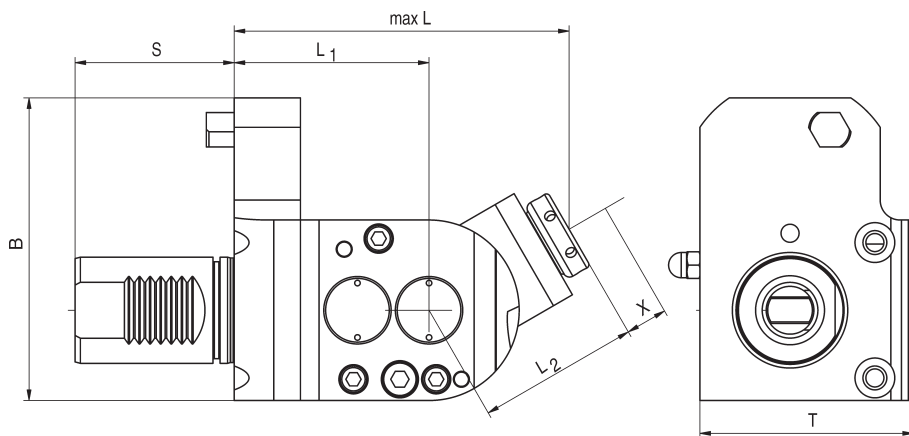
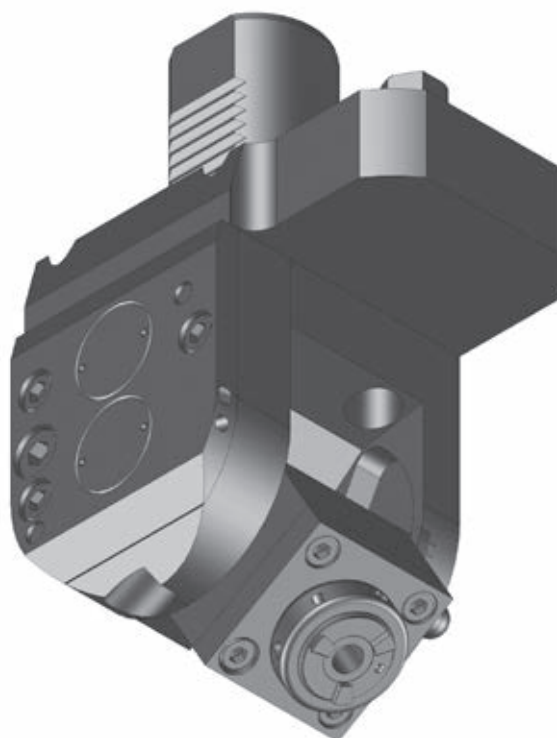
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
174700	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	154	115	39	72	69	60	80	↺ ↻
174701	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	154	115	39	72	69	60	80	↻ ↺
174702	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	154	115	39	87	69	60	80	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Adjustable 0-100°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 610/6100/6200 HYPER QUADREX MSY 150</b>	
<b>MP</b> 610 - 12x 6100 - 16x 6200 - 16x	<b>HQ MSY</b> 150 - 12x
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



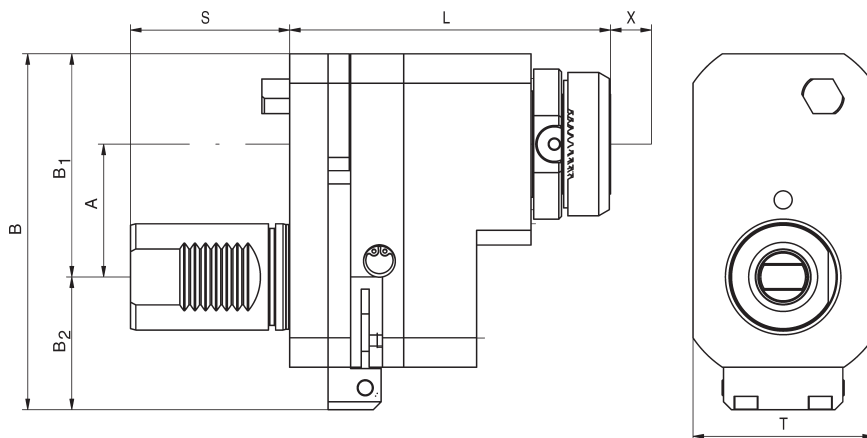
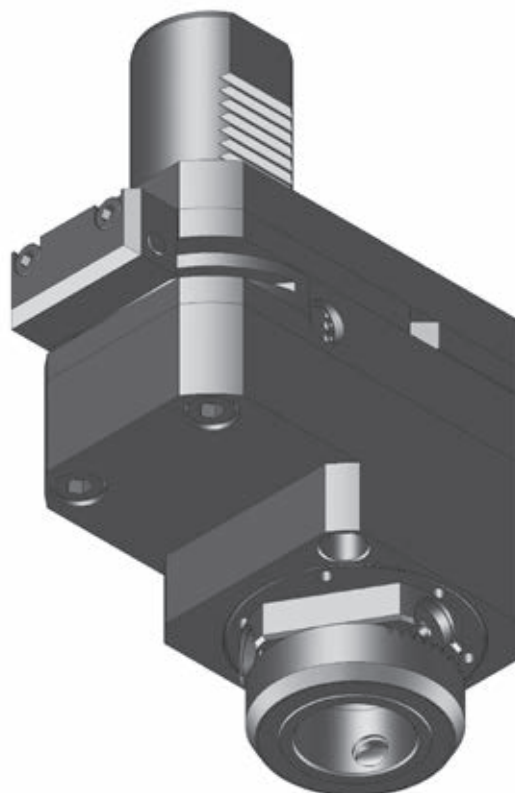
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
125024	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	20,5	134,5	73,5	61	114	60	80,5	↺ ↻
125051	ER 16	0,5-10	6 Nm	3.750 / 15.000	i = 1:4	external	20,5	134,5	73,5	61	114	60	80,5	↺ ↻



# Y-Unit, Adjustable $\pm 90^\circ$

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

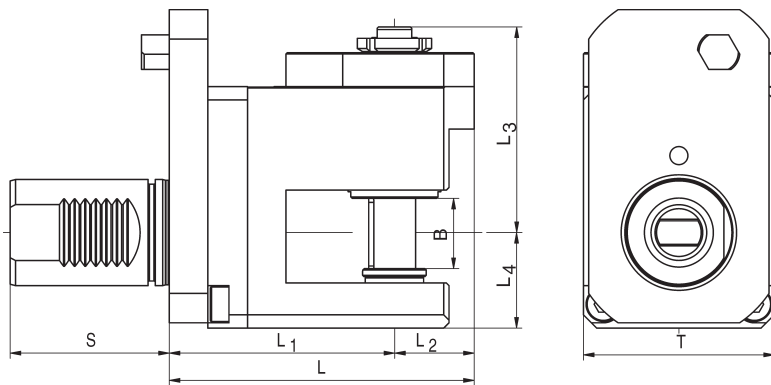
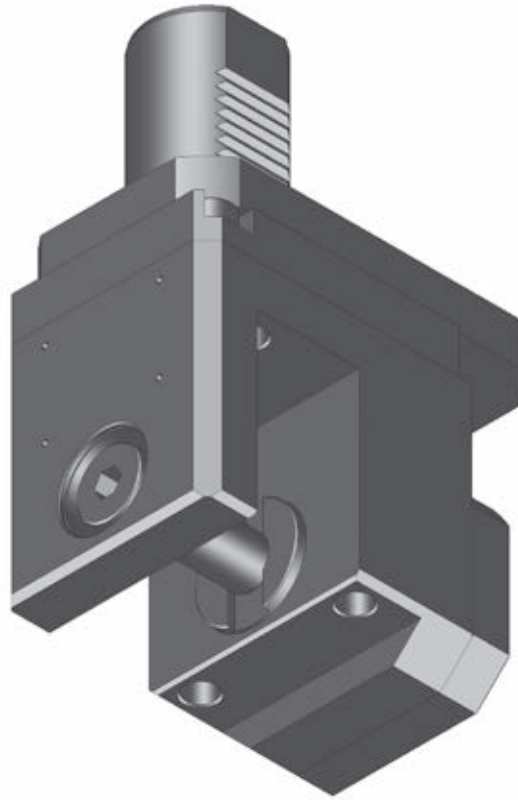
for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 610/6100/6200 HYPER QUADREX MSY 150</b>	
<b>MP</b> 610 - 12x 6100 - 16x 6200 - 16x	<b>HQ MSY</b> 150 - 12x
Dimensions	
Turret type Type	Star-type Turret $\pm 90^\circ$ continuous adjustable
Shank Drive SW	VDI 40 Tang 10 mm
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	S mm	T mm	Rotating direction
124114	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	55	100	50	134	60	68	
169223	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	external	-	121	50	134	60	68	

## Saw Blade Holder

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 610/6100/6200</b> <b>HYPER QUADREX MSY 150</b>	
<b>MP</b> 610 - 12x 6100 - 16x 6200 - 16x	<b>HQ MSY</b> 150 - 12x
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
125101*	22	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	30	77,5	36	25	60	72

**BLUECOMPETENCE**

Alliance Member

Partner of the Engineering Industry  
Sustainability Initiative



Picture shows a mimatic<sup>®</sup> 90° angle driven toolholder for Mazak VDI 40 with modular quick change system „mi“. The mimatic<sup>®</sup> mi interface is a very innovative modular quick change system to reduce machine downtimes because all units can be preset outside the machine.

# Mazak

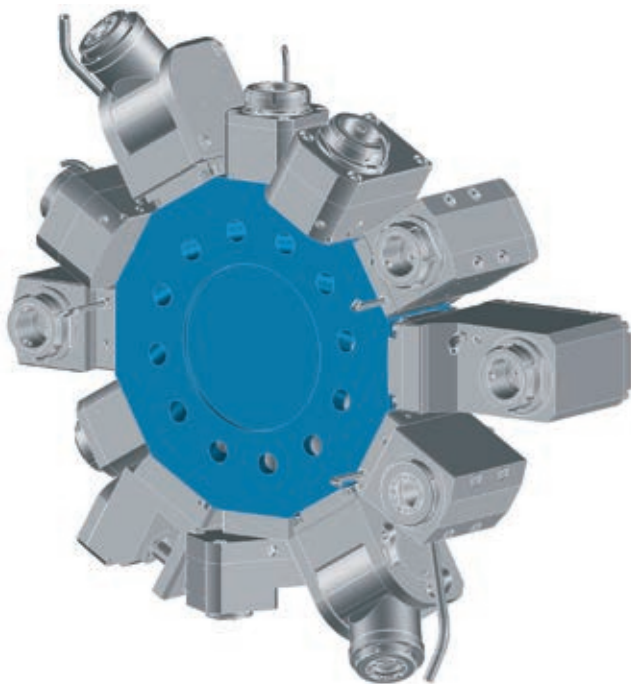
## MULTIPLEX 620/6200 + HYPER QUADREX MSY 200

### Data

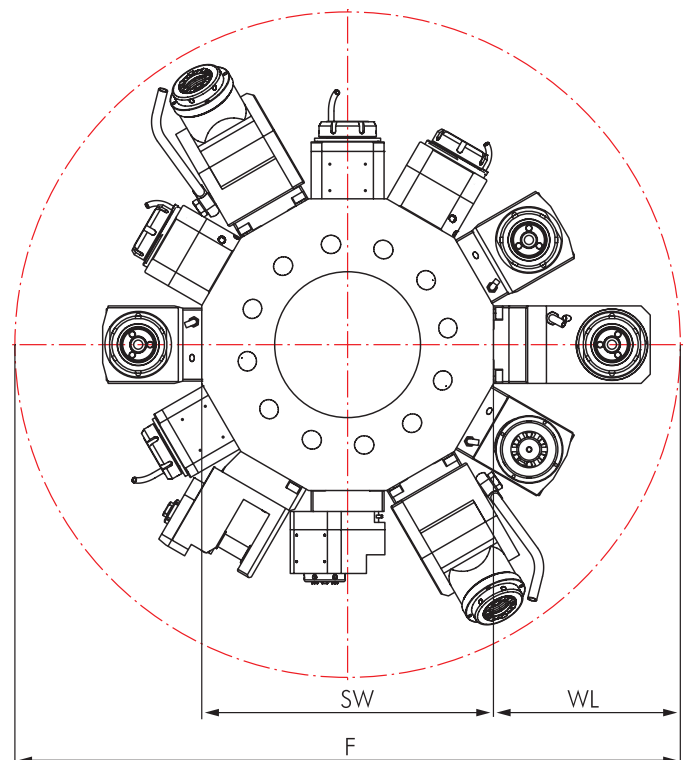
Machine type Series		Turret Stations
<b>MP 620</b>		12
<b>MP 6200/6200</b>	<b>Y</b>	12/16
<b>HQ 200</b>	<b>MSY</b>	12



### Star-type Turret VDI 40



### Interference Circles



Machine type Series	F	SW	WL
<b>Multiplex 620 / 6200</b>	680	320	180
<b>HQ 200 MSY</b>	700	320	190

**MULTIPLEX 620/6200 + HYPER QUADREX MSY 200**

**Live Tools**

	Page		Page
<b>Straight Unit, Offset Type</b>	316-317		
		<b>Angle Unit, adjustable 0-100°</b>	321
			
<b>Angle Unit</b>	318-319		
		<b>Y-Unit, adjustable ± 90°</b>	322
			
<b>Angle Unit, 2-Axis</b>	320		
		<b>Saw Blade Holder</b>	323
			

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**MULTIPLEX 620/6200**  
**HYPER QUADREX MSY 200**

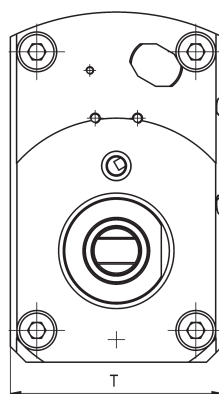
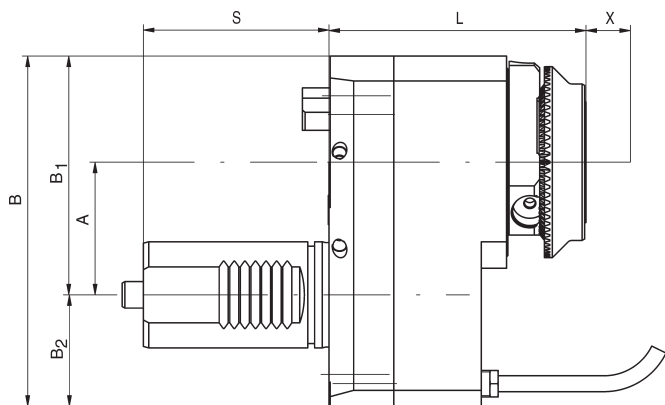
<b>MP</b>	<b>HQ</b>
620 - 12x	200 - 12x
6200 - 12x	

Dimensions

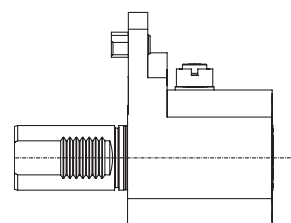
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm

Modular Interfaces

**mimaticMi**  
**mimatic capto**



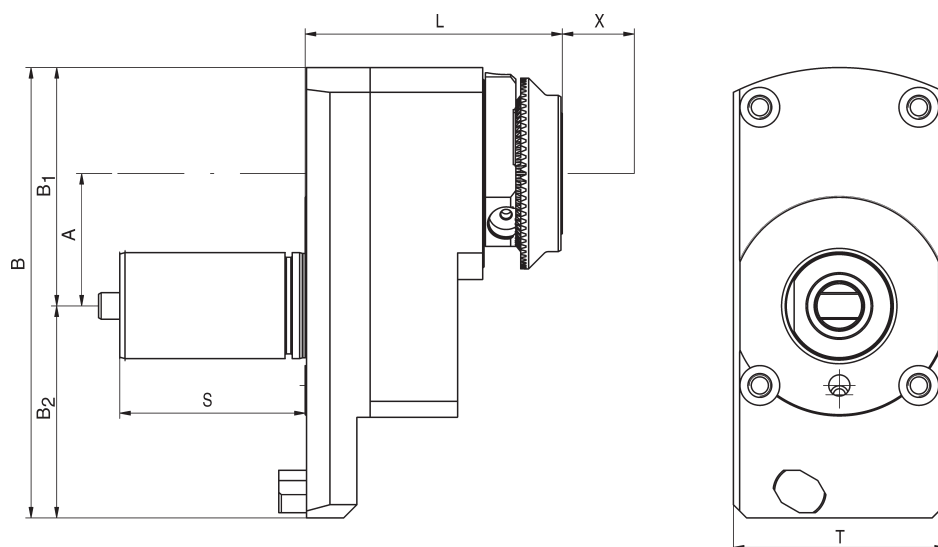
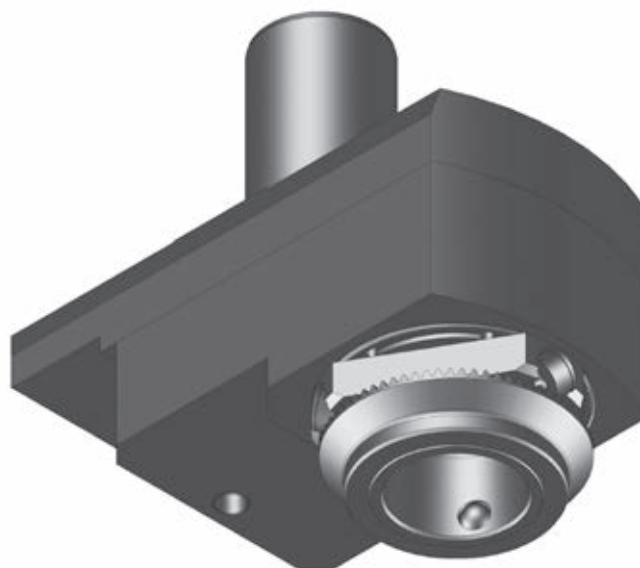
Without offset:



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
124021	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	90,0	90,0	50	132	90	42	70	80	↺ ↻
124255	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	90,0	90,0	50	132	90	42	70	80	↻ ↺
124065	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	108,5	71,5	50	118	84	34	70	68	↺ ↻
124343	ER 25*	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	internal	90,0	90,0	50	132	90	42	70	80	↻ ↺
175753	mi 40	-	25 Nm	6.500 / 13.000	i = 1:2	internal	69,0	111,0	50	132	90	42	70	80	↺ ↻
124014	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	external	83,0	97,0	50	132	90	42	70	80	↺ ↻
123684	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	83,0	97,0	50	132	90	42	70	80	↻ ↺
173556	C 4	-	50 Nm	6.500 / 6.500	i = 1:1	internal	86,5	93,5	50	132	90	42	70	84	↺ ↻
<b>Without offset (HQ 200)</b>															
169824	C 4	-	80 Nm	6.500 / 6.500	i = 1:1	external	-	90,0	-	132	90	42	70	84	↺ ↻

# Straight Unit, Offset Type for Sub-Spindle

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>HYPER QUADREX MSY 200</b>	
<b>HQ</b> 200 - 12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



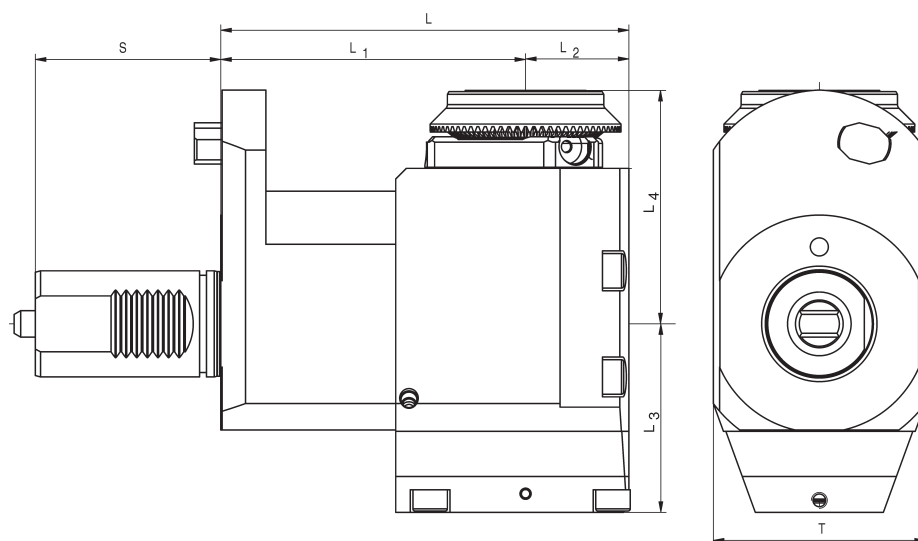
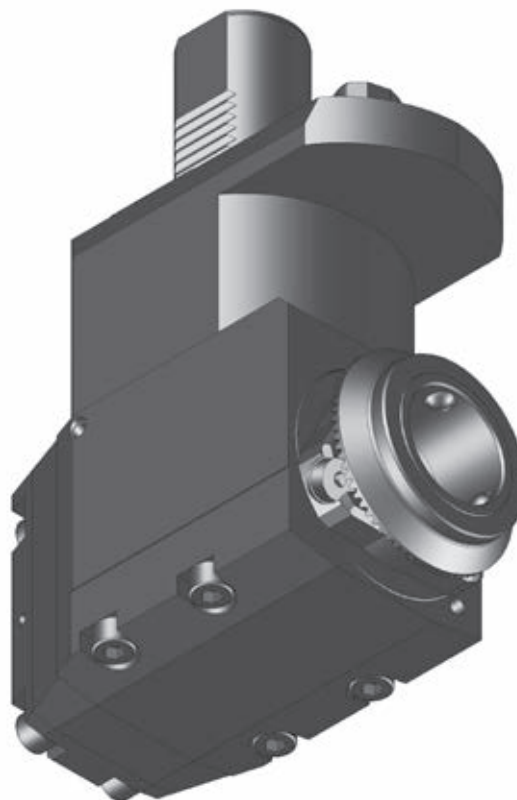
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
174703	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	100	90	-50	180	90	90	70	80	↺ ↻
174704	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	100	90	-50	180	90	90	70	80	↻ ↺
174705	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	external	93	97	-50	180	90	90	70	80	↺ ↻

\* With clamping nuts with sealing, seals see page 530

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 620/6200 HYPER QUADREX MSY 200</b>	
<b>MP</b> 620 - 12x 6200 - 12x	<b>HQ</b> 200 - 12x
Dimensions	
Turret type Shank Drive SW	Star-type Turret VDI 40 Tang 10 mm
Modular Interfaces	
<b>mimaticMi</b> <b>mimatic capto</b>	

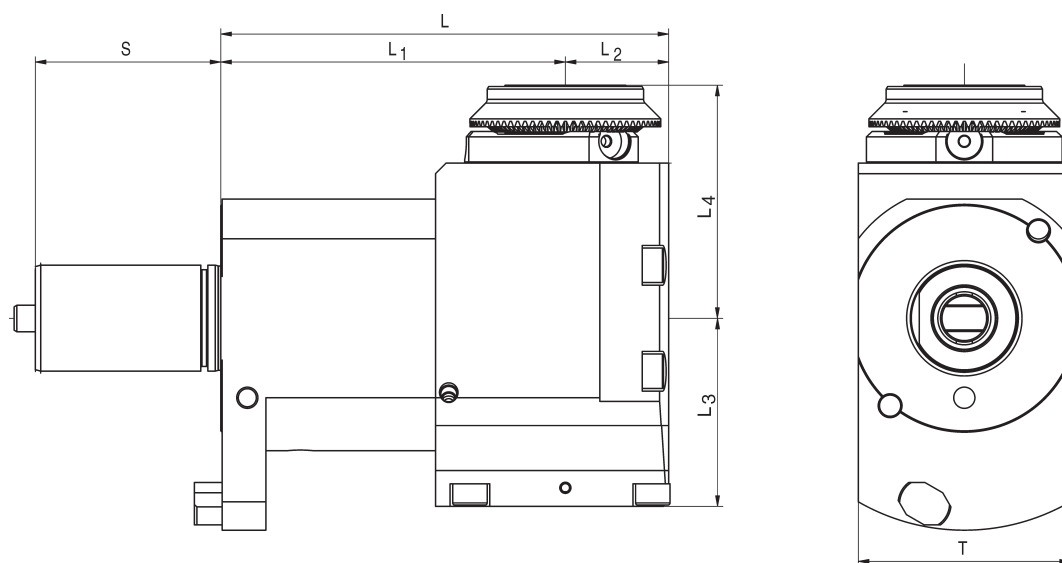
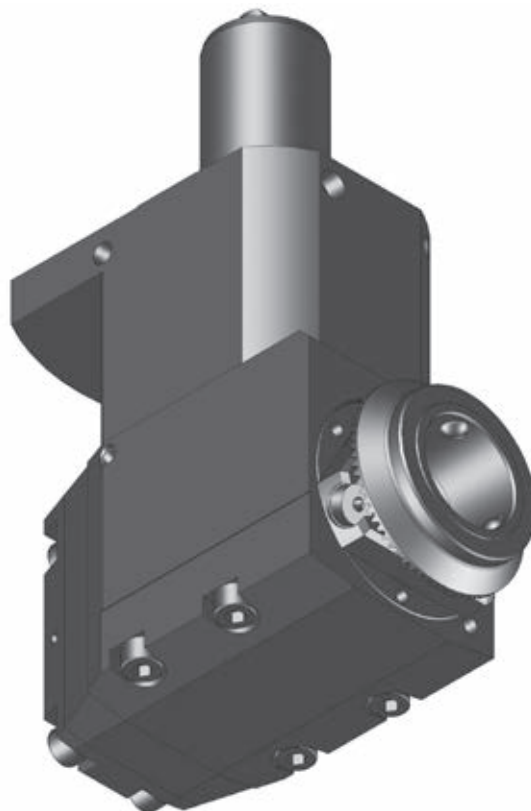


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124619	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	169	130	39	69,0	70,0	70	85	↺ ↻
124864	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	173	130	43	71,0	70,0	70	80	↺ ↻
124690	ER 25	0,5-16	25 Nm	6.500 / 13.000	i = 1:2	external	164	130	34	40,0	78,0	70	80	↺ ↻
175761	mi 40	-	25 Nm	6.500 / 13.000	i = 1:2	internal	169	130	39	72,5	95,5	70	80	↺ ↻
124623	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	external	173	130	43	71,0	88,0	70	80	↺ ↻
124866	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	173	130	43	71,0	88,0	70	80	↺ ↻
169446	HF 20	-	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	71,0	83,5	70	80	↺ ↻
124916	ER 32*	1,0-20	25 Nm	6.500 / 13.000	i = 1:2	internal	169	130	39	72,5	91,0	70	80	↺ ↻
169825	C 4	-	60 Nm	6.500 / 6.500	i = 1:1	internal	168	126	42	71,0	75,0	70	85	↺ ↻



# Angle Unit for Sub-Spindle

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>HYPER QUADREX MSY 200</b>	
<b>HQ</b> 200 - 12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm

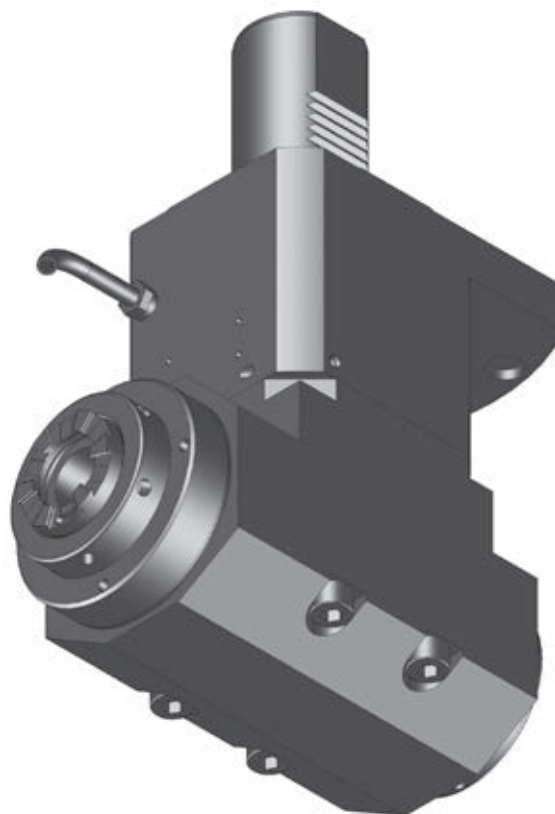


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
174706	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	169	130	39	69	72	70	80	↺ ↻
174707	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	69	72	70	80	↻ ↺
174708	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	69	87	70	80	↻ ↺

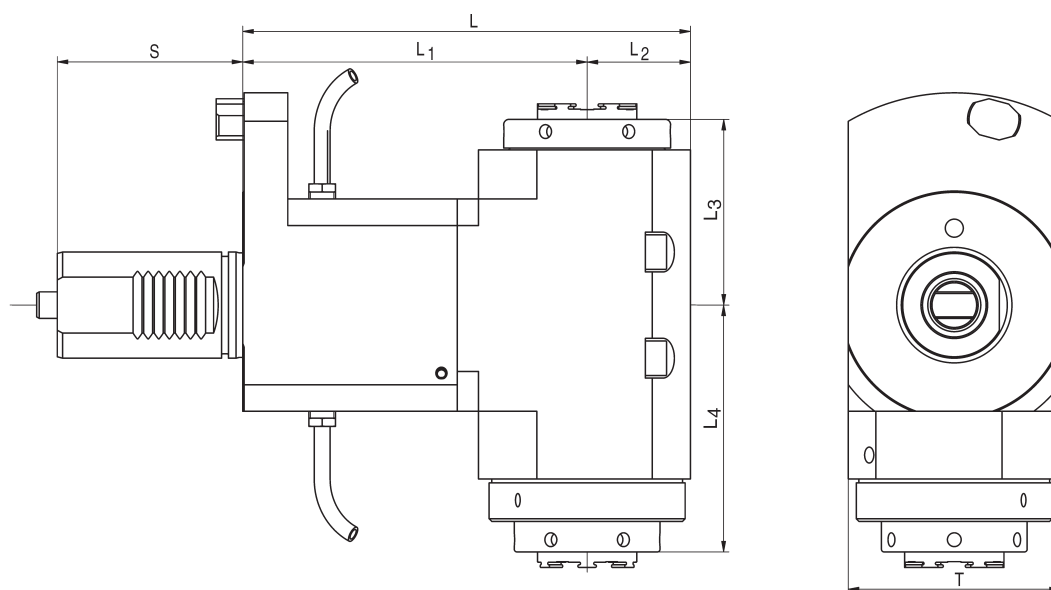
\* With clamping nuts with sealing, seals see page 530

# Angle Unit, 2-Axis

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>HYPER QUADREX MSY 200</b>	
<b>HQ</b> 200 - 12x	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



 **Coolant pressure max. 30 bar**

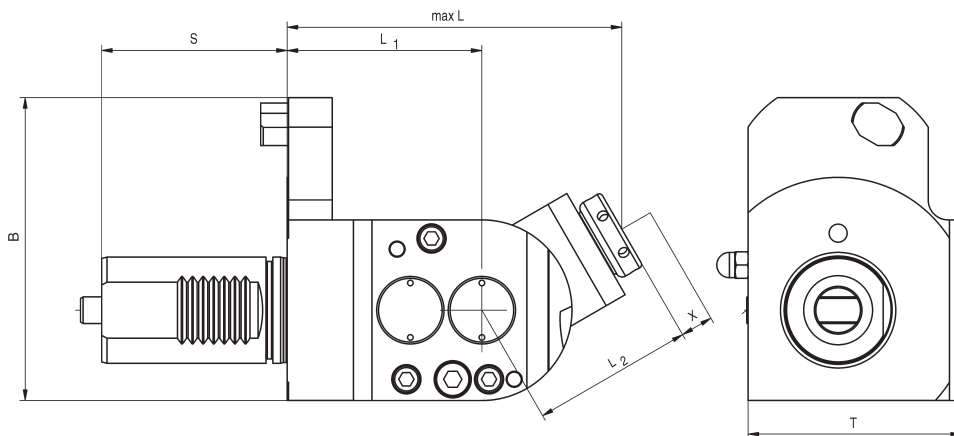
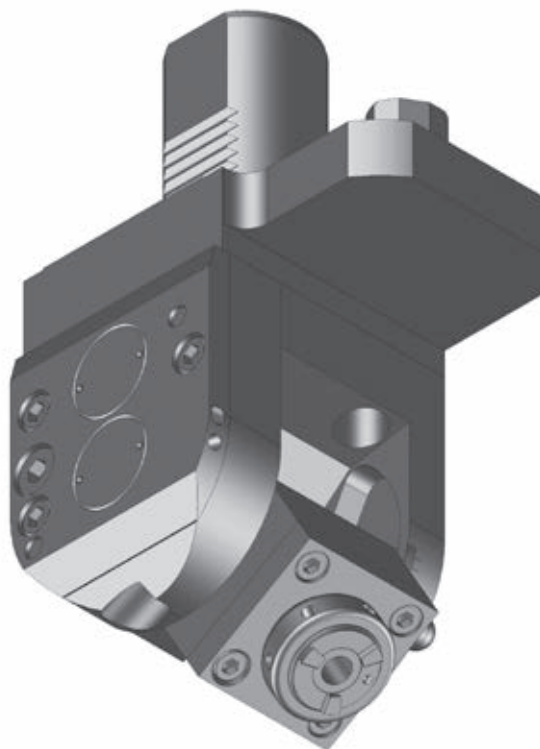


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm
164335	2x ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	169	130	39	70	70	70	80
171083	2x ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	169	130	39	70	93	70	80

# Angle Unit, Adjustable 0-100°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 620/6200</b> <b>HYPER QUADREX MSY 200</b>	
<b>MP</b> 620 - 12x 6200 - 12x	<b>HQ</b> 200 - 12x
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10 mm



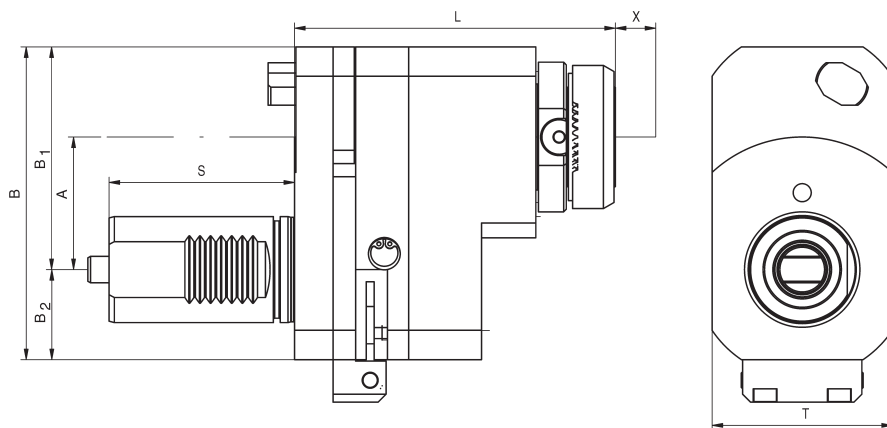
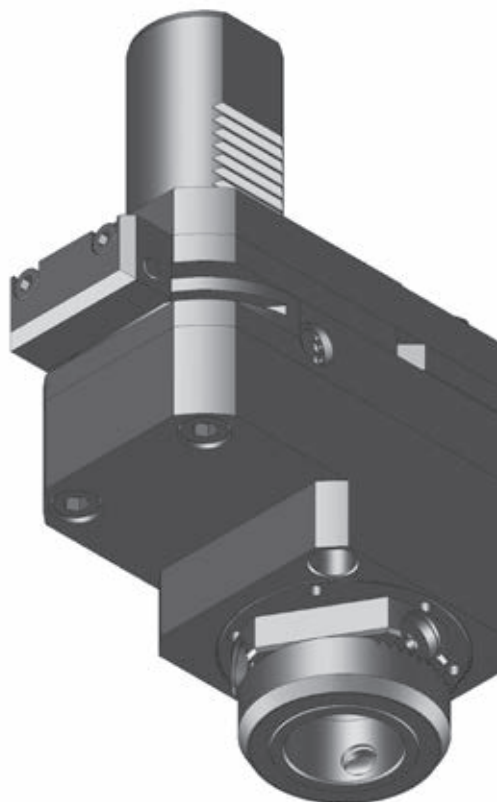
13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
125025	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	45,5	134,5	73,5	61	114	70	80,5	↻ ↻
125053	ER 16	0,5-10	6 Nm	3.750 / 15.000	i = 1:4	external	45,5	134,5	73,5	61	114	70	80,5	↻ ↻

# Y-Unit, Adjustable $\pm 90^\circ$

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

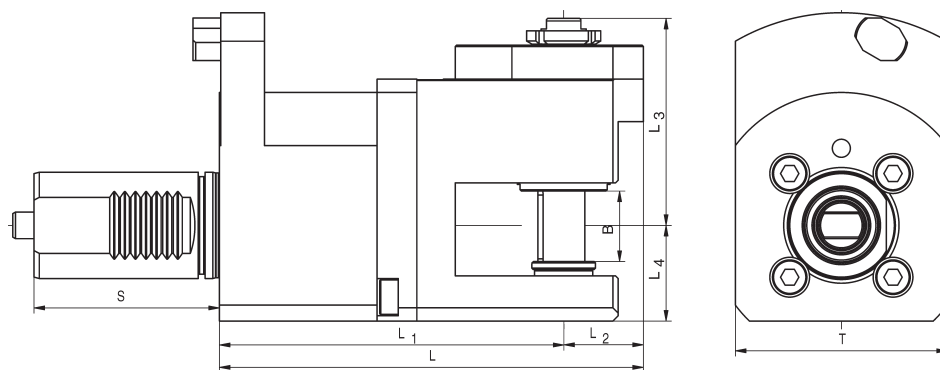
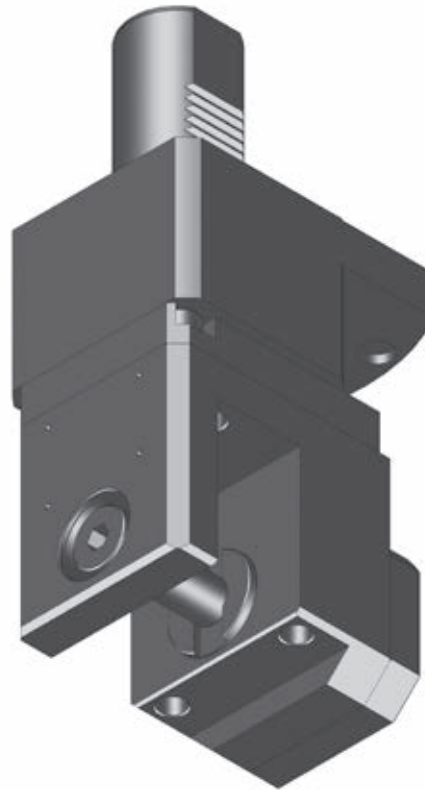
for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 620/6200</b> <b>HYPER QUADREX MSY 200</b>	
<b>MP</b> 620 - 12x 6200 - 12x	<b>HQ</b> 200 - 12x
Dimensions	
Turret type Type	Star-type Turret $\pm 90^\circ$ continuous adjustable
Shank Drive SW	VDI 40 Tang 10 mm
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	S mm	T mm	Rotating direction
124116	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	80	100	50	118	70	68	
169231	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	external	-	121	50	118	70	68	

# Saw Blade Holder

for Manufacturer	
<b>Mazak</b>	
for Machine type	
<b>MULTIPLEX 620/6200</b> <b>HYPER QUADREX MSY 200</b>	
<b>MP</b> 620 - 12x 6200 - 12x	<b>HQ</b> 200 - 12x
Dimensions	
Turret type Shank Drive SW	Star-type Turret VDI 40 Tang 10 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
125103*	22	20 Nm	6.500 / 2.450	i = 2,66:1	external	160	130	30	77,5	36	25	70	80
101820*	22	40 Nm	6.500 / 2.450	i = 2,66:1	external	170	140	30	87,5	36	25	70	80

\* Saw blade diameter max. = 80 mm

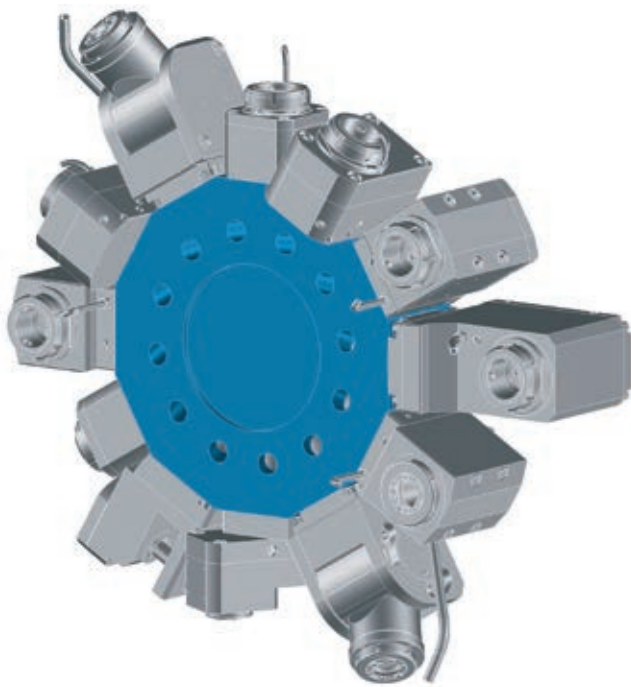
# Mazak MULTIPLEX 630 / 6300

## Data

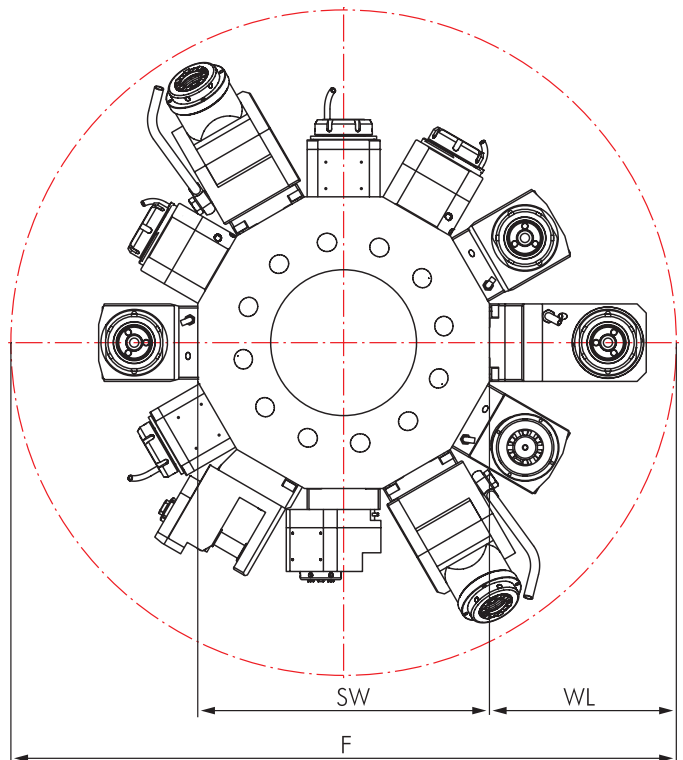
Machine type Series	Turret Stations
<b>MP 630</b>	12
<b>MP 6300/6300 Y</b>	12



## Star-type Turret VDI 50





## Interference Circles



Machine type Series	F	SW	WL
<b>Multiplex 630 / 6300</b>	840	380	230

## Live Tools

	Page		Page
<b>Straight Unit, Offset Type</b>		326	
<b>Angle Unit</b>			327

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**MULTIPLEX 630 / 6300**

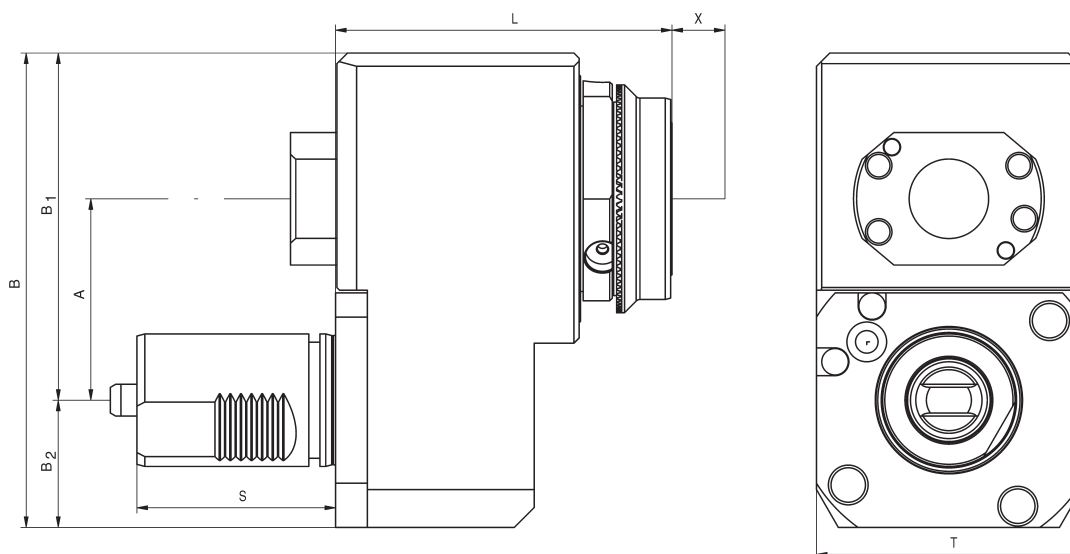
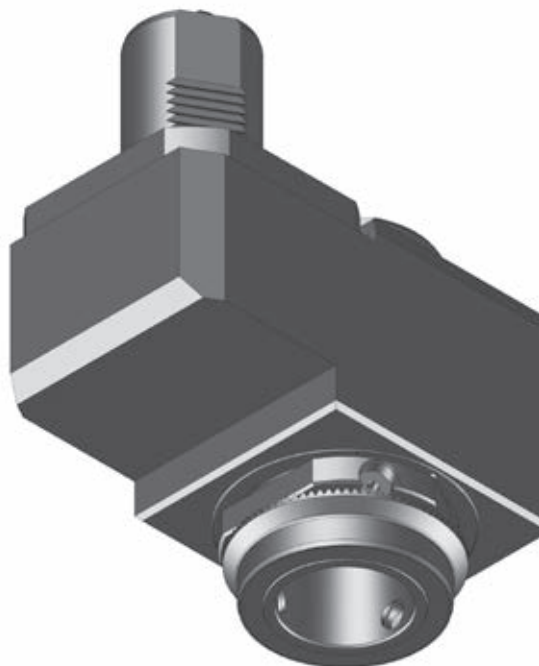
**MP**  
630 - 12x  
6300 - 12x

Dimensions

Turret type            Star-type Turret  
Shank                    VDI 50  
Drive                     Tang  
SW                        12 mm

Modular Interfaces

**mimaticMi**  
**mimatic capto**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
131556	ER 40*	2,0-26	100 Nm	6.500 / 6.500	i = 1:1	internal	107,5	122,5	76	179	131	48	75	100	↺ ↻
100245	mi 63	-	100 Nm	6.500 / 6.500	i = 1:1	internal	-	126,0	76	179	131	48	75	100	↺ ↻
102793	SK/CAT 40	-	100 Nm	6.500 / 6.500	i = 1:1	external	111,5	108,5	76	179	131	48	75	100	↺ ↻
173569	C 5	-	100 Nm	6.500 / 6.500	i = 1:1	internal	120,0	110,0	76	189	141	48	75	100	↺ ↻
<b>Without offset</b>															
173579	C5	-	100 Nm	6.500 / 6.500	i = 1:1	external	120,0	110,0	-	148	100	48	75	100	↺ ↻



# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TriaCut » PolyREAM

for Manufacturer

**Mazak**

for Machine type

**MULTIPLEX 630 / 6300**

**MP**  
630 - 12x  
6300 - 12x

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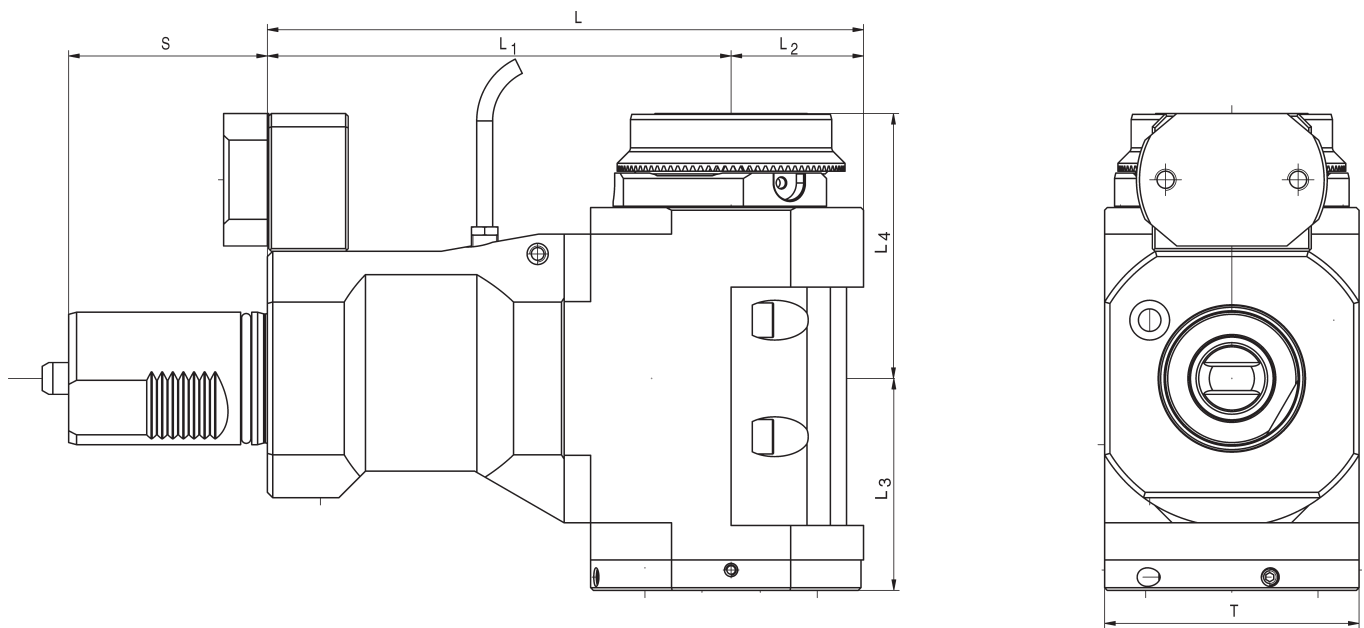
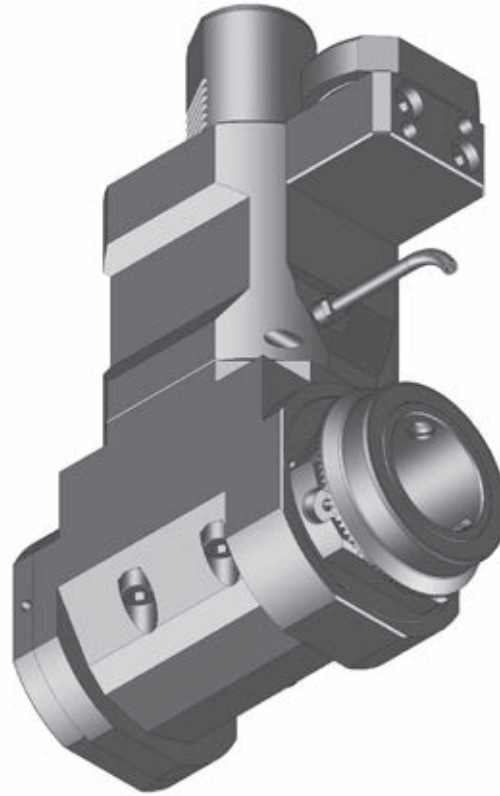
Dimensions

Turret type            Star-type Turret  
Shank                    VDI 50  
Drive                     Tang  
SW                        12 mm

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Modular Interfaces

**mimaticMi**  
**mimatic capto**



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
131597	ER 40*	2,0-26	80 Nm	5.200 / 5.200	i = 1:1	internal	215	175	40	75,5	97	75	96	↺ ↻
101513	mi 63	-	80 Nm	6.500 / 6.500	i = 1:1	internal	224	175	49	73,5	97	75	98	↺ ↻
124626	SK/CAT 40	-	80 Nm	6.500 / 6.500	i = 1:1	external	225	175	50	80,0	100	75	96	↺ ↻
174863	SK/CAT 40	-	80 Nm	6.500 / 6.500	i = 1:1	internal	225	175	50	80,0	100	75	96	↺ ↻
131600	C 5	-	100 Nm	6.500 / 6.500	i = 1:1	internal	230	175	55	85,0	65	75	130	↺ ↻
131607	C 5	-	50 Nm	8.000 / 8.000	i = 1:2	internal	230	175	55	85,0	65	75	130	↺ ↻

\* With clamping nuts with sealing, seals see page 530

# Mazak

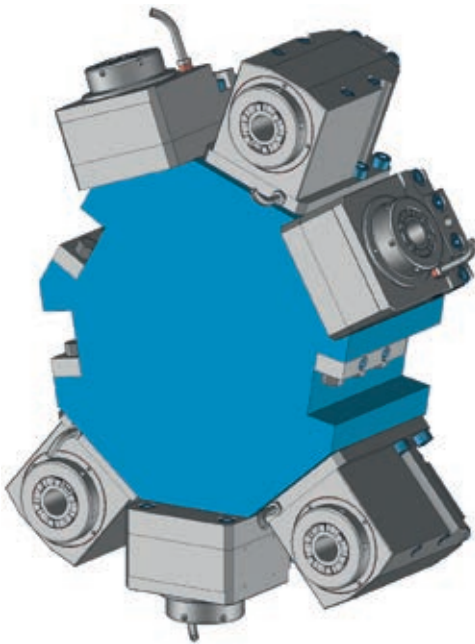
## INTEGREX IV ST + MULTIPLEX 8200

### Data

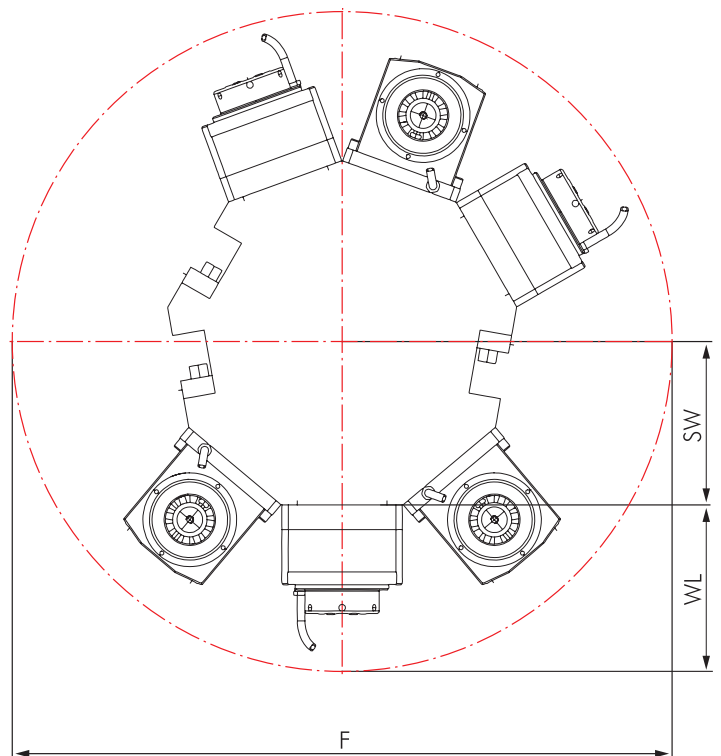
Machine type Series	Turret Stations
<b>Integrex 200/300/400 IV ST</b>	9
<b>Multiplex 8200</b> (only 3th turret)	9



### Star-type Turret





### Interference Circles



Machine type Series	F	SW	WL
<b>Int. 200/300/400 IV ST</b>	840	380	230
<b>Multiplex 8200</b>	502,5	260	120

**Live Tools**

	Page		Page
<b>Straight Unit, Offset Type</b>	330		
		<b>Angle Unit</b>	331
			

**Options and Accessories**

<b>Static Toolholders for MAZAK</b>		Static Toolholders Accessories	499-509 510-511
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



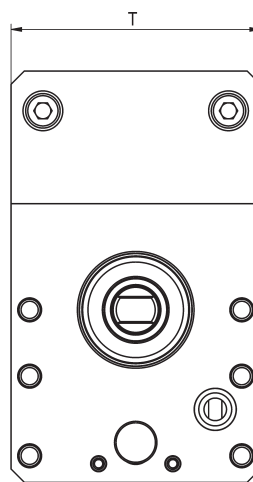
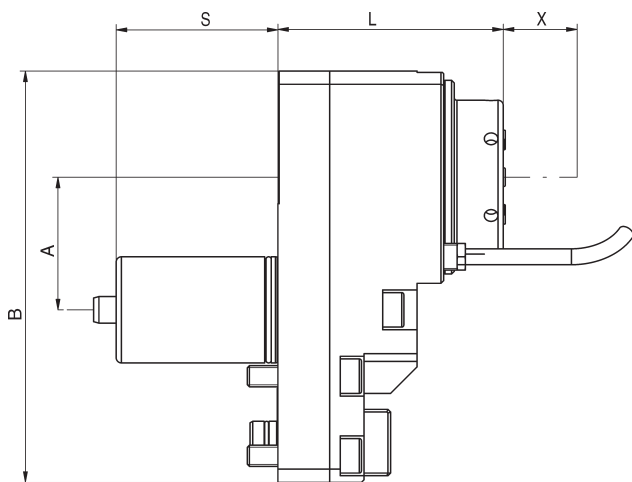
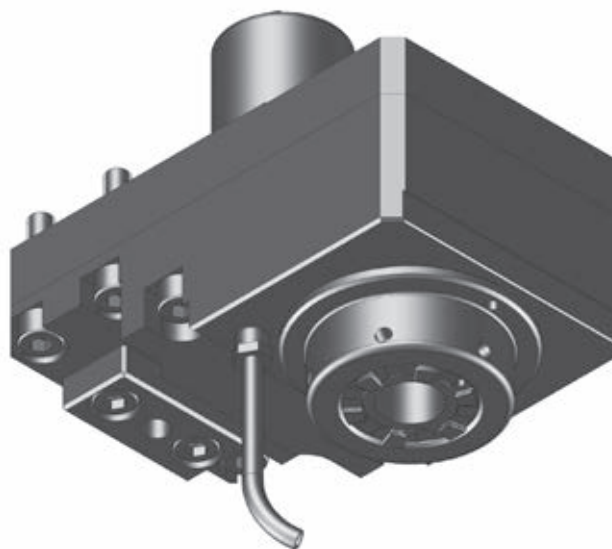
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine Type	
<b>INTEGREX 200/300/400 IV ST MULTIPLEX 8200</b> (only 3th turret)	
<b>I</b>	<b>MP</b>
200 IV ST	8200
300 IV ST	
400 IV ST	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 40 mm
Drive	Tang
SW	10 mm

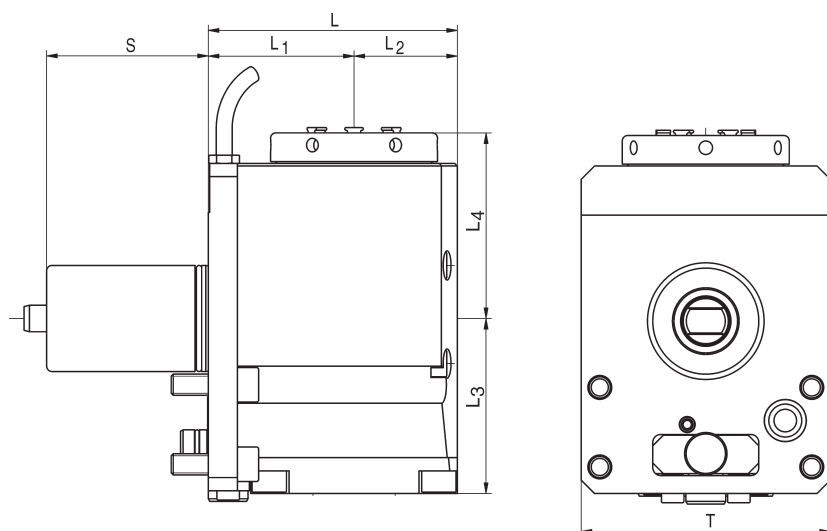
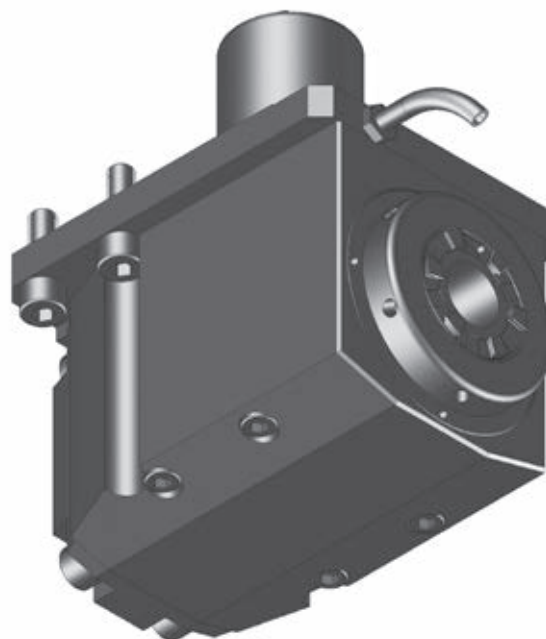


Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	A mm	B mm	S mm	T mm	Rotating direction
100628	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	36	85	50	155	61	94	↻ ↺

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>Mazak</b>	
for Machine Type	
<b>INTEGREX 200/300/400 IV ST MULTIPLEX 8200</b> (only 3th turret)	
<b>I</b>	<b>MP</b>
200 IV ST	8200
300 IV ST	
400 IV ST	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 40 mm
Drive	Tang
SW	10 mm



13

Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
174606	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	94	55	39	66	70	61	94	↺ ↻

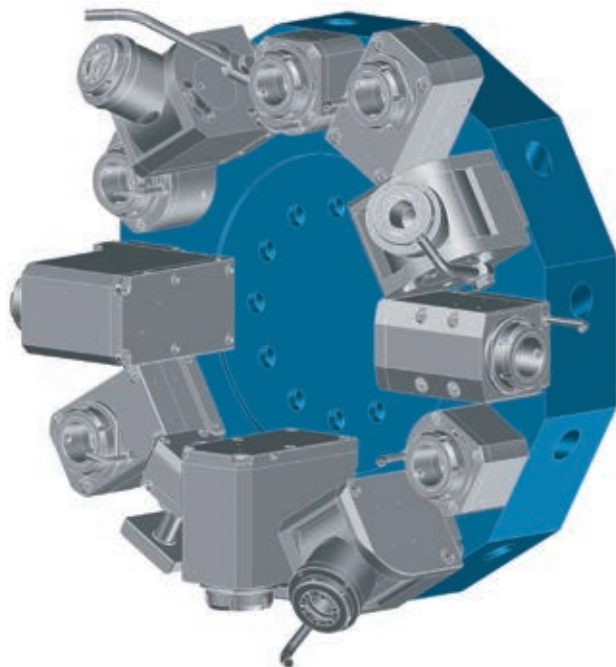
**LOKUMA LB 200 - M + ECO - M**

**Data**

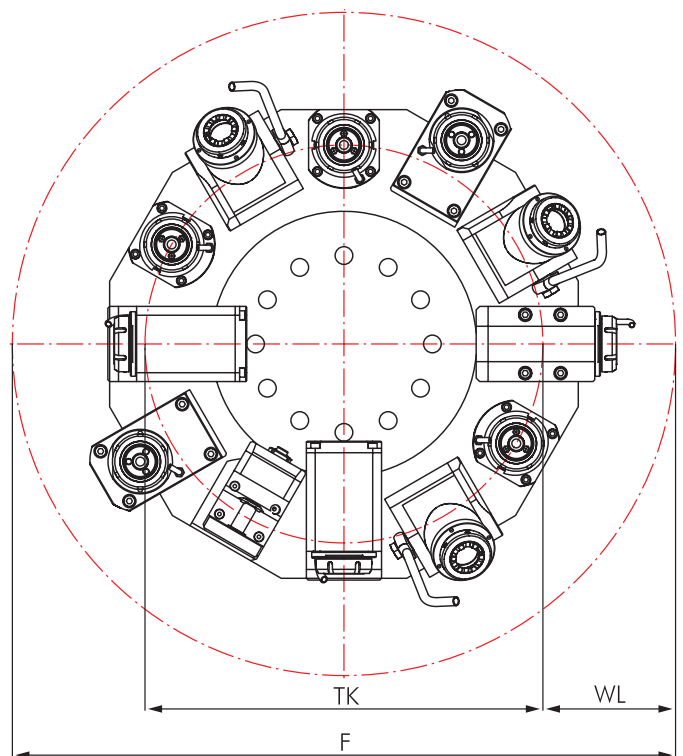
Machine type Series		Turret Stations
<b>LB 200</b>	<b>M</b>	12
<b>ECO ES-L8II</b>	<b>M</b>	12
<b>ECO ES-L6II</b>	<b>M</b>	12
<b>Genos L200</b>	<b>M</b>	12



**Disc-type Turret VDI 30**



**Interference Circles**



Machine type Series	F	TK	WL
<b>LB 200+ECO</b>	590	310	115
<b>ECO ES-L6II</b>	1)	1)	1)
<b>Genos L200</b>	1)	1)	1)

1) The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.

## Live Tools

	Page		Page
<b>Straight Unit</b>	334	<b>Angle Unit</b>	336
<b>Straight Unit, Offset Type</b>	335	<b>Angle Unit, Offset Type</b>	337
		<b>Angle Unit, adjustable 0-100°</b>	338

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



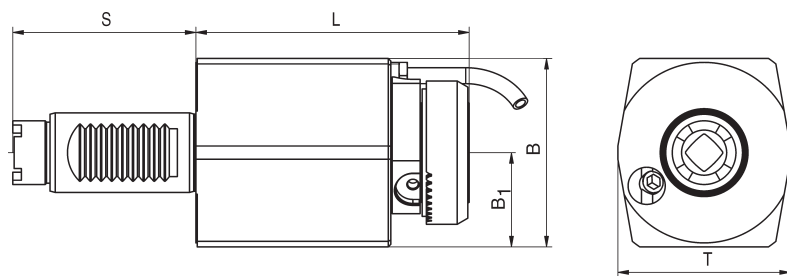
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

## Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 200-M, ECO ES-L6/L8II-M, Genos L200-M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	



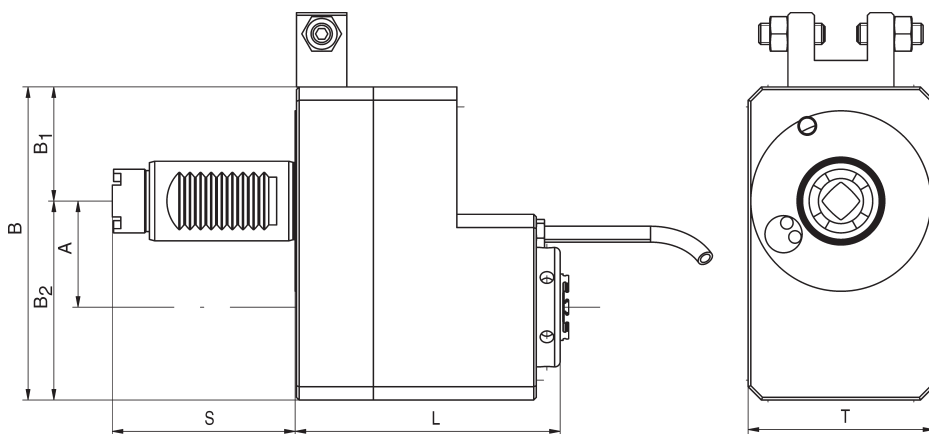
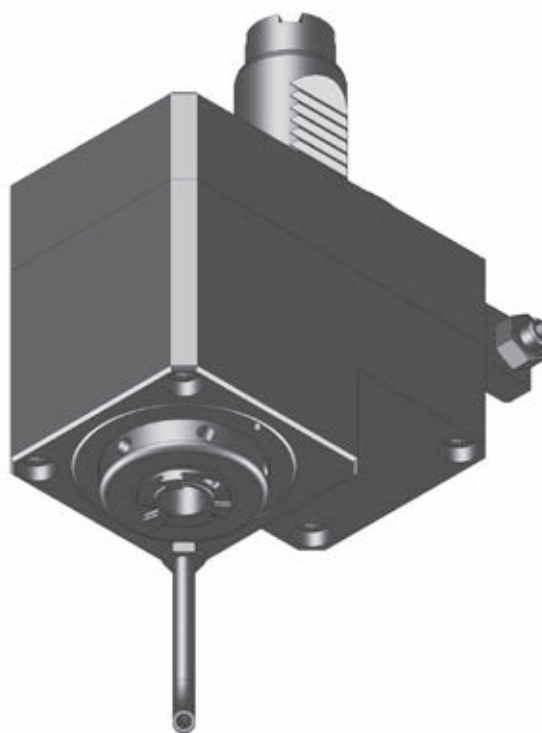
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
133715	ER 25	0,5-16	40 Nm	6.500 / 6.500	i = 1:1	external	81	70	35,0	69	70	↺ ↻
133710	ER 25*	0,5-16	40 Nm	6.500 / 6.500	i = 1:1	internal	81	70	35,0	69	70	↺ ↻
133734	mi 40	-	40 Nm	6.500 / 6.500	i = 1:1	internal	92	71	35,5	69	65	↺ ↻



# Straight Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 200-M, ECO ES-L6/L8II-M, Genos L200-M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	single level
Graduation	30 / 60°



13

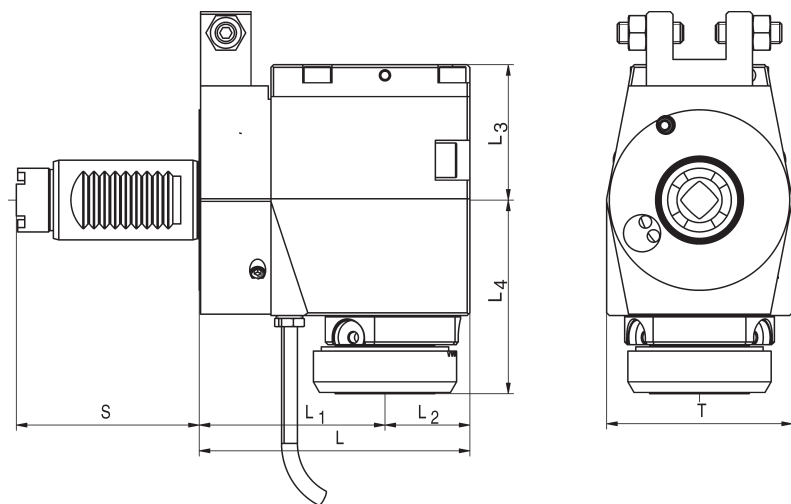
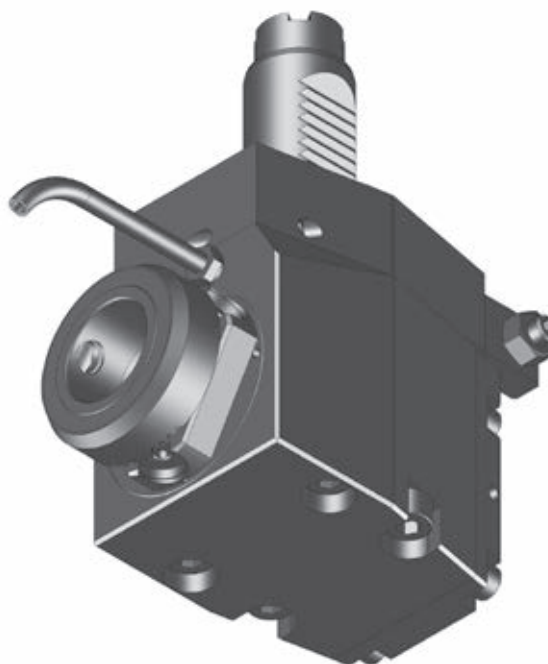
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
176305	ER 25	0,5-16	10 Nm	6.500 / 13.000	i = 1:2	external	100	40	118	75	43	69	70	↺ ↻
176304	ER 25*	0,5-16	10 Nm	6.500 / 13.000	i = 1:2	internal	100	40	118	75	43	69	70	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
for Machine type	
<b>LB 200-M, ECO ES-L6/L8II-M, Genos L200-M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	single level
Graduation	30 / 60°
Modular Interfaces	

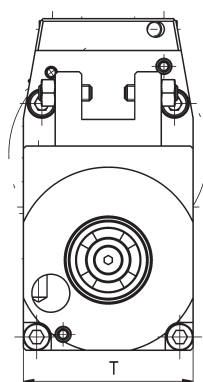
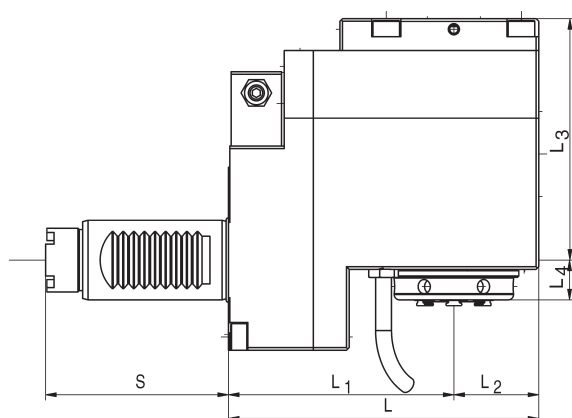
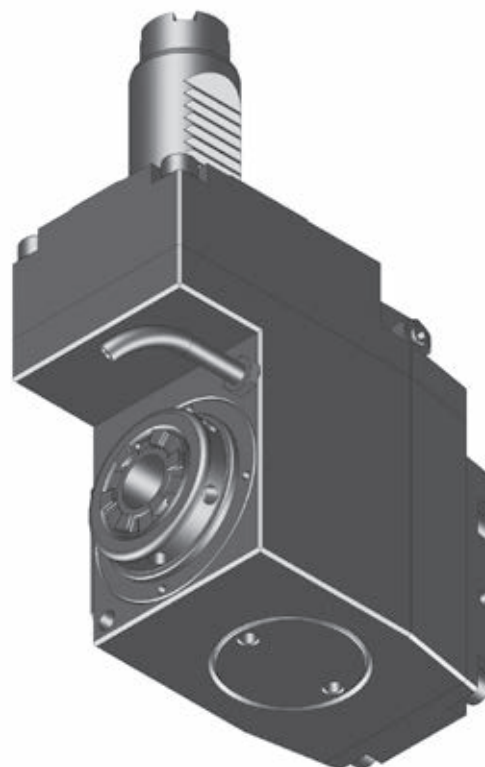


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103496	ER 25	0,5-16	30 Nm	6.500 / 6.500	i = 1:1	external	104	70	34	60,5	58	69	76	
103520	ER 25*	0,5-16	30 Nm	6.500 / 6.500	i = 1:1	internal	104	70	34	60,5	58	69	76	
103537	mi 40	-	30 Nm	6.500 / 6.500	i = 1:1	internal	102	70	32	51,0	73	69	70	
176325	ER 20	0,5-13	20 Nm	6.500 / 12.000	i = 1:2	external	105	70	35	62,0	62	69	70	
176324	ER 20*	0,5-13	20 Nm	6.500 / 12.000	i = 1:2	internal	105	70	35	62,0	62	69	70	

# Angle Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 200-M, ECO ES-L6/L8II-M, Genos L200-M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	single level
Graduation	30 / 60°



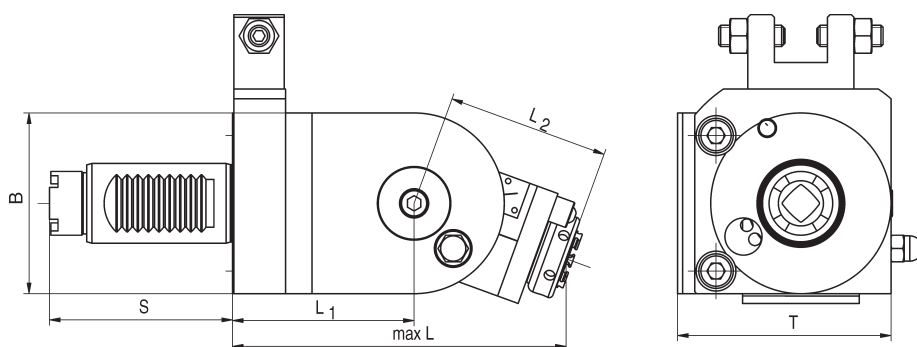
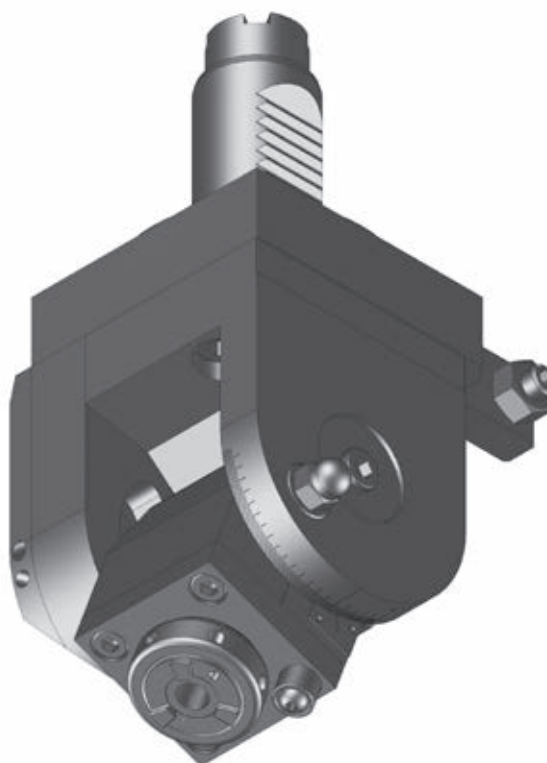
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
176270	ER 25	0,5-16	30 Nm	6.500 / 6.500	i = 1:1	external	117	85	32	91	15	69	64	↺ ↻
176271	ER 25*	0,5-16	30 Nm	6.500 / 6.500	i = 1:1	internal	117	85	32	91	15	69	64	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Adjustable 0-100°

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 200-M, ECO ES-L6/L8II-M, Genos L200-M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	single level
Graduation	30 / 60°



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
176291	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	131	68,5	62	77	69	81	↺ ↻
176293	ER 16*	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	internal	131	68,5	62	77	69	81	↻ ↺

# AGMILL

The mimatic Concept of Sustainability for the Milling Operation

**BLUECOMPETENCE**

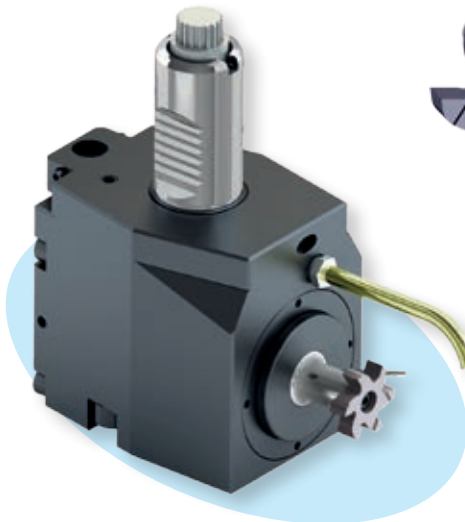
Alliance Member

Partner of the Engineering Industry Sustainability Initiative

## AGMILL =

Live Tools + Polygon Interface + PolyMILL Insert

### AGMILL



### PolyMILL



## Advantages

### Fewer Interfaces

- lower tolerances
- better true running
- longer operating life
- shorter form of structure

### Rapid Changing of the CT-CI

- loosen a screw
- planar arrangement
- no pre-adjustment necessary
- self-centring

## The mimatic Modular Set

- ✓ 4,000 Live Tools
- ✓ 2,000 Angle Heads
- ✓ 2,500 PolyMILL Inserts

## Modular Sets Available to mimatic Customers

4,000 completed live tools for turning machines, 250 of which are from the mimatic main catalogue

2,000 completed angle heads for machining centers, 108 of which are from the mimatic main catalogue

4 different sizes of polygonal PolyMILL interface

Approx. 2,500 completed PolyMILL CI inserts for cutting threads and grooves, fronts or contours. 200 of these are from the mimatic main catalogue from stock.

# LOKUMA

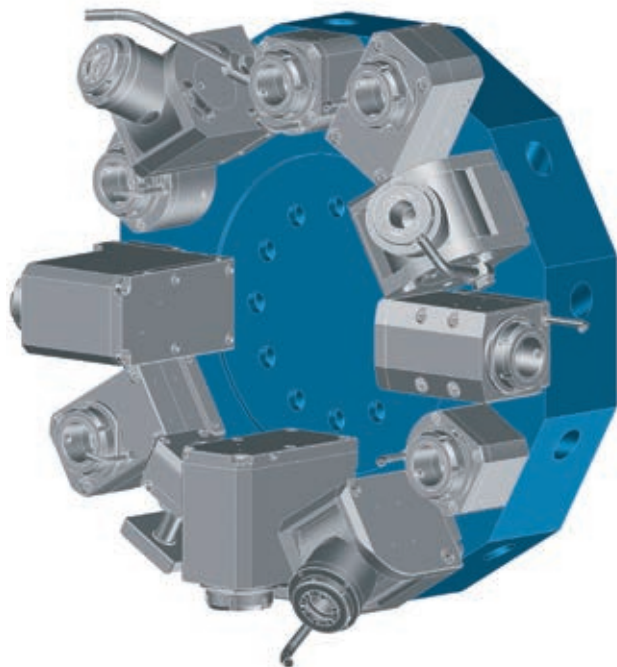
## LB 300 - M/MY / LU 300 - M/MY

### Data

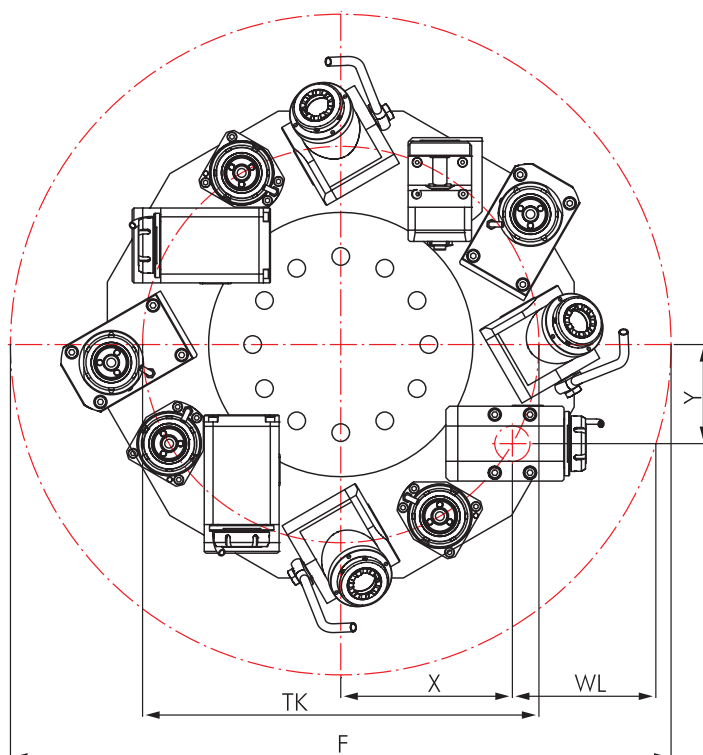
Machine type Series	Turret Stations
<b>LB 300</b> <b>M / MY</b>	12
<b>LU 300</b> <b>M / MY</b>	12
<b>ES-L 10</b> <b>M</b>	
<b>Captain L 370</b>	
<b>Genos L 300</b> <b>M</b>	



### Disc-type Turret VDI 40



### Interference Circles



Machine type Series	F	TK	X	Y	WL
<b>LB/LU 300 M</b>	690	386	185	55	155
<b>LB/LU 300 MY</b>	700	448	175	140	145
<b>ES-L 10 M</b>	1)	1)	1)	1)	1)
<b>Captain L 370</b>	1)	1)	1)	1)	1)
<b>Genos L 300 M</b>	1)	1)	1)	1)	1)

1) The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.



**LB 300 - M/MY / LU 300 - M/MY**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

## Live Tools

	Page		Page
<b>Straight Unit</b>	342	<b>Angle Unit</b>	344
<b>Straight Unit, Offset Type</b>	343	<b>Angle Unit, adjustable 0-100°</b>	345

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



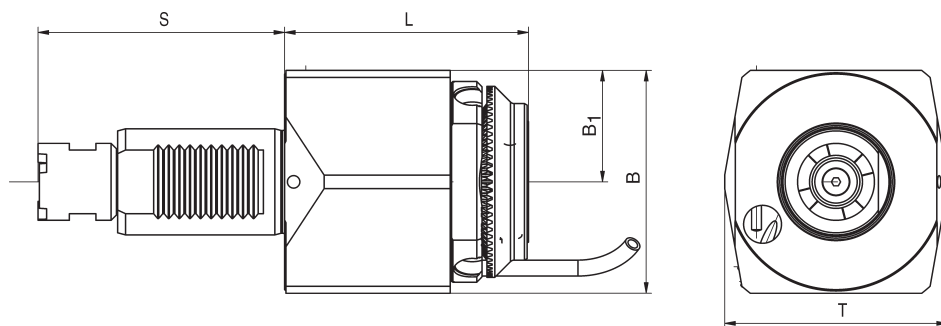
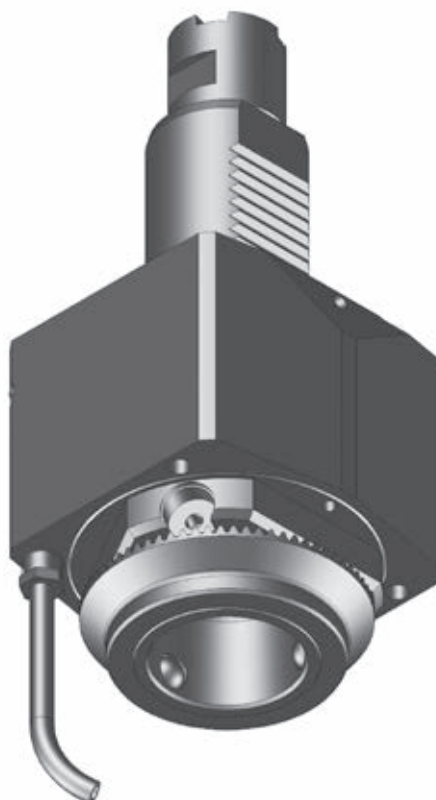
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

## Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB/LU 300 - M/MY, ES-L 10 M Captain L 370, Genos L 300 M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	



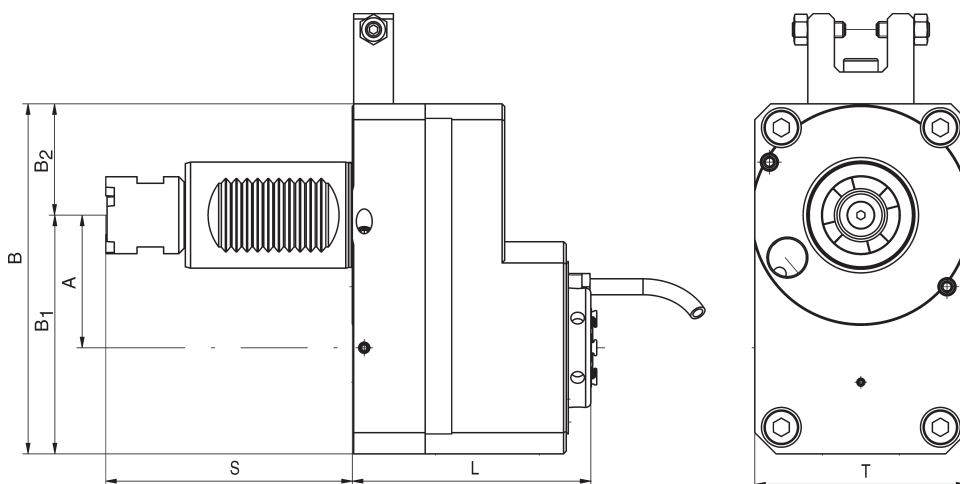
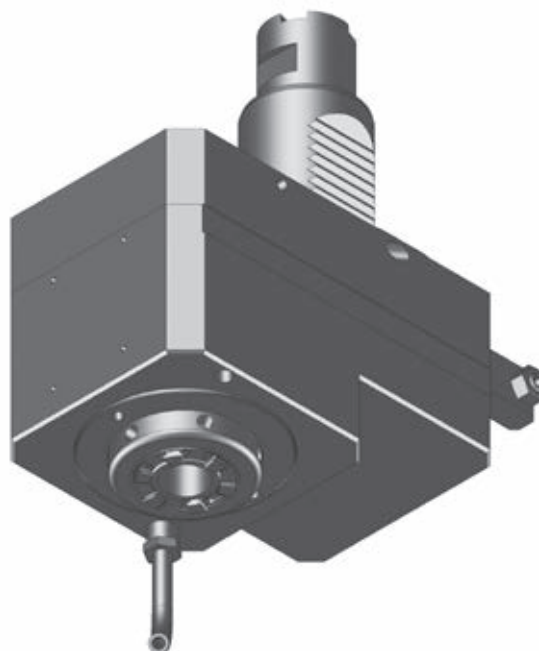
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
103441	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	75,5	87	38	93	75	↺ ↻
133711	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	75,5	87	38	93	75	↺ ↻
133712	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92,0	84	42	93	84	↺ ↻



# Straight Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB/LU 300 - M/MY, ES-L 10 M Captain L 370, Genos L 300 M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	single level
Graduation	30 / 60°



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
176332	ER 25	0,5-16	20 Nm	6.500 / 13.000	i = 1:2	external	90	50	132	90	42	93	80	↺ ↻
176331	ER 25	0,5-16	20 Nm	6.500 / 13.000	i = 1:2	internal	90	50	132	90	42	93	80	↻ ↺

# Angle Unit

for Manufacturer

**LOKUMA**

for Machine type

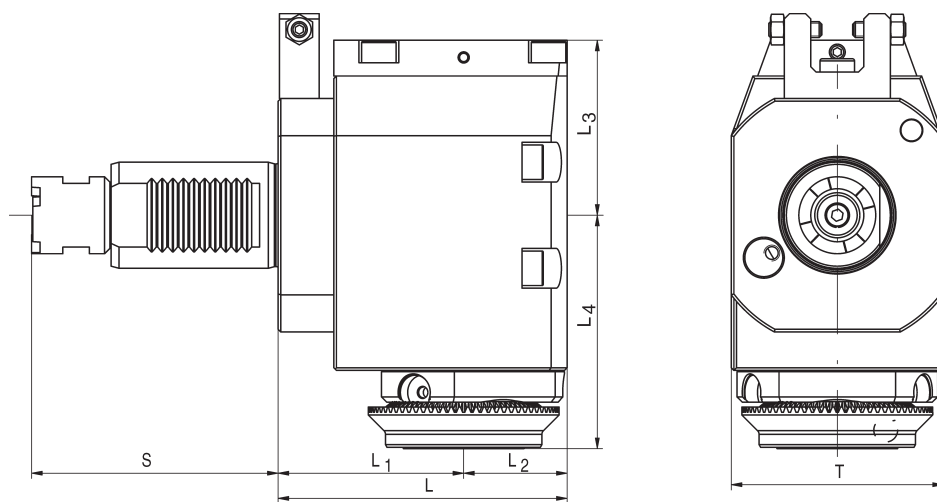
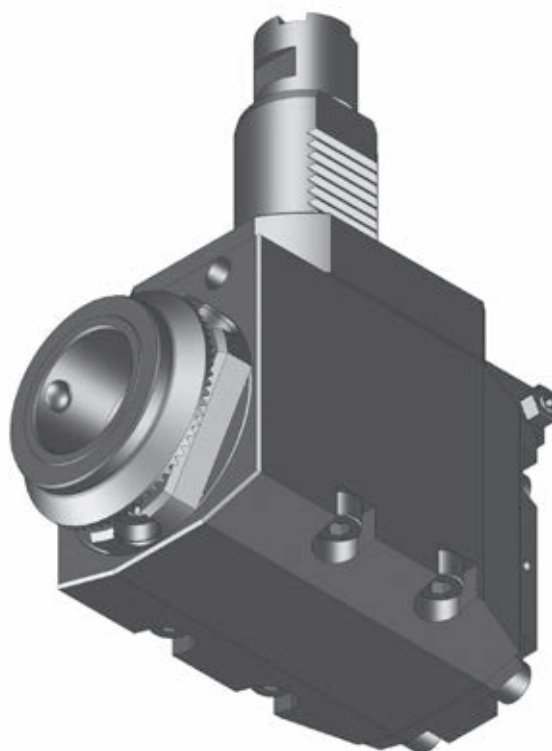
**LB/LU 300 - M/MY, ES-L 10 M  
Captain L 370, Genos L 300 M**

Dimensions

Revolver type	Disc-type Turret
Shank	VDI 40
Drive	single level
Graduation	30 / 60°

Modular Interfaces

**mimaticMi**

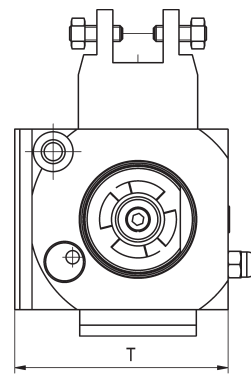
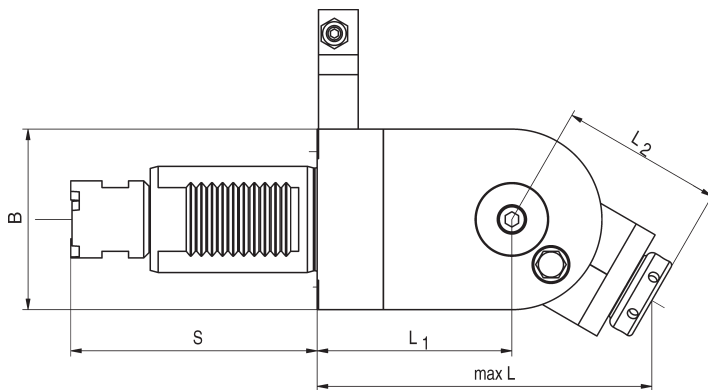
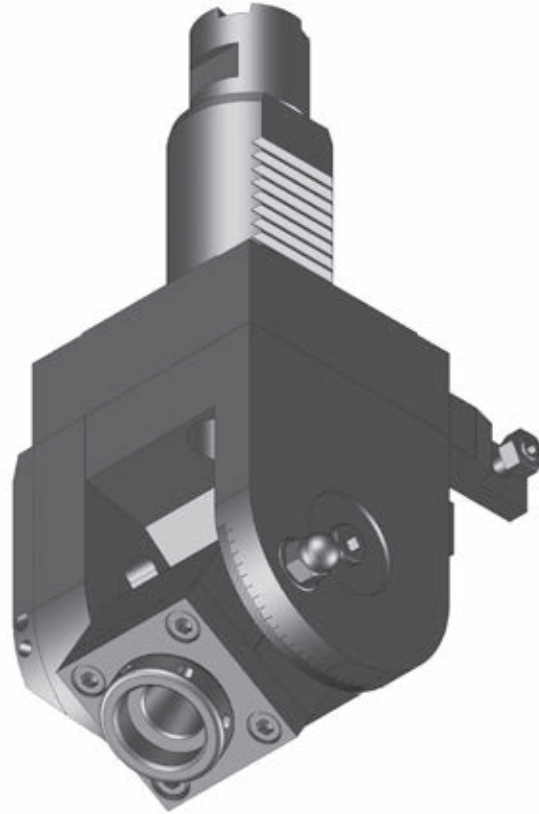


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103497	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	109	70	39	66	70	93	80	↻ ↻
133716	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	70	93	80	↻ ↻
133705	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	88	93	80	↻ ↻

# Angle Unit, Adjustable 0-100°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Turret Manufacturer	
<b>LOKUMA</b>	
with Drive	
<b>LB/LU 300 - M/MY, ES-L 10 M Captain L 370, Genos L 300 M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	30 / 60°



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
101727	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	134,5	73,5	61	68	93	90	↻ ↻

**LOKUMA**

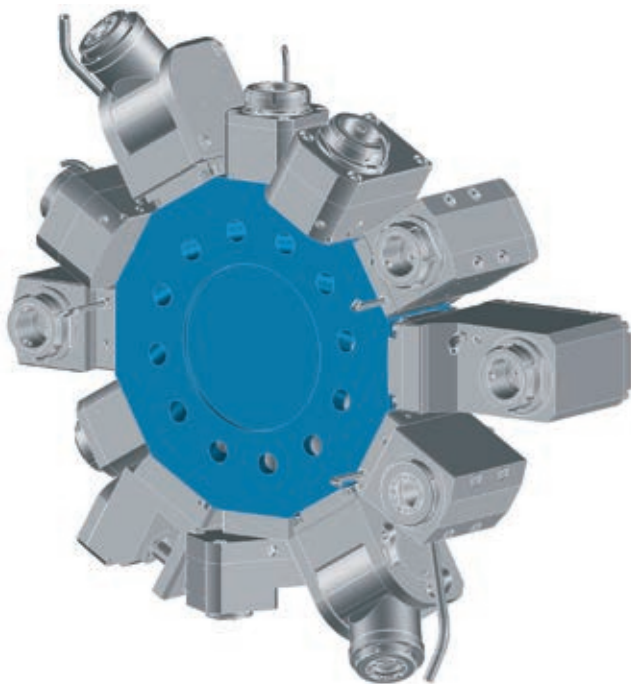
**LB 300 - MW/MYW + LT 300 - M/MY**

**Data**

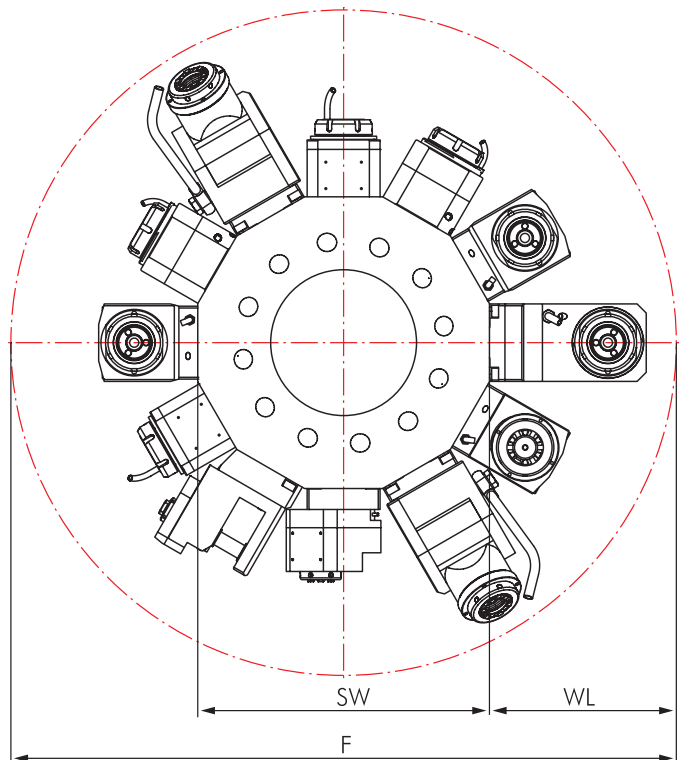
Machine type Series		Turret Stations
<b>LB 300</b>	<b>MW / MYW</b>	12
<b>LT 300</b>	<b>M / MY</b>	12



**Star-type Turret VDI 40**



**Interference Circles**





Machine type Series	F	SW	WL
<b>LB 300 MW/MYW</b>	610	340	135
<b>LT 300 M/MY</b>	650	380	135



**LB 300 - MW/MYW + LT 300 - M/MY**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

**Live Tools**

	Page		Page
<b>Straight Unit</b>		348	
<b>Angle Unit</b>			349-350

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



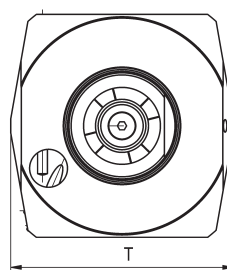
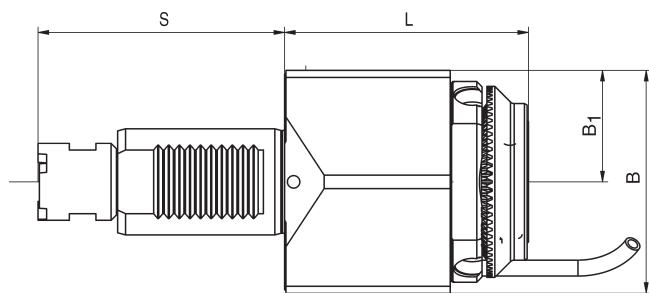
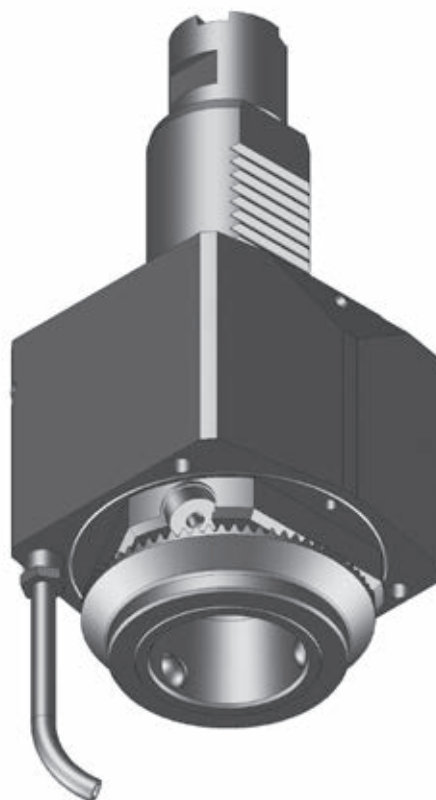
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

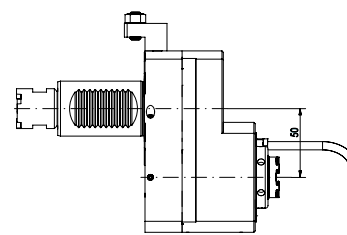
# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 300 - MW / MYW</b> <b>LT 300 - M / MY</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 40
Drive	Layer gear; single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	



With offset:

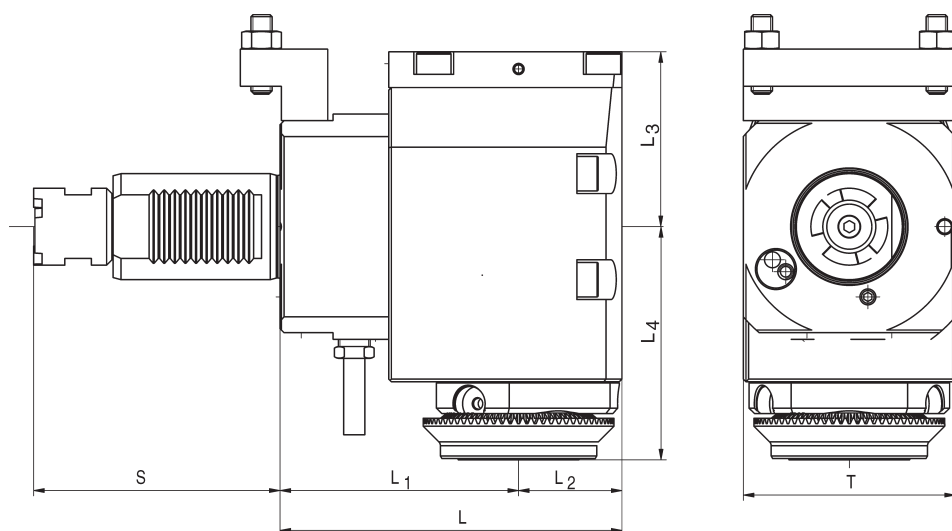
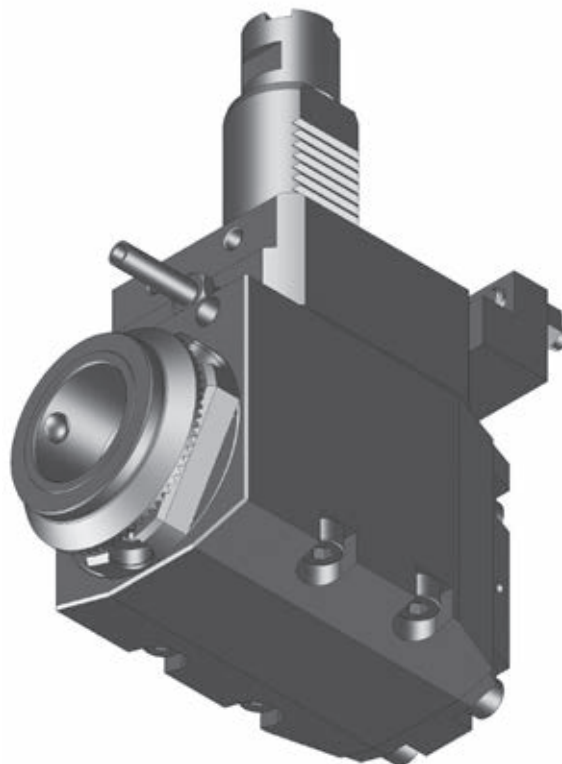


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
103441	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	75,5	87	38	93	75	↺ ↻
133711	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	75,5	87	38	93	75	↻ ↺
133712	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92,0	84	42	93	84	↻ ↺
With offset 50 mm:												
103644	ER 25*	0,5-16	20 Nm	6.500 / 13.000	i = 1:2	internal	90,0	132	42	93	80	↻ ↺

# Angle Unit, Left-hand Version for Main-Spindle

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 300 - MW / MYW</b> <b>LT 300 - M / MY</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 40
Drive	Layer gear; single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	



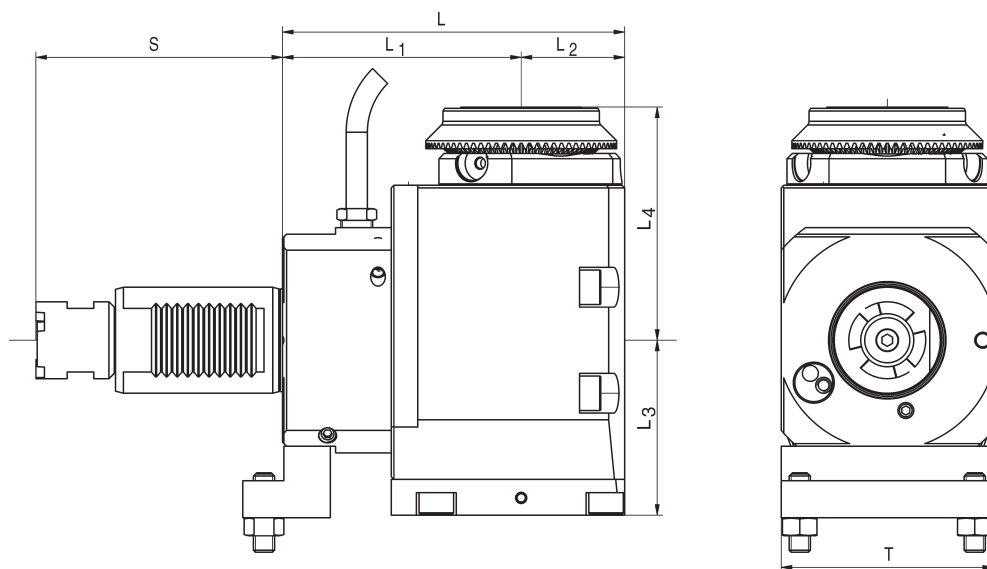
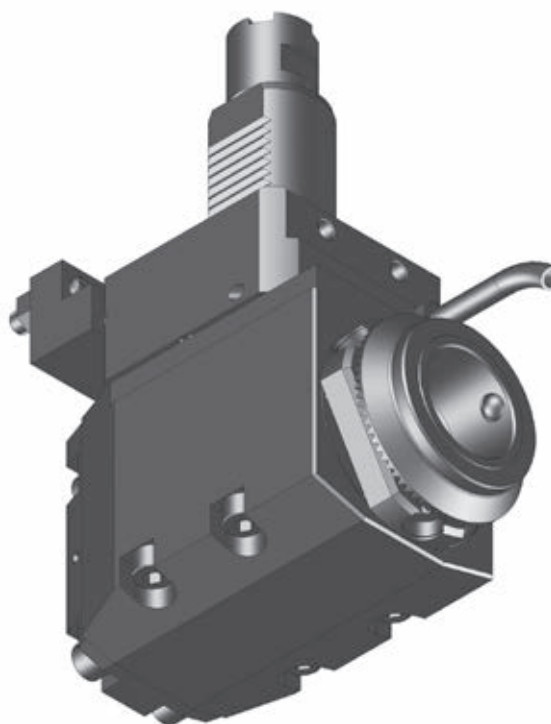
13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
133704	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	129	90	39	66,0	70	93	80	↺ ↻
103478	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	129	90	39	66,0	70	93	80	↻ ↺
103462	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	129	90	39	66,0	88	93	80	↻ ↺
133818	mi 40	-	25 Nm	6.500 / 13.000	i = 1:2		129	90	39	72,5	97	93	85	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Right-hand Version for Sub-Spindle

for Manufacturer	
for Machine type	
<b>LB 300 - MW / MYW</b> <b>LT 300 - M / MY</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 40
Drive	Layer gear; single level
Graduation	30 / 60°
Modular Interfaces	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103471	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	129	90	39	66	70	93	80	
124845	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	129	90	39	66	70	93	80	
103523	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	129	90	39	66	88	93	80	



**BLUECOMPETENCE**

Alliance Member

Partner of the Engineering Industry  
Sustainability Initiative



13

Picture shows the mimatic<sup>®</sup> mi interface, a very innovative modular quick change system with one hand operation by Mimatic Tool Systems. It helps you to reduce machine downtimes because all units can be preset outside the machine.

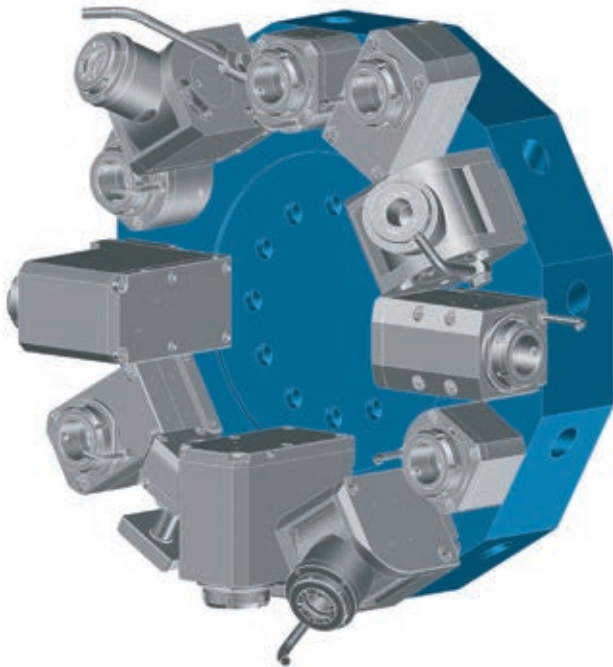
**LOKUMA LVT 300 - M**

**Data**

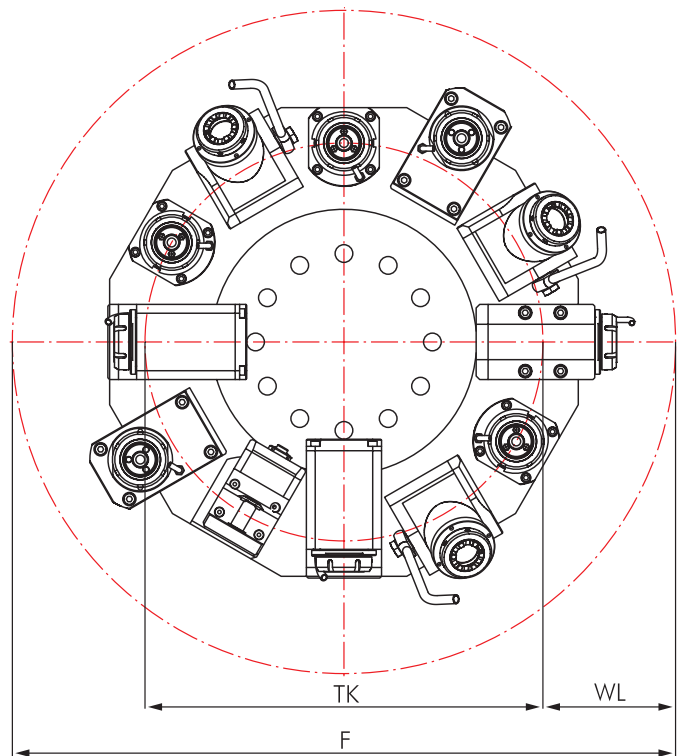
Machine type Series	Turret Stations
<b>LVT 300 M</b>	12



**Disc-type Turret VDI 40**





**Interference Circles**



Machine type Series	F	TK	WL
<b>LVT 300</b>	731	376	177

## Live Tools

	Page		Page
<b>Straight Unit</b>		354	
<b>Angle Unit</b>			355

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



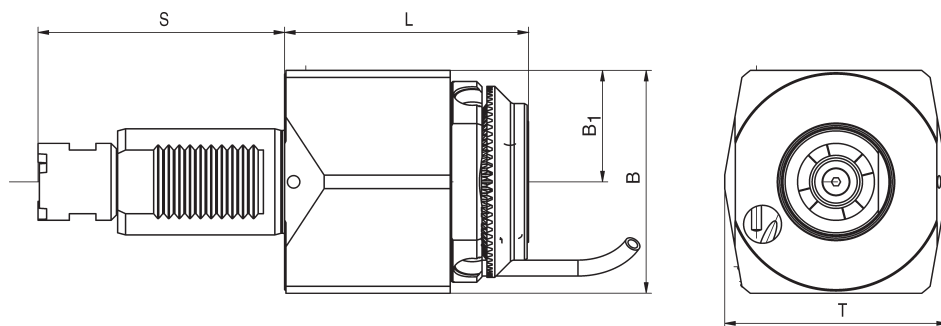
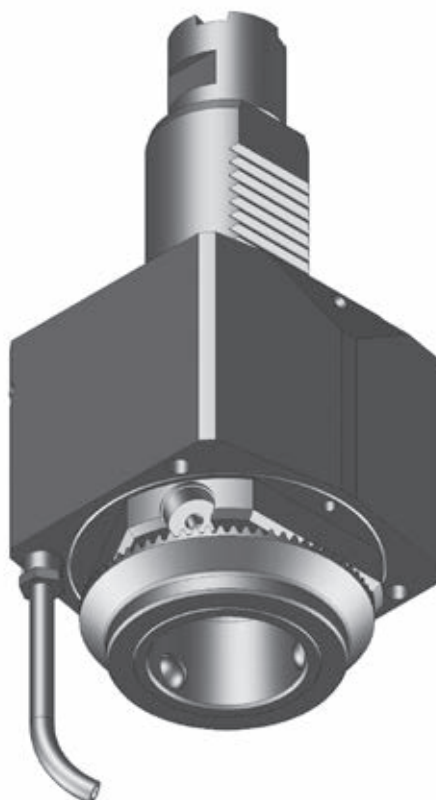
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LVT 300 - M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	Layer gear; single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	

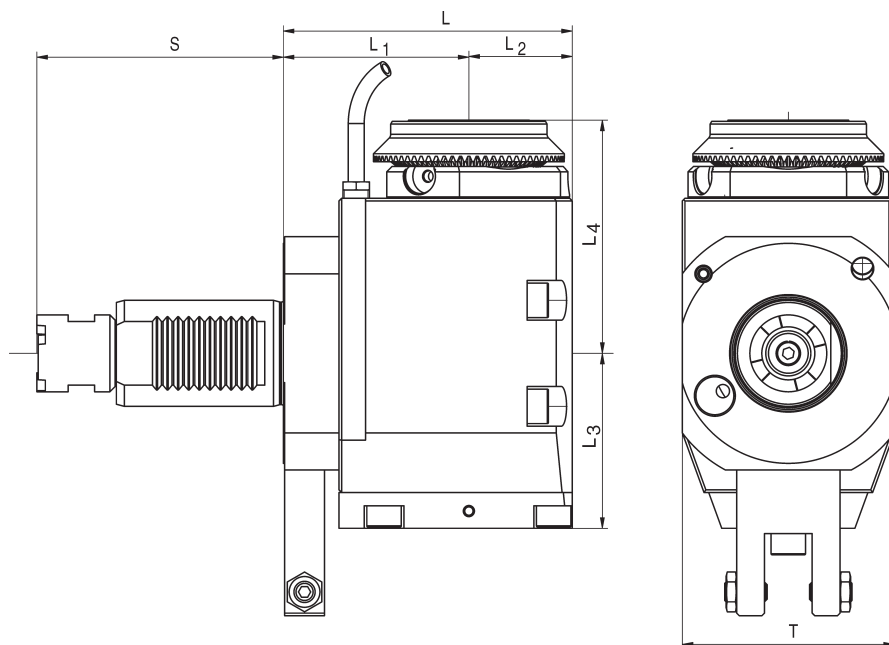
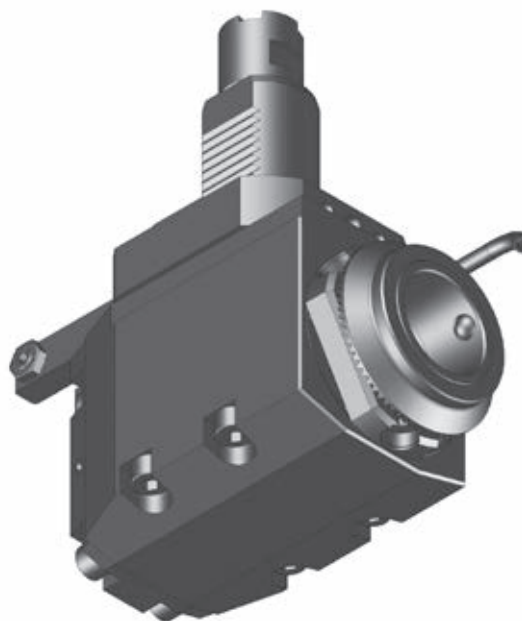


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
103441	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	75,5	87	38	93	75	↻ ↻
133711	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	75,5	87	38	93	75	↻ ↻
133712	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92,0	84	42	93	84	↻ ↻

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LVT 300 - M</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	Layer gear; single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103528	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	109	70	39	66	70	93	80	↺ ↻
133717	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	70	93	80	↻ ↺
103486	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	88	93	80	↻ ↺

\* With clamping nuts with sealing, seals see page 530

**LOKUMA**

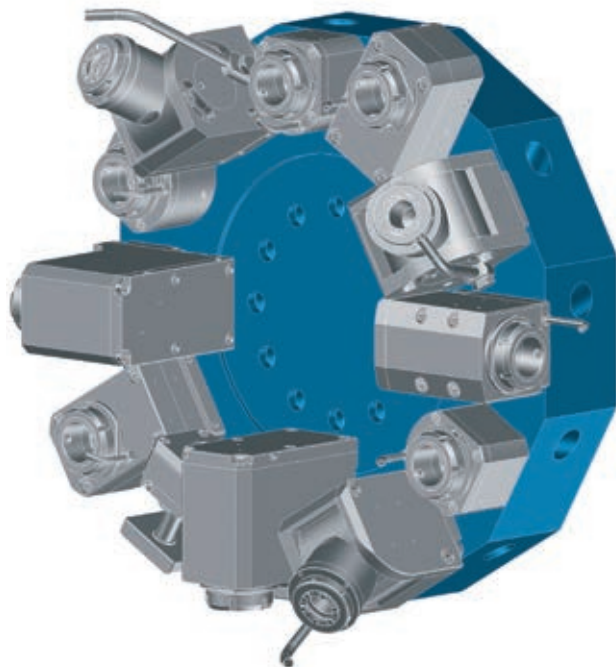
**LB 400 - M / LU 400 - M (Upper Turret)**

**Data**

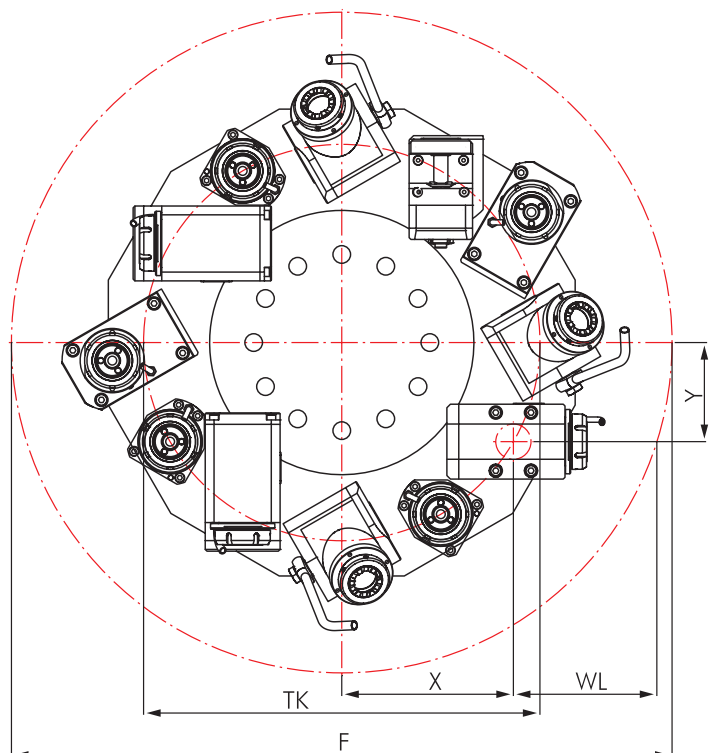
Machine type Series		Turret Stations
<b>LB 400</b>	<b>M</b>	12
<b>LU 400</b>	<b>M</b>	12



**Disc-type Turret VDI 40**



**Interference Circles**





Machine type Series	F	TK	X	Y	WL
<b>LB/LU400</b>	736	446	215	60	148



## LB 400 - M / LU 400 - M (Upper Turret)

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

### Driven Toolholders

	Page		Page
<b>Straight Unit</b>			358
<b>Angle Unit</b>			359

### Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



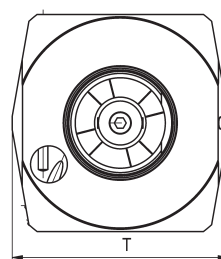
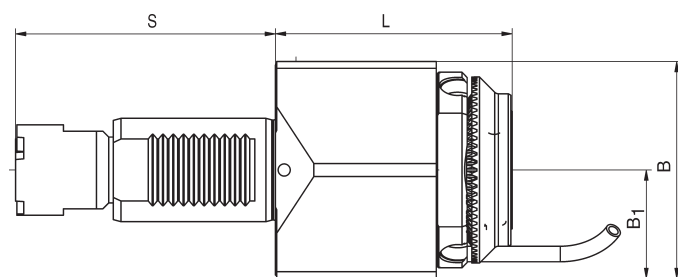
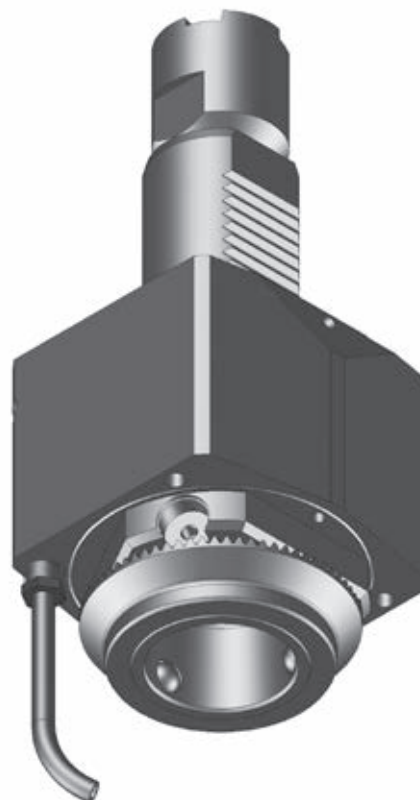
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

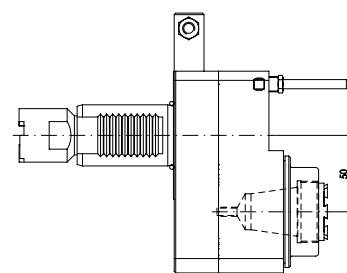
# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 400-M</b> <b>LU 400-M (Only for Upper Turret)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	Layer gear; single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	



With offset:

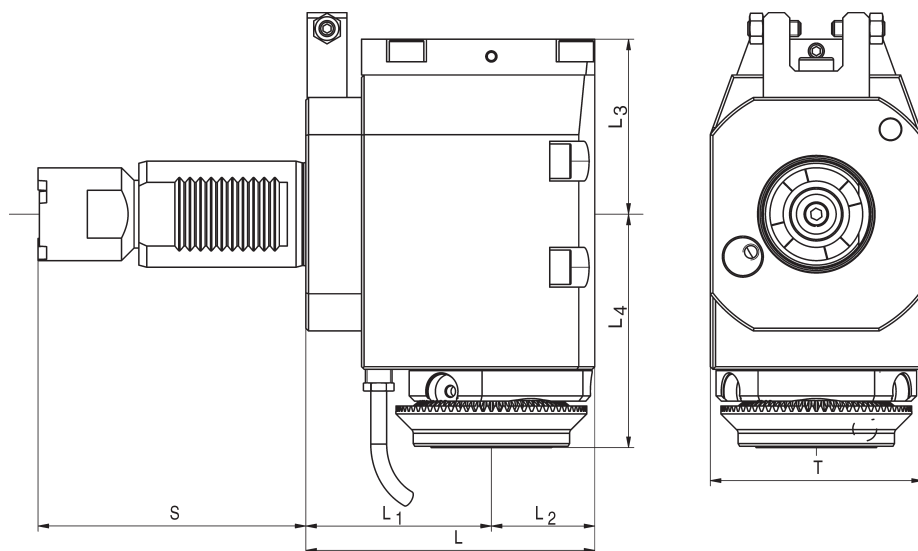
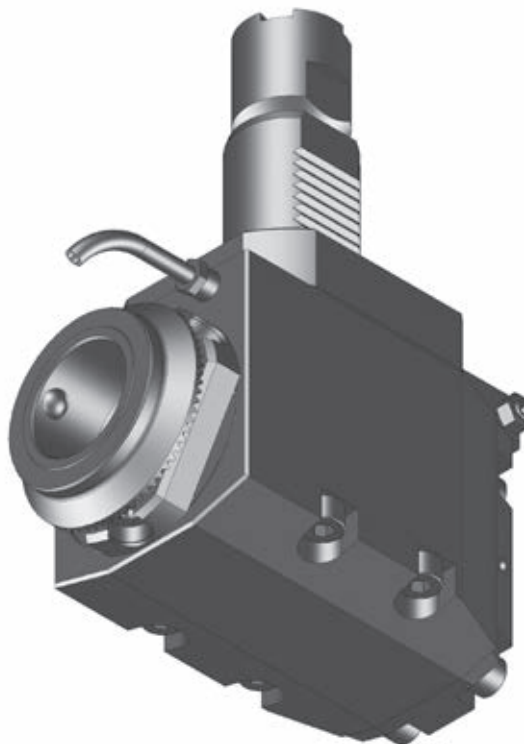


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
103505	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	75,5	87	38	101	75	↺ ↻
103509	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	75,5	87	38	101	75	↻ ↺
103521	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92,0	84	42	101	84	↻ ↺
With offset 50 mm:												
124010	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	95,0	160	70	101	80	↻ ↺



# Angle Unit

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 400-M</b> <b>LU 400-M (Only for Upper Turret)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	Layer gear; single level
Graduation	30 / 60°
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103542	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	109	70	39	66	70	101	80	↺ ↻
103492	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	70	101	80	↻ ↺
103538	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	88	101	80	↻ ↺

\* With clamping nuts with sealing, seals see page 530

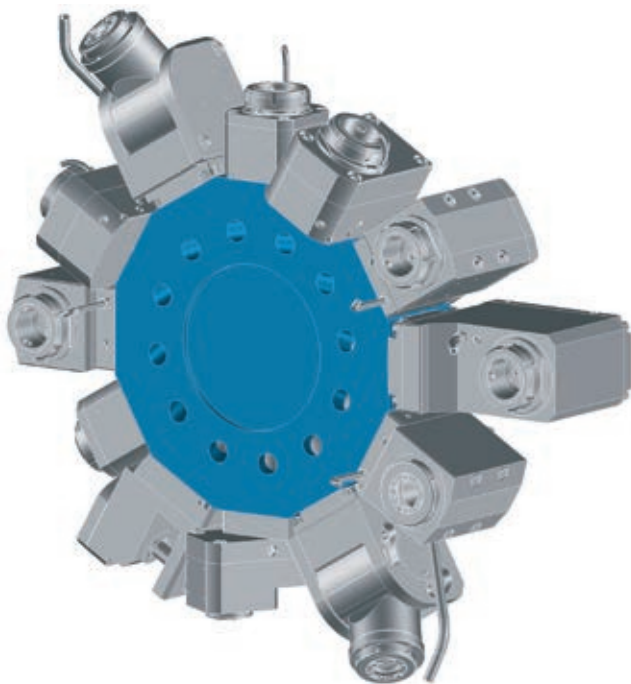
**LOKUMA LB 2000 / 2500 / 3000**

**Data**

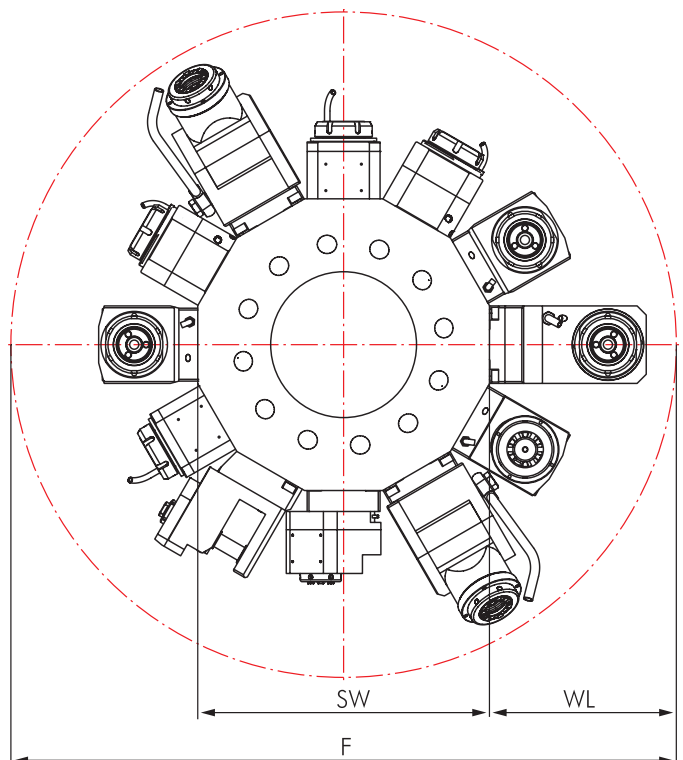
Machine type Series		Turret Stations
<b>LB 2000</b>	<b>EX</b>	12
<b>LB 2500</b>	<b>EX</b>	12
<b>LB 3000</b>	<b>EX</b>	12



**Star-type Turret „BMT“**





**Interference Circles**



The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.

## Live Tools

	Page		Page
<b>Straight Unit</b>			
	362		
<b>Angle Unit</b>			
			363

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



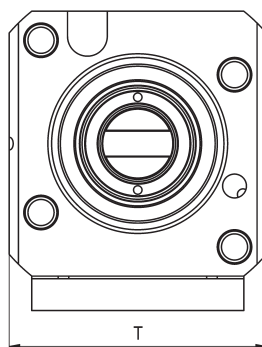
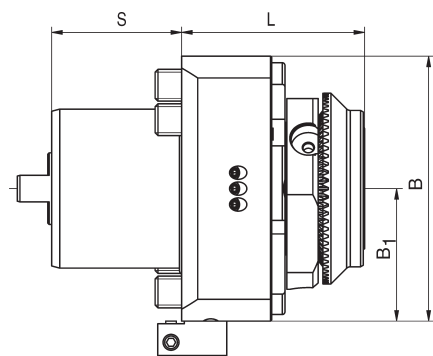
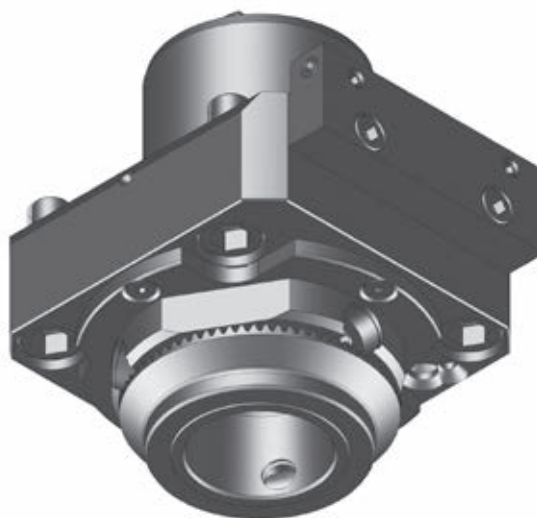
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 2000</b> <b>LB 2500</b> <b>LB 3000</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 60 mm
Drive	Tang
SW	10 mm
Modular Interfaces	
<b>mimaticMi</b>	

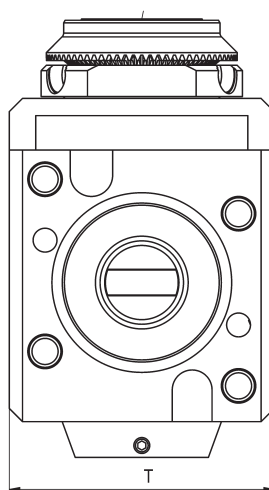
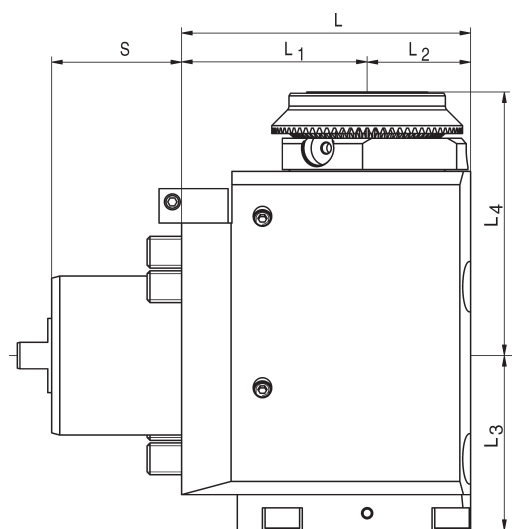
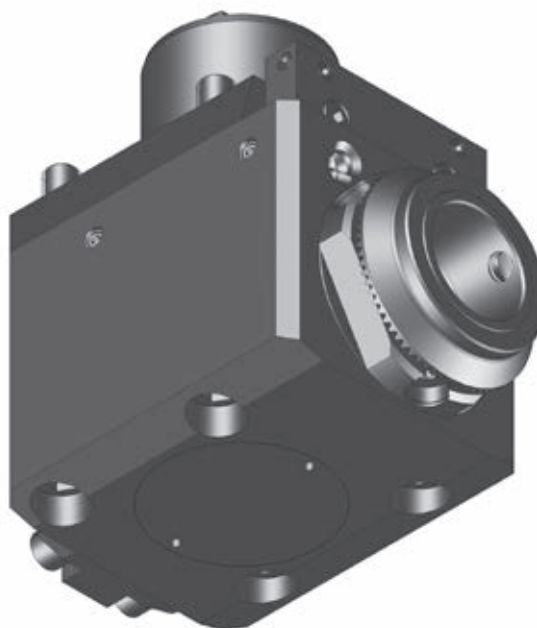


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
176408	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	65	100	50	49	97	↺ ↻
167718	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	65	100	50	49	97	↻ ↺
167714	mi 50	-	80 Nm	6.000 / 6.000	i = 1:1	internal	69	100	50	49	97	↻ ↺

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LB 2000</b> <b>LB 2500</b> <b>LB 3000</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 60 mm
Drive	Tang
SW	10 mm
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
167731	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	84,5	49	100	↻ ↻
167710	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	99,5	49	100	↻ ↻

\* With clamping nuts with sealing, seals see page 530

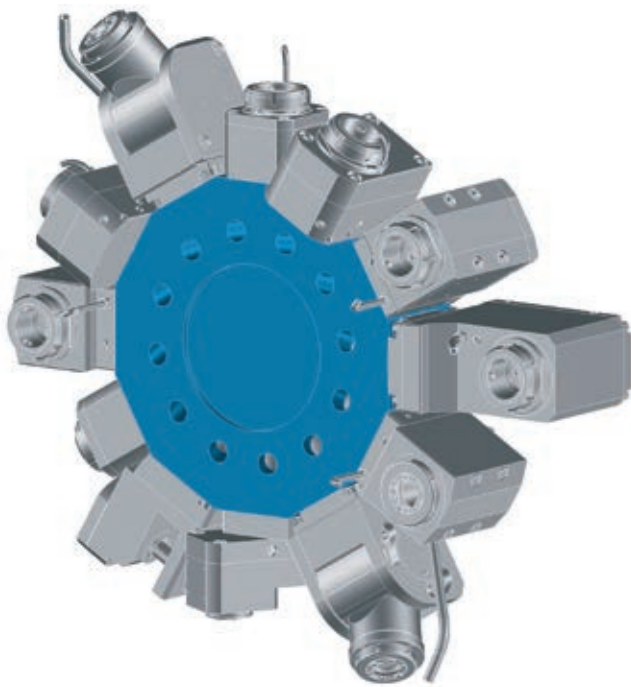
**LOKUMA LT 2000**

**Data**

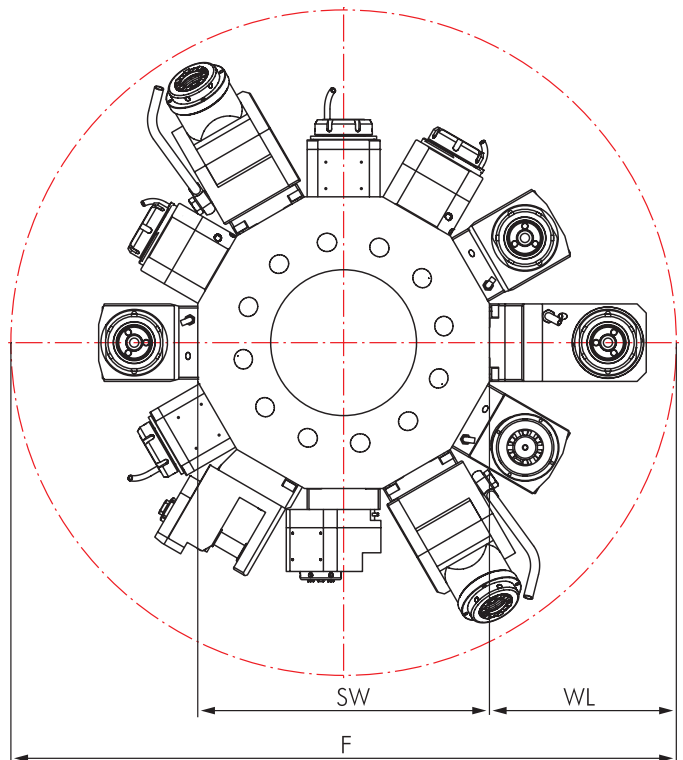
Machine type Series	Turret Stations
<b>LT 2000 EX</b>	16



**Star-type Turret „BMT“**






**Interference Circles**



Machine type Series	F	SW	WL
<b>LT 2000 EX</b>	650	420	115

## Live Tools

	Page		Page		
<b>Straight Unit</b>		366	<b>Angle Unit, 2-Axis</b>		368
<b>Angle Unit</b>		367			

## Options and Accessories

<b>mi Toolholders</b>		mi System Description 471 Toolholders 473-477 Accessories 478-479
<b>Accessories</b>		Collets DIN 6499 526-527 Threading Collets 528-529 Wrenches 525 Clamping Nuts 525 Sleeves and Bushings 531

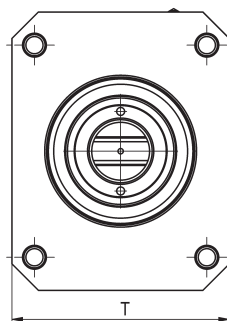
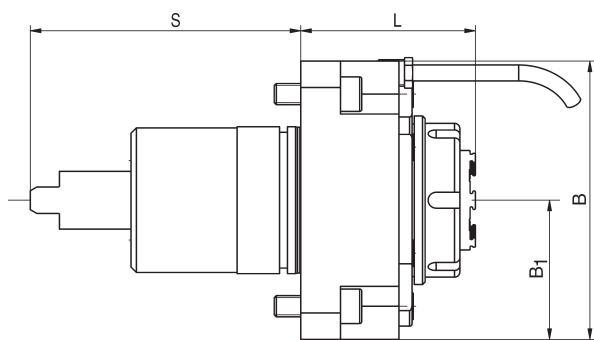
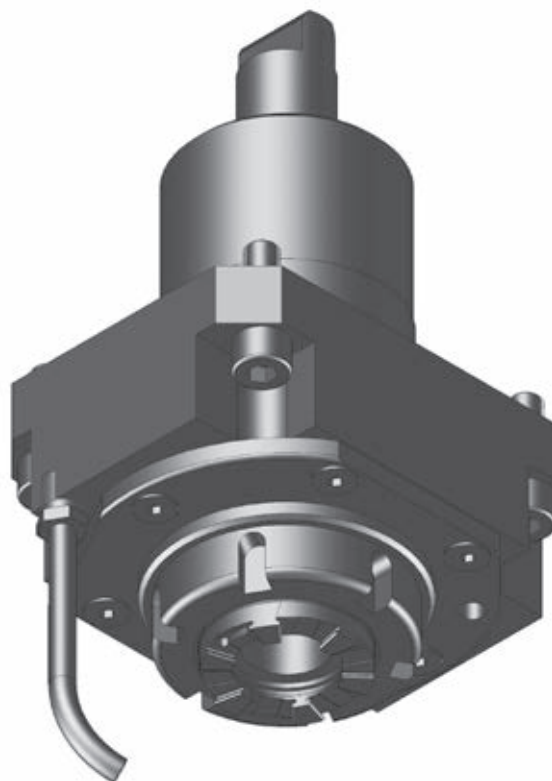


### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
 Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

## Straight Unit

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LT 2000</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 55,4 mm
Drive	Tang
SW	10 mm



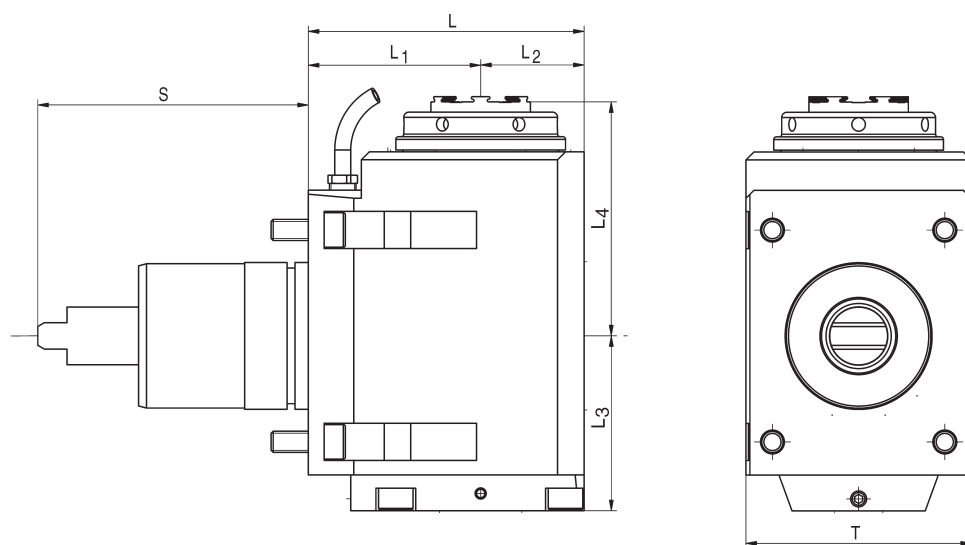
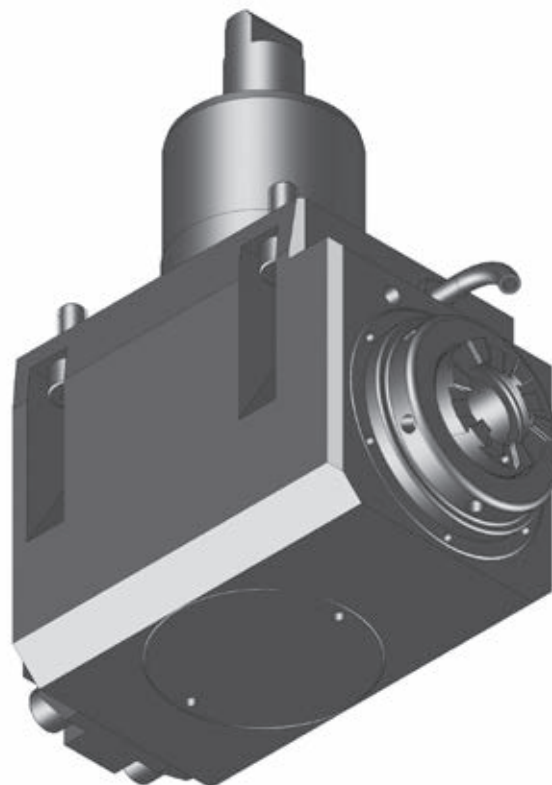
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
176394	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	65	105	50	105	82	↺ ↻
176393	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	65	105	50	105	82	↻ ↺



# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LT 2000</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 55,4 mm
Drive	Tang
SW	10 mm



13

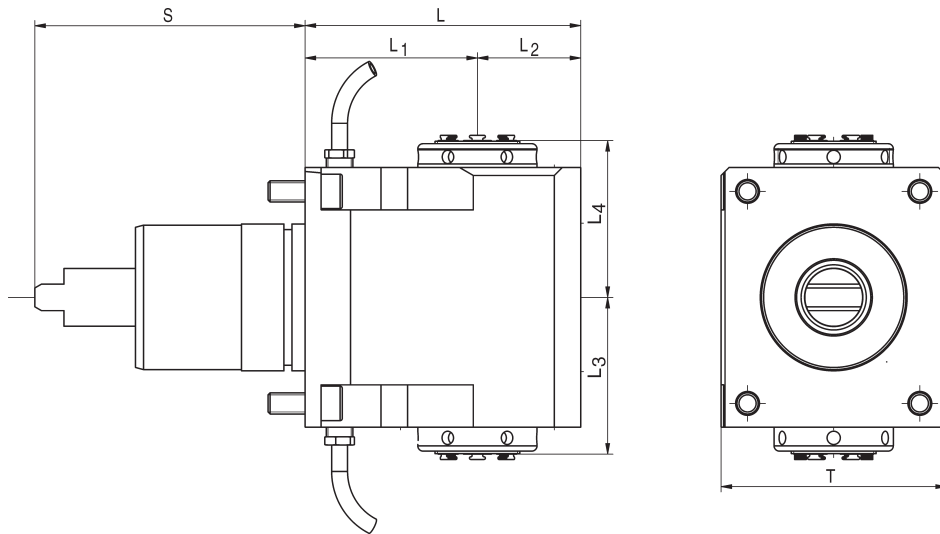
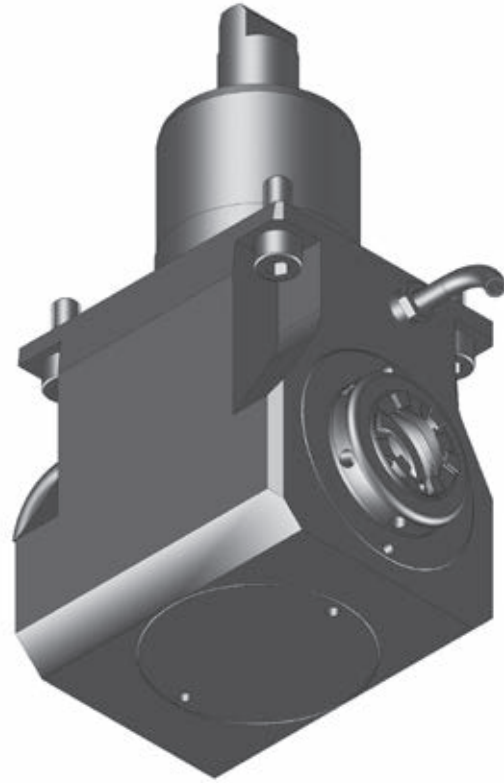
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
176401	ER 32	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	external	102	65	37	68	88	102	85	↺ ↻
176400	ER 32*	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	internal	102	65	37	68	88	102	85	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, 2-Axis

Connectible in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>LOKUMA</b>	
for Machine type	
<b>LT 2000</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 55,4 mm
Drive	Tang
SW	10 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm
176655	ER 25	0,5-16	30 Nm	6.500 / 6.500	i = 1:1	external	104	65	39	60	60	102	85

TÜV SÜD  
 ZERTIFIKAT ♦ CERTIFICATE ♦ 認證證書 ♦ CERTIFICADO ♦ CERTIFICAT



Management Service

# CERTIFICATE

The Certification Body  
of TÜV SÜD Management Service GmbH  
certifies that

**mimatic**<sup>®</sup>  
T o o l S y s t e m s

**mimatic GmbH**  
Westendstraße 3  
D-87488 Betzigau

has established and applies  
a Quality Management System for

**Development, Design, Production, Sales and  
Service of Driven Toolholders, Cutting Tools,  
Clamping Systems and Special Tools.**

An audit was performed, Report No. **70006182**  
Proof has been furnished that the requirements  
according to

**ISO 9001:2008**

are fulfilled. The certificate is valid until **2014-02-06**  
Certificate Registration No. **12 100 15724 TMS**

*M. Wegner*

Munich, 2013-02-26



QMS-TGA-ZM-07-92



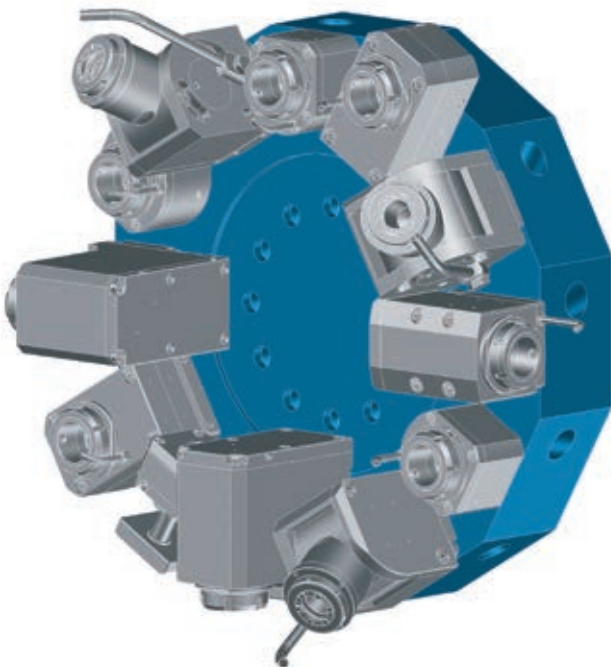
**DIN 5482 (B 15 x 12)**

**Data**

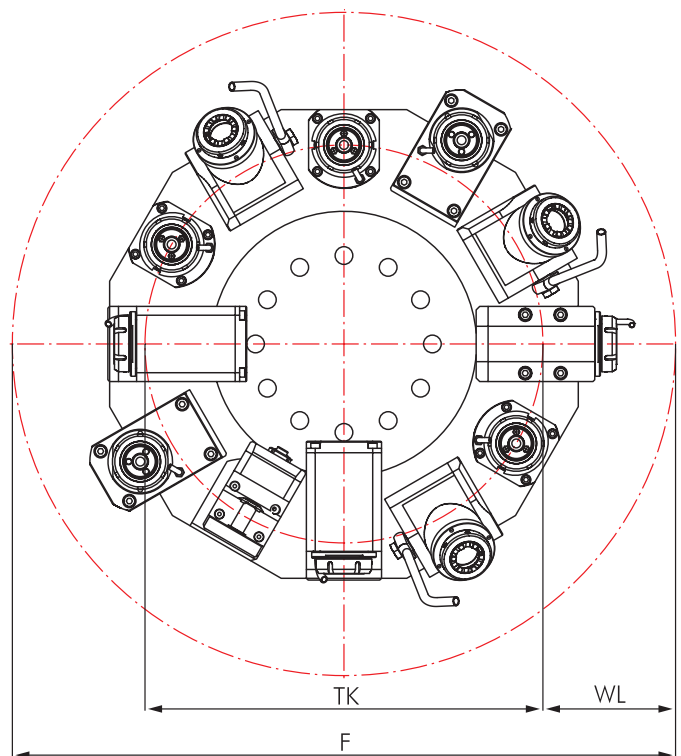
Disc-type Turret	Turret Stations
<b>Drive</b>	<b>DIN 5482 (B 15 x 12)</b>



**Disc-type Turret VDI 30**



**Interference Circles**



The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.

## Live Tools

	Page		Page
<b>Straight Unit</b>	372		
<b>Angle Unit, Offset Type</b>			374
<b>Angle Unit</b>	373		
<b>Angle Unit, adjustable 0-100°</b>			375
<b>Saw Blade Holder</b>			376

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



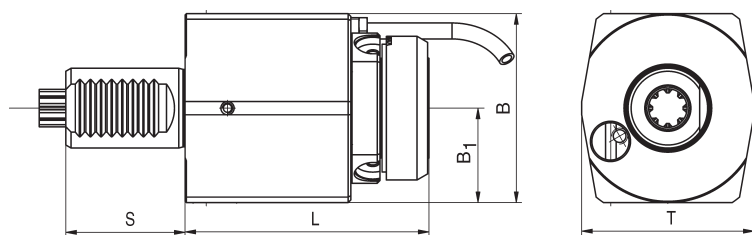
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

## Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 15 x 12)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	DIN 5482 B 15 x 12 Z = 8 Ø 14,5 mm
Modular Interfaces	
<b>mimaticMi</b>	

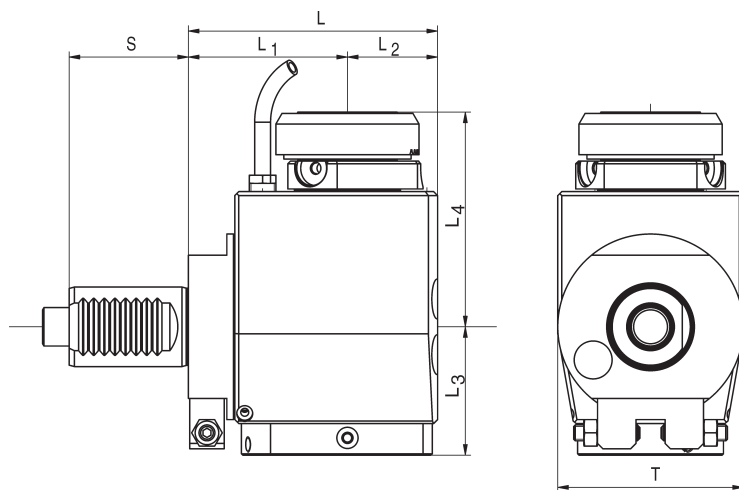
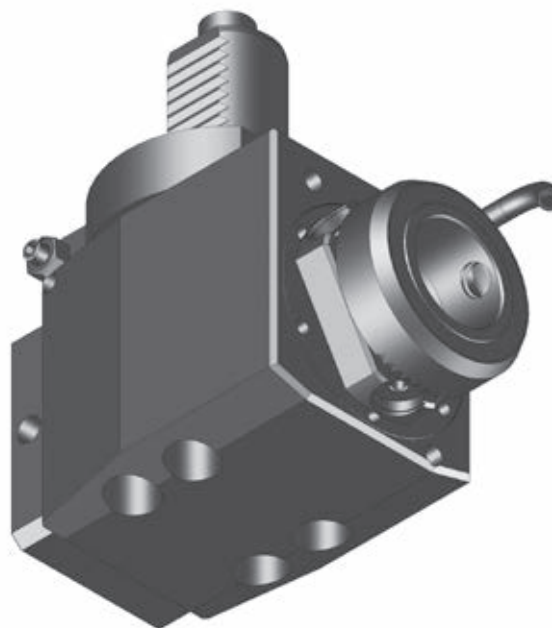


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
123780	ER 25	0,5-16	40 Nm	6.500 / 6.500	i = 1:1	external	77	70	35,0	45	70	↻ ↻
124135	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	77	70	35,0	45	70	↻ ↻
124137	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	92	71	35,5	45	65	↻ ↻

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 15 x 12)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	DIN 5482 B 15 x 12 Z = 8 Ø 14,5 mm
Modular Interfaces	
<b>mimaticMi</b>	



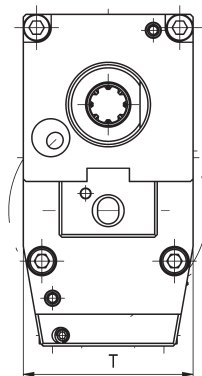
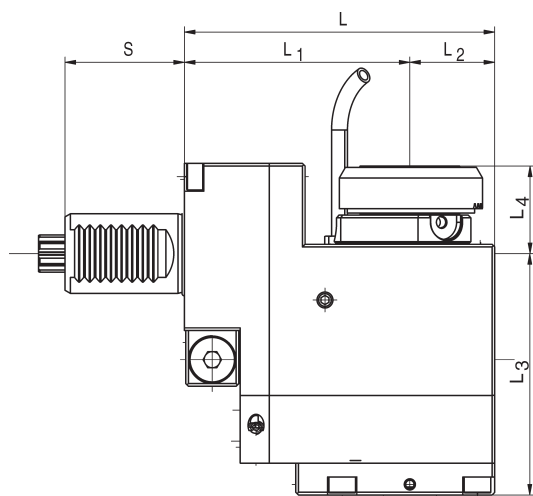
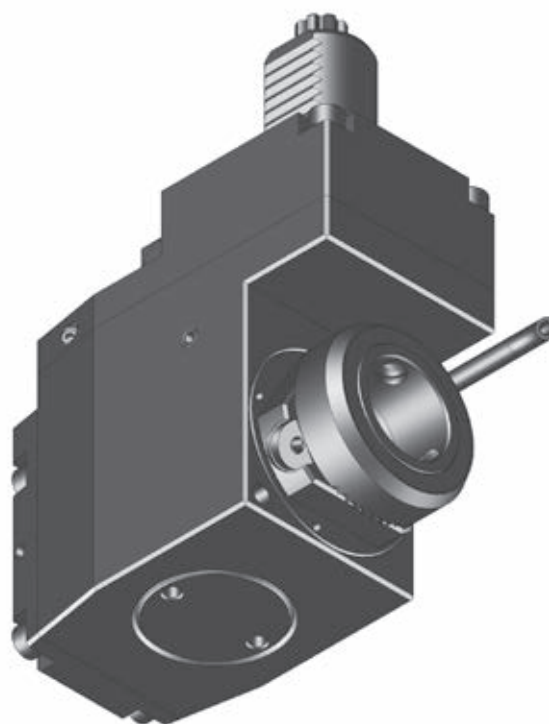
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124491	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	94	60	34	36,5	60	45	70	↺ ↻
101413	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	94	60	34	54,0	60	45	70	↻ ↺
169181	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	94	60	34	48,5	81	45	70	↻ ↺

\* With clamping nuts with sealing, seals see page 530

## Angle Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 15 x 12)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	DIN 5482 B 15 x 12 Z = 8 Ø 14,5 mm
Modular Interfaces	
<b>mimaticMi</b>	



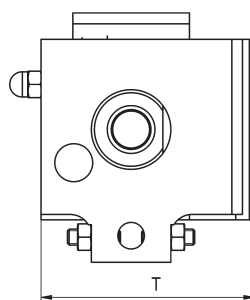
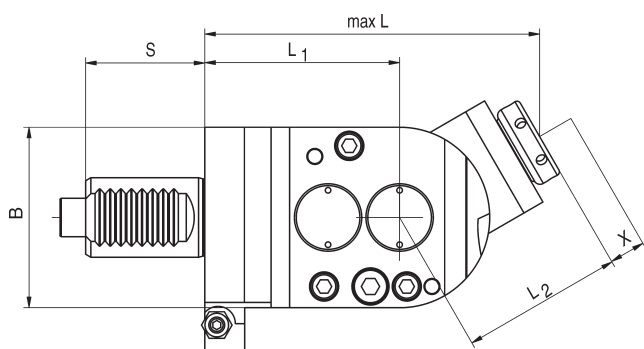
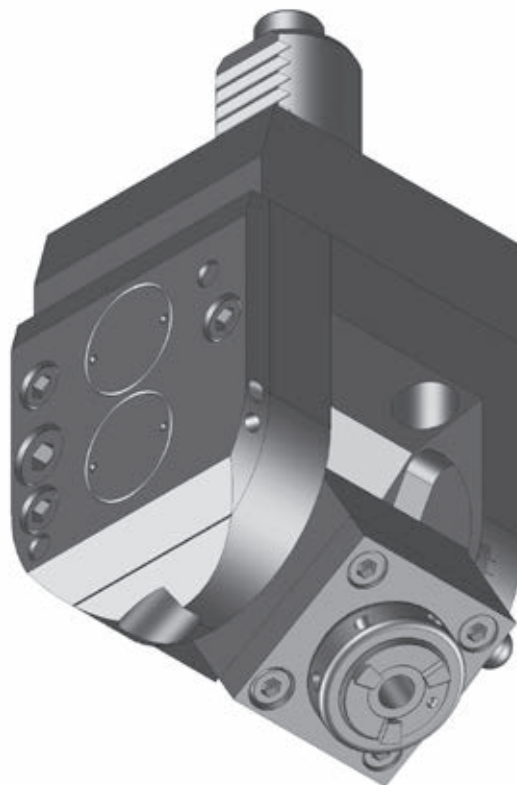
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124497**	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	117	85	32	91	15	45	64	↻ ↻
166412**	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	117	85	32	91	15	45	64	↻ ↻
124401**	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	117	85	32	91	33	45	64	↻ ↻



# Angle Unit, Adjustable 0-100°

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Turret Manufacturer	
with Drive	
<b>DIN 5482 (B 15 x 12)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 30
Drive	DIN 5482 B 15 x 12 Z = 8 Ø 14,5 mm



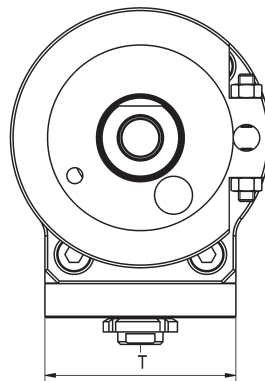
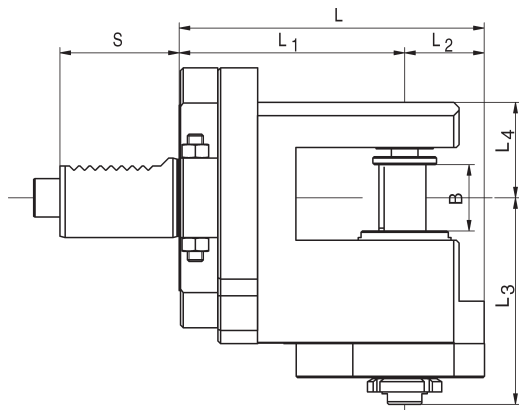
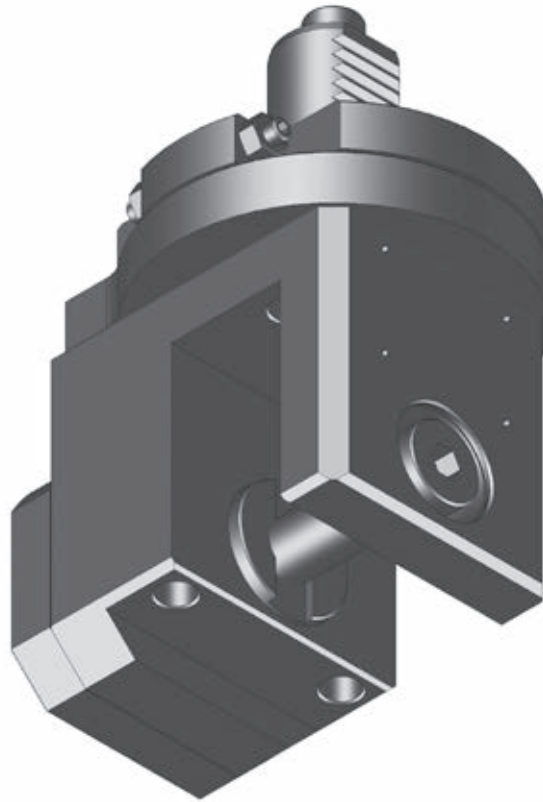
13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
179178*	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	138	73,5	64,5	85,5	45	68	

\* with precision adjustable unit PIN Ø 8 mm

# Saw Blade Holder

for Turret Manufacturer	
with Drive	
<b>DIN 5482 (B 15 x 12)</b>	
Dimensions	
Turret type	Disc-type Turret
Shank	VDI 30
Drive	DIN 5482 B 15 x 12 Z = 8 Ø 14,5 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
101777*	16	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	30	77,3	36	25	45	72

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Picture shows angle live tool (90°) for a Sauter VDI 40 turret with a mimatic<sup>®</sup> mi50 interface. The mimatic<sup>®</sup> mi interface is a very innovative modular quick change system to reduce machine downtimes because all units can be preset outside the machine.



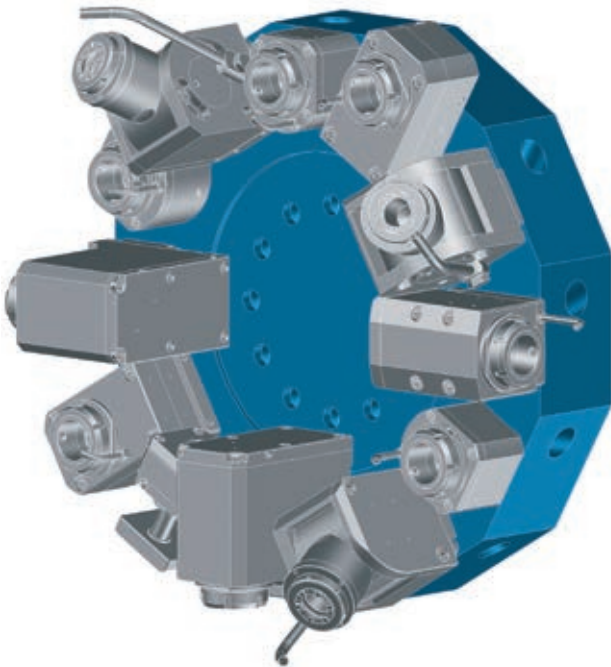
**DIN 5482 (B 17 x 14)**

**Data**

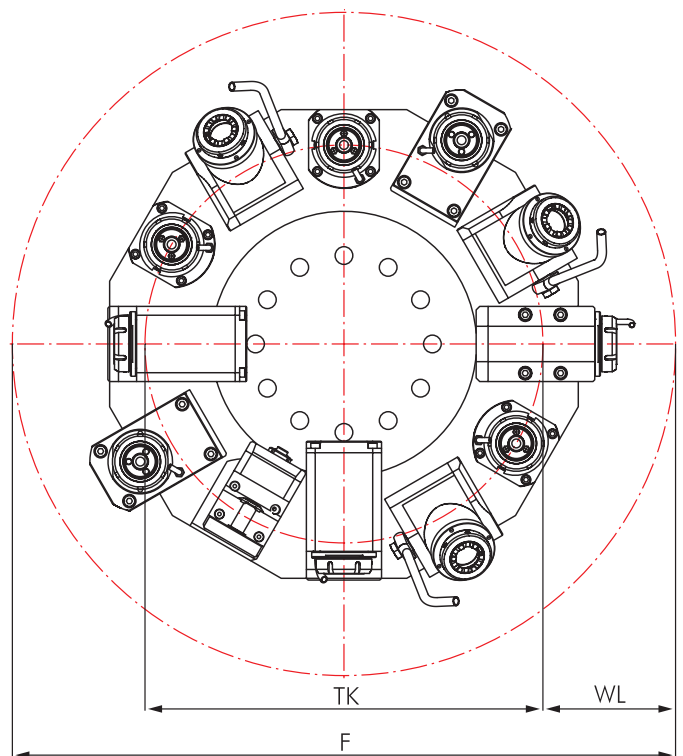
Disc-type Turret	Turret Stations
<b>Drive</b>	<b>DIN 5482 (B 17 x 14)</b>



**Disc-type Turret VDI 40**



**Interference Circles**



The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.

## Live Tools

	Page		Page
<b>Straight Unit</b>	380		
<b>Angle Unit, Offset Type</b>			382
<b>Angle Unit</b>	381		
<b>Angle Unit, adjustable 0-100°</b>			383
<b>Saw Blade Holder</b>			384

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



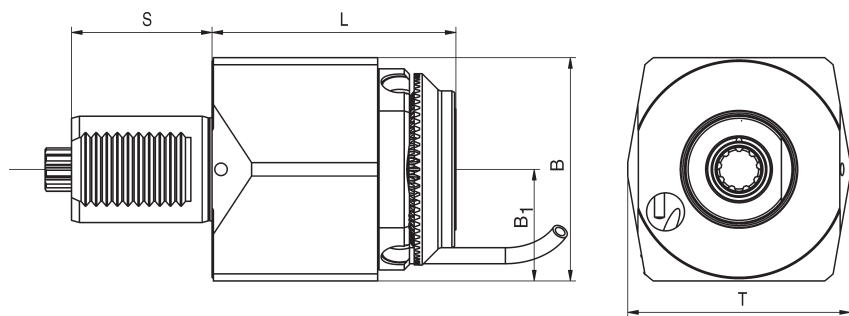
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

## Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 17 x 14)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	DIN 5482 B 17 x 14 Z = 9 Ø 16,5 mm
Modular Interfaces	
<b>mimaticMi</b> <b>HydroFLEX</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
123797	ER 32	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	external	95	80	40	53	80	↺ ↻
124154	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	80	89	40	53	80	↺ ↻
124157	mi 50	0,5-20	80 Nm	6.000 / 6.000	i = 1:1	internal	92	89	40	53	80	↺ ↻
124146	Hydro-Flex 20	6,0-20	80 Nm	8.000 / 8.000	i = 1:1	internal	83	89	40	53	80	↺ ↻

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer



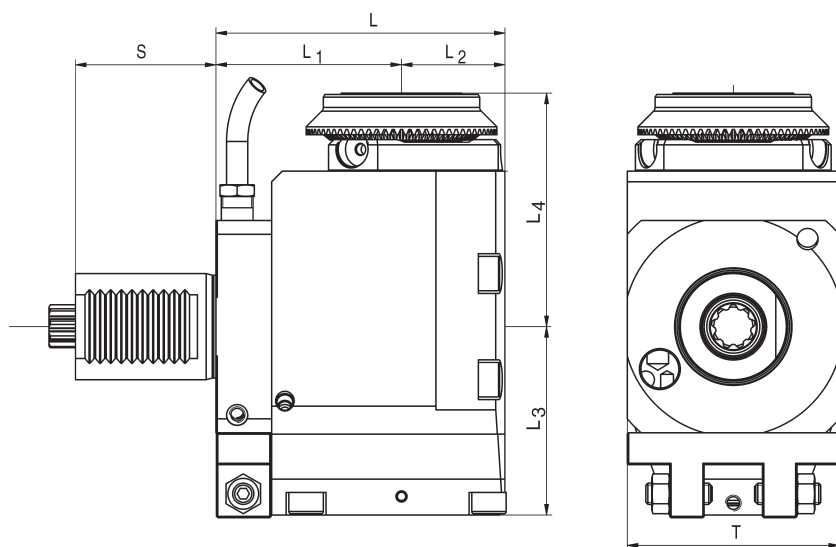
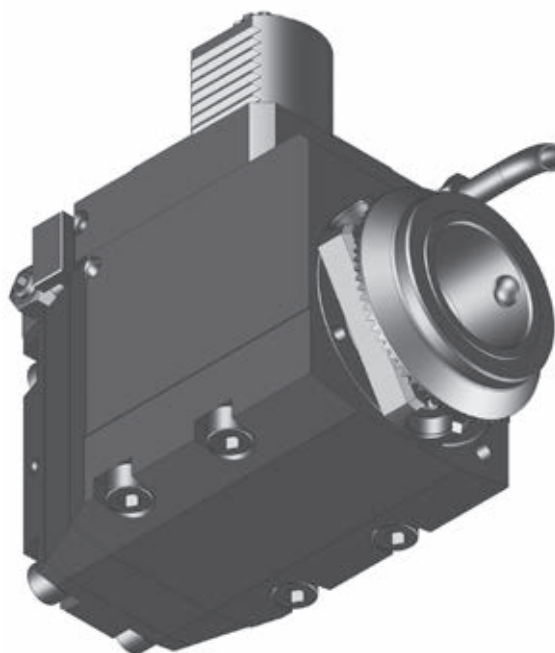
with Drive

**DIN 5482 (B 17 x 14)**

Dimensions

Revolver type	Disc-type Turret
Shank	VDI 40
Drive	DIN 5482 B 17 x 14 Z = 9 Ø 16,5 mm

Modular Interfaces

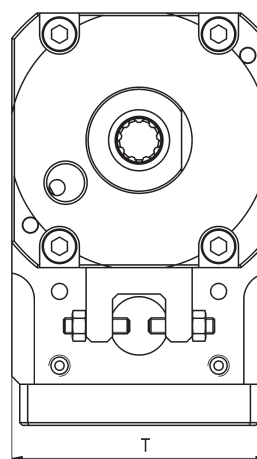
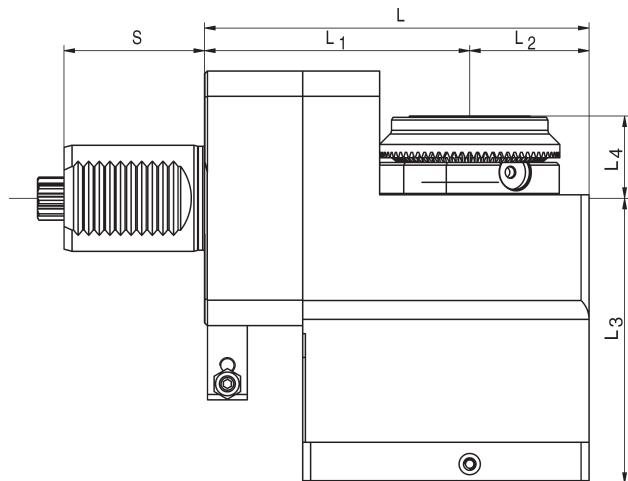
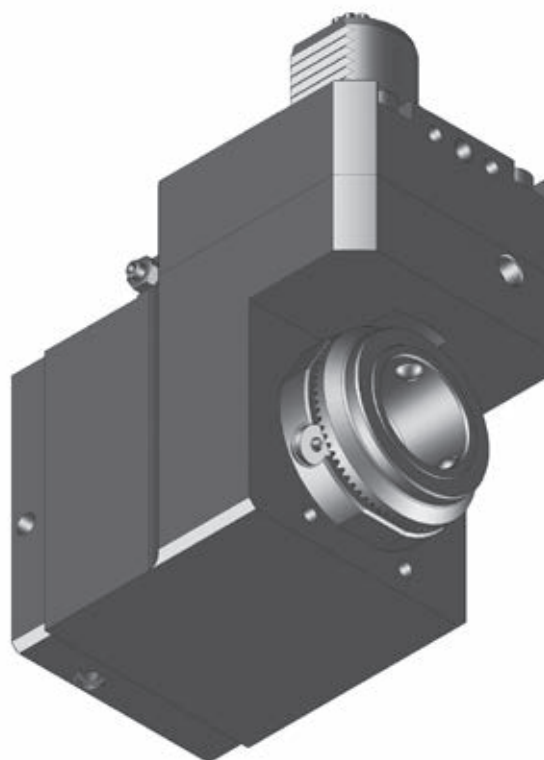
13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124516	ER 32	1,0-20	50 Nm	5.400 / 5.400	i = 1:1	external	113	70	43	69,0	70	53	80	↺ ↻
124804	ER 32*	1,0-20	50 Nm	5.200 / 5.200	i = 1:1	internal	113	70	43	75,5	70	53	80	↺ ↻
124805	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	113	70	43	75,5	88	53	80	↺ ↻
124801	Hydro-Flex 20	6,0-20	50 Nm	5.200 / 5.200	i = 1:1	internal	113	70	43	75,5	82	53	80	↺ ↻
124909	ER 25*	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	109	70	39	72,5	75	53	85	↺ ↻
124683	mi 40	-	20 Nm	6.000 / 12.000	i = 1:2	external	109	70	39	72,5	95	53	85	↺ ↻

\* With clamping nuts with sealing, seals see page 530

## Angle Unit, Offset Type

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 17 x 14)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	DIN 5482 B 17 x 14 Z = 9 Ø 16,5 mm
Modular Interfaces	
<b>mimaticMi</b>	



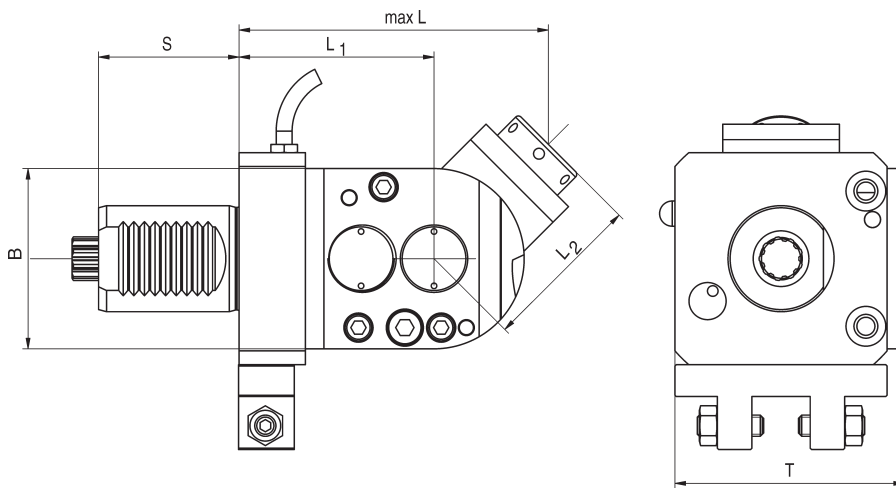
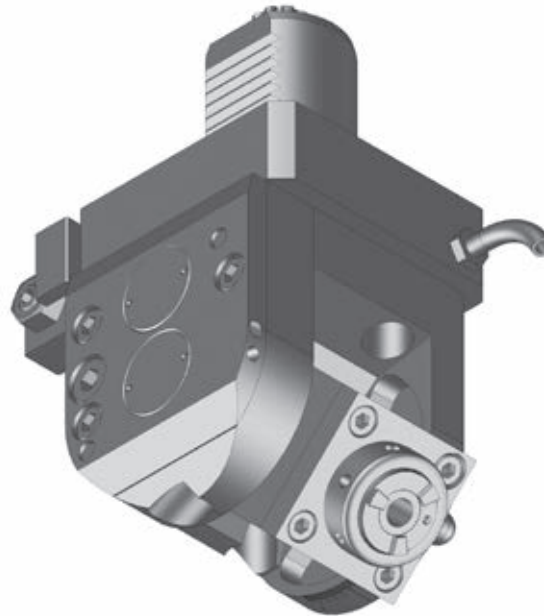
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124740	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	120	70	34	76,5	37	53	72	↻ ↻
124407	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	112	70	42	110,0	20	53	84	↻ ↻
124408**	mi 50	-	100 Nm	4.000 / 4.000	i = 1:1	internal	145	100	45	107,5	31	53	96	↻ ↻



# Angle Unit, Adjustable 0-100°

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

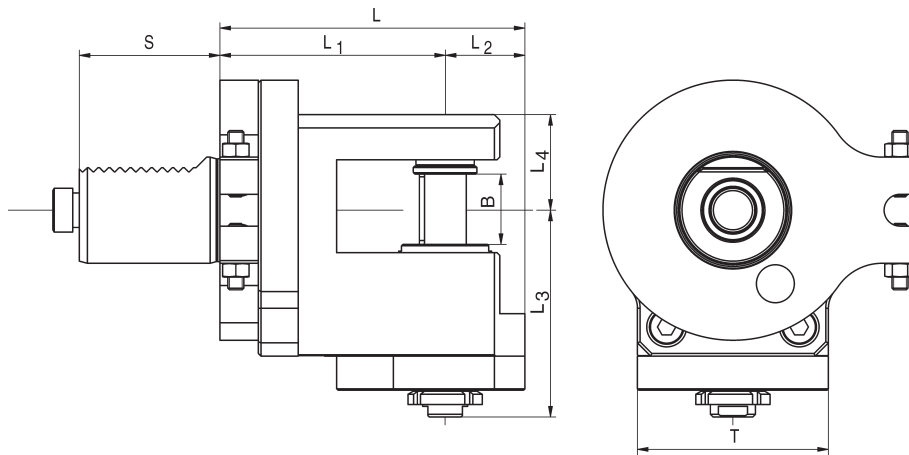
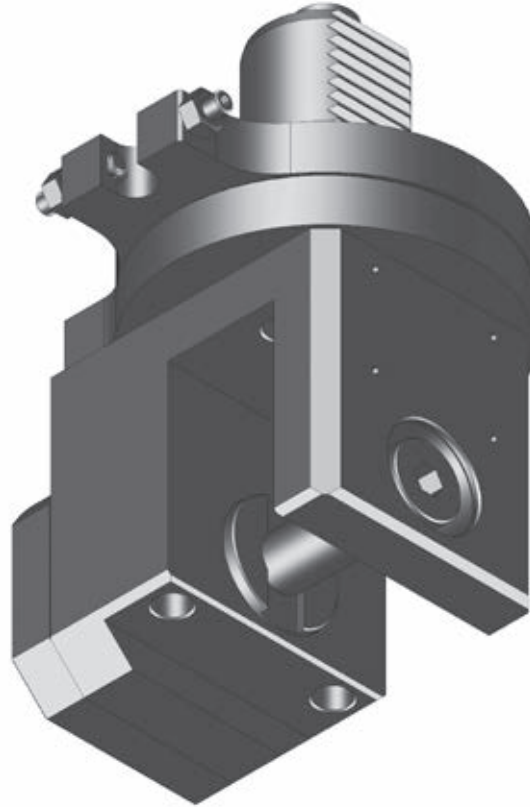
for Turret Manufacturer	
with Drive	
<b>DIN 5482 (B 17 x 14)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 40
Drive	DIN 5482 B 17 x 14 Z = 9 Ø 16,5 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
125009	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	134,5	73,5	61	92	53	90	

# Saw Blade Holder

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 17 x 14)</b>	
Dimensions	
Turret type	Disc-type Turret
Shank	VDI 40
Drive	DIN 5482 B 17 x 14 Z = 9 Ø 16,5 mm



Order No.	Fitting dia.mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
125087*	22	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	30	77,5	36	25	53	72
101810**	22	40 Nm	6.500 / 2.450	i = 2,66:1	external	130	95	35	87,5	36	25	53	72





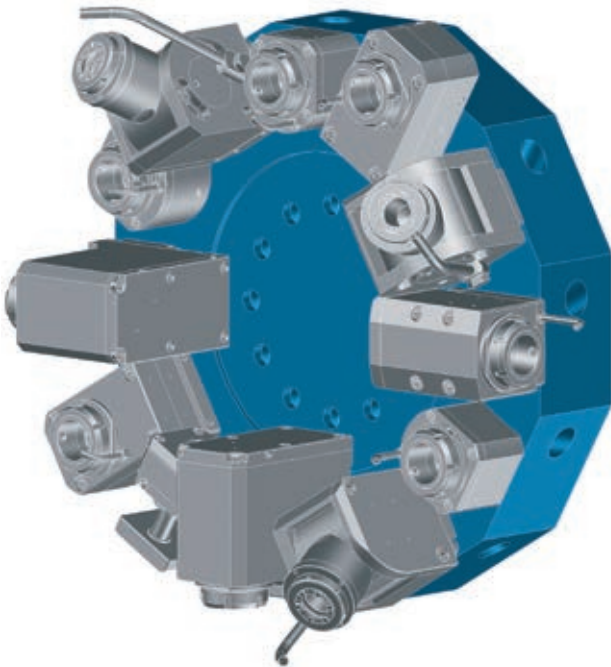
**DIN 5482 (B 20 x 17)**

**Data**

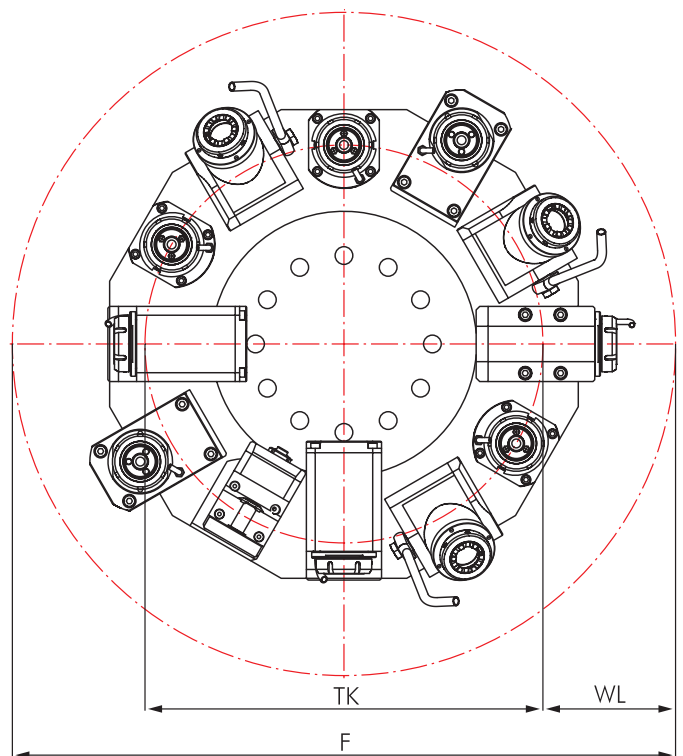
Disc-type Turret	Turret Stations
<b>Drive</b>	<b>DIN 5482 (B 20 x 17)</b>



**Disc-type Turret VDI 50**






**Interference Circles**



The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.

## Live Tools

Page		Page	
	<b>Straight Unit</b>		388
	<b>Angle Unit, Offset Type</b>		390
	<b>Angle Unit</b>		389
	<b>Angle Unit, adjustable 0-90°</b>		391
	<b>Saw Blade Holder</b>		392

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer

**SAUTER**

with Drive

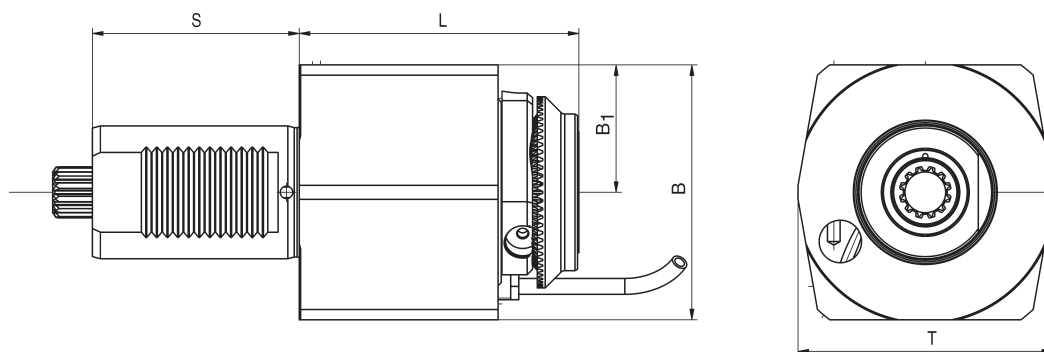
**DIN 5482 (B 20 x 17)**

Dimensions

Revolver type	Disc-type Turret
Shank	VDI 50
Drive	DIN 5482 B 20 x 17 Z = 12 Ø 19,5 mm

Modular Interfaces

**mimaticMi**  
**HydroFLEX**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
123815	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	86,0	96	48	78	96	↺ ↻
124188	ER 32*	1,0-20	80 Nm	5.200 / 5.200	i = 1:1	internal	86,0	96	48	78	96	↺ ↻
124191	mi 50	-	80 Nm	6.000 / 6.000	i = 1:1	internal	105,5	96	48	78	96	↺ ↻
124180	Hydro-Flex 20	6,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	104,0	96	48	78	96	↺ ↻

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 20 x 17)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 50
Drive	DIN 5482 B 20 x 17 Z = 12 Ø 19,5 mm
Modular Interfaces	
<b>mimaticMi</b> <b>HydroFLEX</b>	

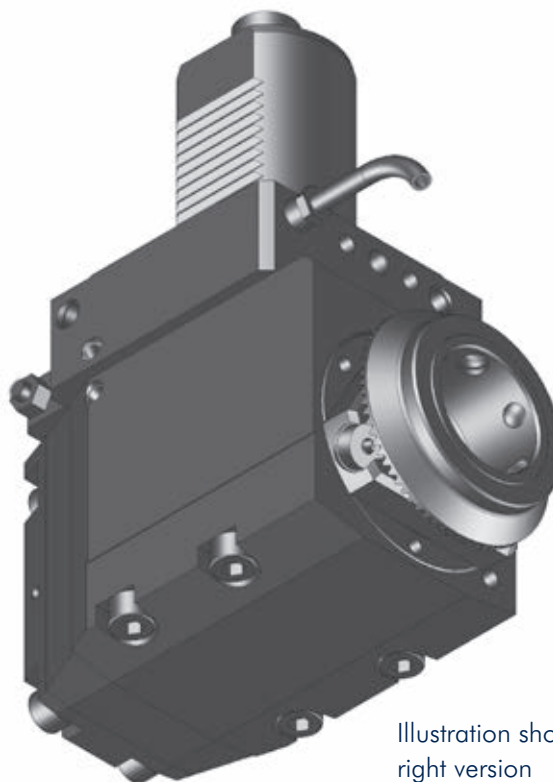
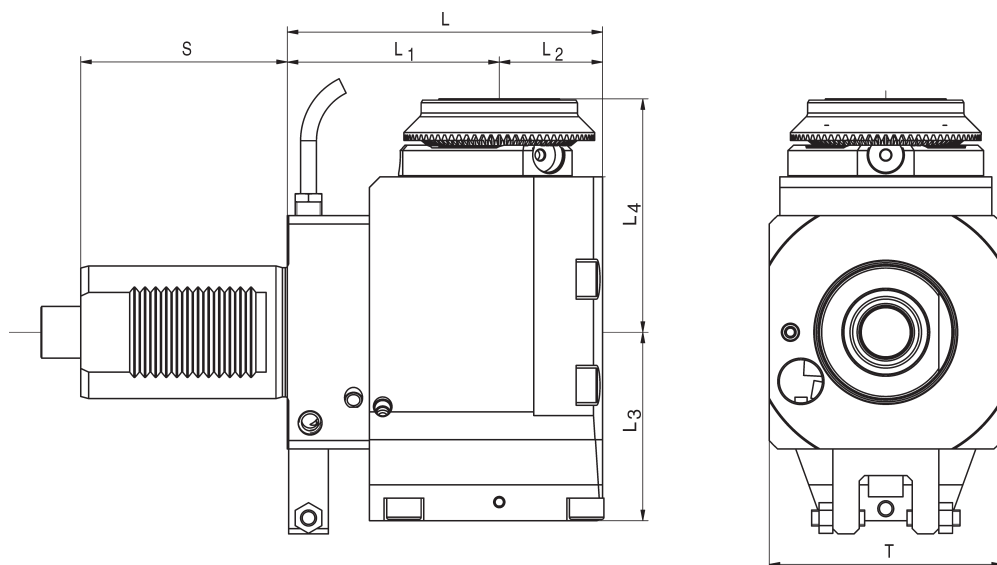


Illustration show right version



13

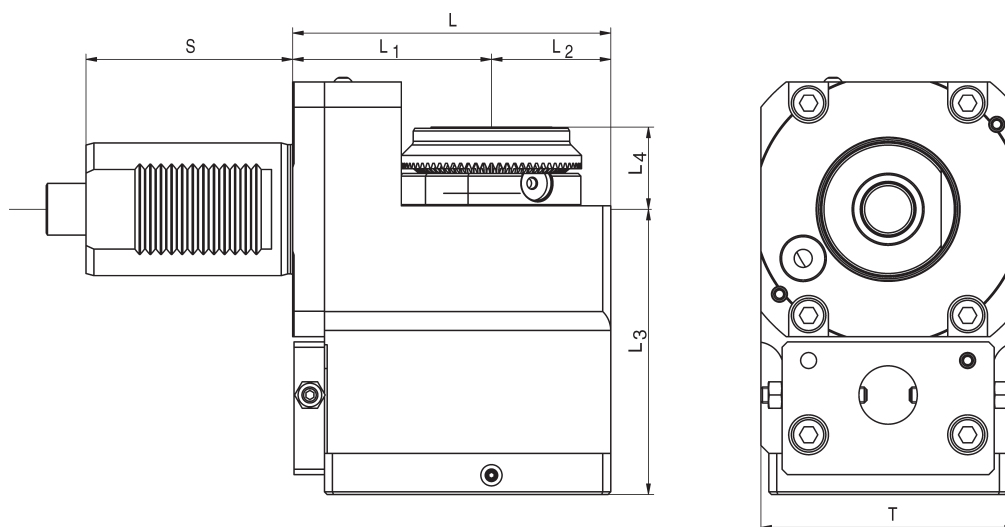
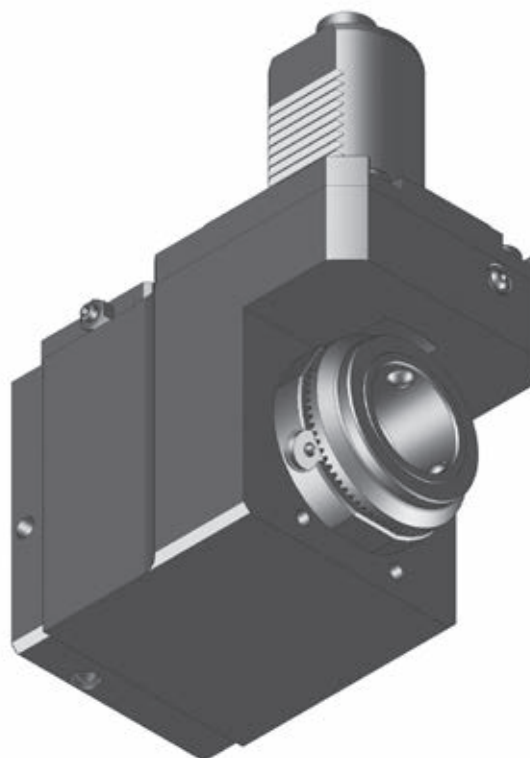
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124532	ER 32	1,0-20	80 Nm	5.200 / 5.200	i = 1:1	external	119	80	39	69,0	70	78	88	↺ ↻
124818	ER 32*	1,0-20	80 Nm	5.200 / 5.200	i = 1:1	internal	119	80	39	75,5	70	78	88	↺ ↻
124819	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	123	80	43	75,5	88	78	88	↺ ↻
101443	Hydro-Flex 20	6,0-20	50 Nm	6.000 / 6.000	i = 1:1	internal	119	80	39	75,5	85	78	88	↺ ↻
Left version:														
171907	Hydro-Flex 20	6,0-20	50 Nm	6.000 / 6.000	i = 1:1	internal	119	80	39	75,5	85	78	88	↻ ↺
124820	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	123	80	43	75,5	88	78	88	↻ ↺

\* With clamping nuts with sealing, seals see page 530

## Angle Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 20 x 17)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 50
Drive	DIN 5482 B 20 x 17 Z = 12 Ø 19,5 mm
Modular Interfaces	
<b>mimaticMi</b>	



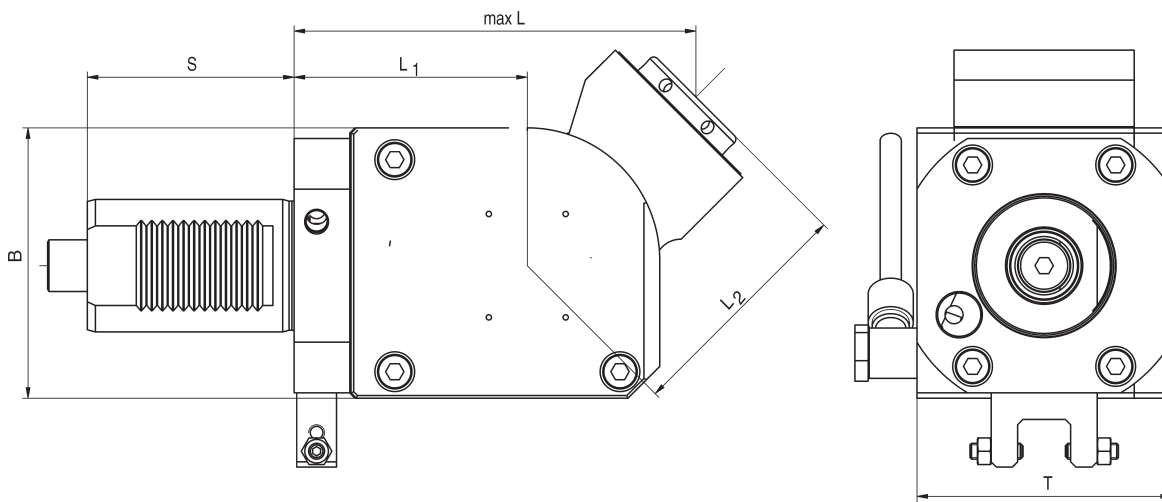
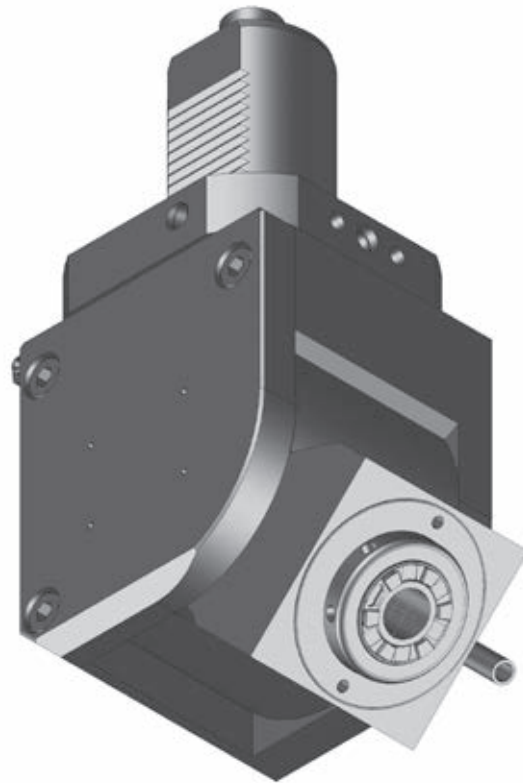
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124745	ER 32	1,0-20	80 Nm	4.000 / 4.000	i = 1:1	external	112	70	42	111,0	20	78	84	↺ ↻
124414	ER 32*	1,0-20	80 Nm	4.000 / 4.000	i = 1:1	internal	112	70	42	111,0	20	78	84	↻ ↺
124415	mi 50	-	100 Nm	4.000 / 4.000	i = 1:1	internal	120	75	45	107,5	31	78	96	↻ ↺



# Angle Unit, Adjustable 0-90°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Turret Manufacturer	
with Drive	
<b>DIN 5482 (B 20 x 17)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 50
Drive	DIN 5482 B 20 x 17 Z = 12 Ø 19,5 mm

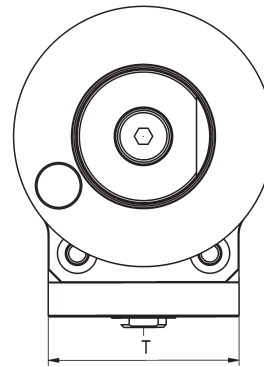
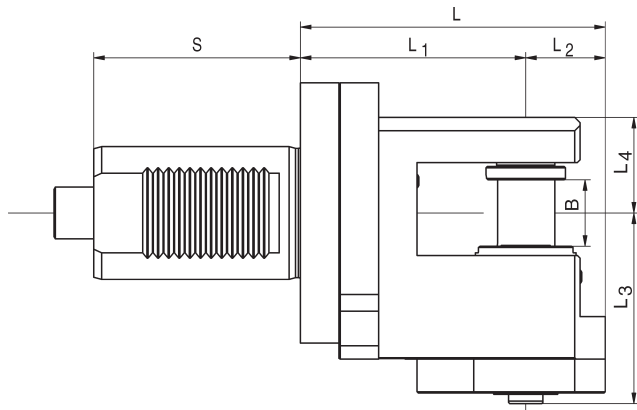
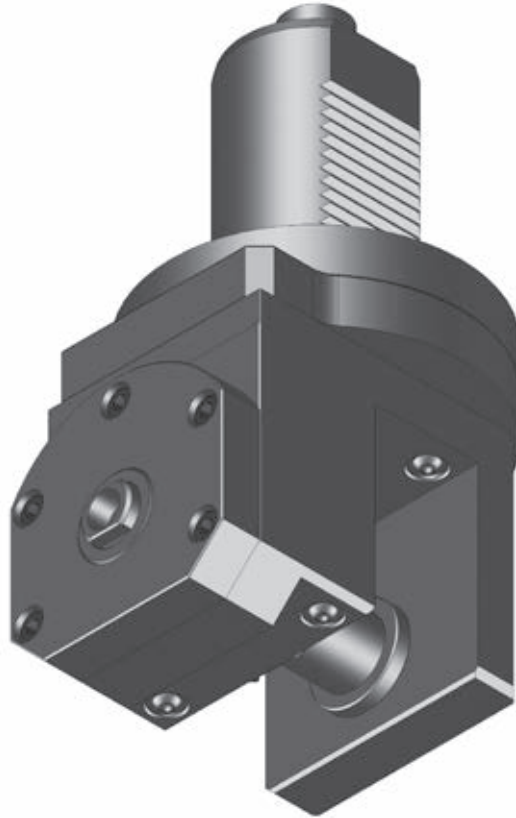


13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
101715	ER 25	0,5-16	35 Nm	6.500 / 6.500	i = 1:1	external	178	88	90	102	78	96	

# Saw Blade Holder

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 20 x 17)</b>	
Dimensions	
Turret type	Disc-type Turret
Shank	VDI 50
Drive	DIN 5482 B 20 x 17 Z = 12 Ø 19,5 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
101812*	22	40 Nm	6.500 / 2.450	i = 2,66:1	external	130	95	35	87,5	36	25	78	72

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Picture shows a 90° angle head with ER 32 collet



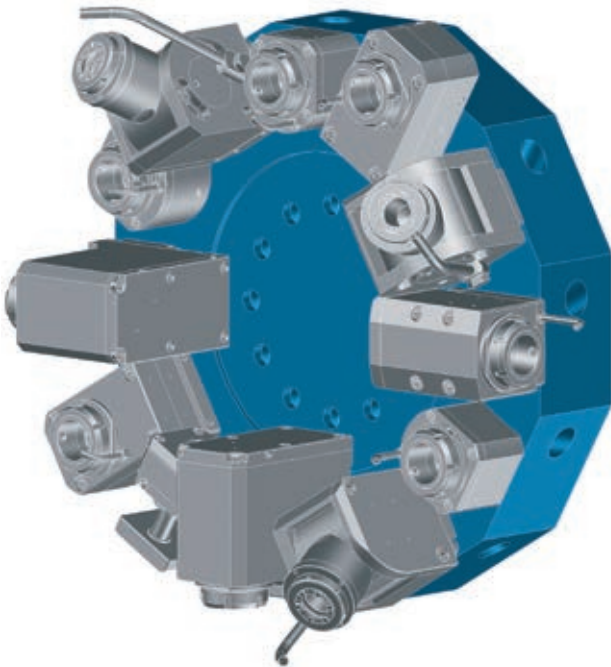
**DIN 5482 (B 25 x 22)**

**Data**

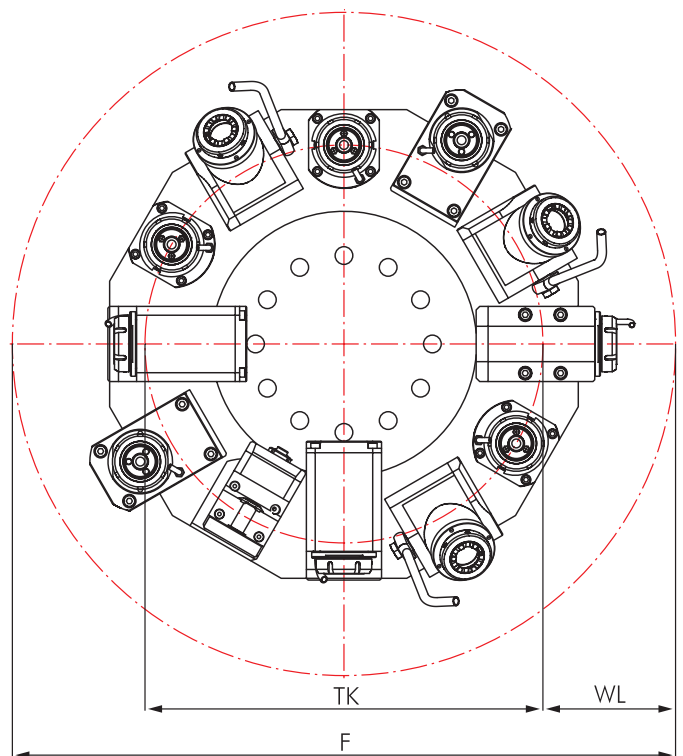
Disc-type Turret	Turret Stations
<b>Drive</b>	<b>DIN 5482 (B 25 x 22)</b>



**Disc-type Turret VDI 60**






**Interference Circles**



The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.

## Live Tools

Page		Page	
	<p><b>Straight Unit</b></p>  <p>396</p>		<p><b>Angle Unit, adjustable 0-100°</b></p>  <p>398</p>
	<p><b>Angle Unit</b></p>  <p>397</p>		

## Options and Accessories

<p><b>mi Toolholders</b></p> 	<p>mi System Description 471 Toolholders 473-477 Accessories 478-479</p>
<p><b>Standard VDI Toolholders</b></p> 	<p>VDI Toolholders 518-524 Accessories 525-531</p>
<p><b>Accessories</b></p> 	<p>Collets DIN 6499 526-527 Threading Collets 528-529 Wrenches 525 Clamping Nuts 525 Sleeves and Bushings 531</p>



### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer




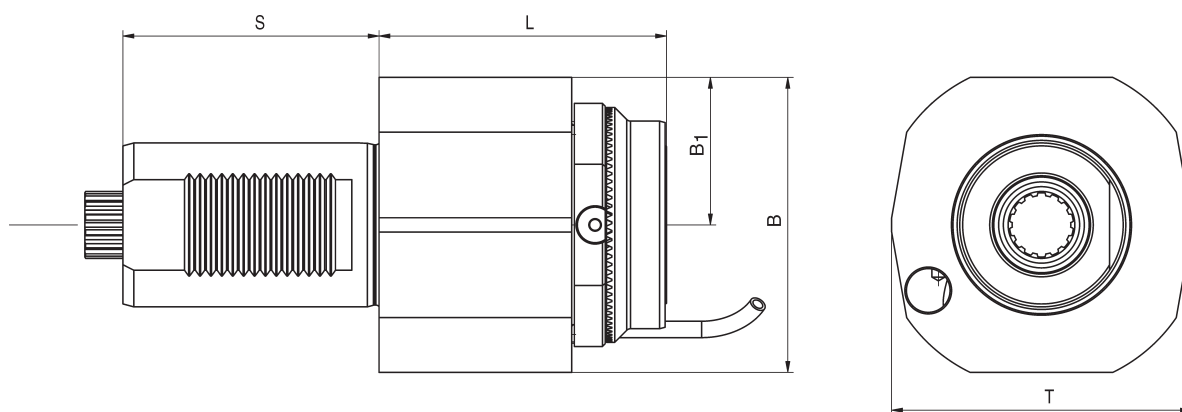
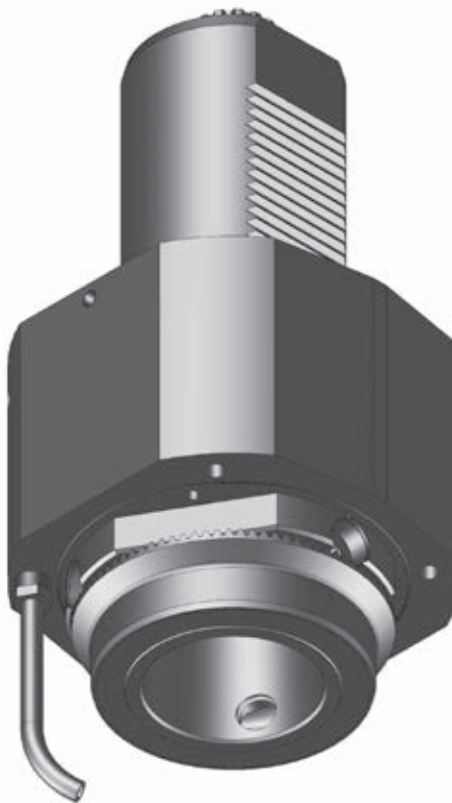
with Drive

**DIN 5482 (B 25 x 22)**

Dimensions

Revolver type	Disc-type Turret
Shank	VDI 60
Drive	DIN 5482 B 25 x 22 Z = 14 Ø 24,5 mm

Modular Interfaces

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
123820	ER 40	3,0-26	140 Nm	4.000 / 4.000	i = 1:1	external	118,0	108	54	94	104	↻ ↻
124204	ER 40	3,0-26	140 Nm	4.000 / 4.000	i = 1:1	internal	123,0	106	52	94	96	↻ ↻
124206	mi 63	-	140 Nm	4.000 / 4.000	i = 1:1	internal	105,5	108	54	94	110	↻ ↻

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 25 x 22)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 60
Drive	DIN 5482 B 25 x 22 Z = 14 Ø 24,5 mm
Modular Interfaces	
<b>mimaticMi</b>	

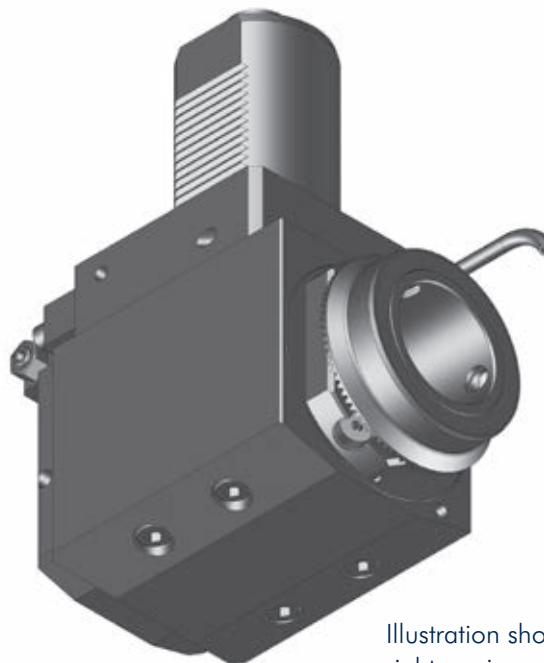
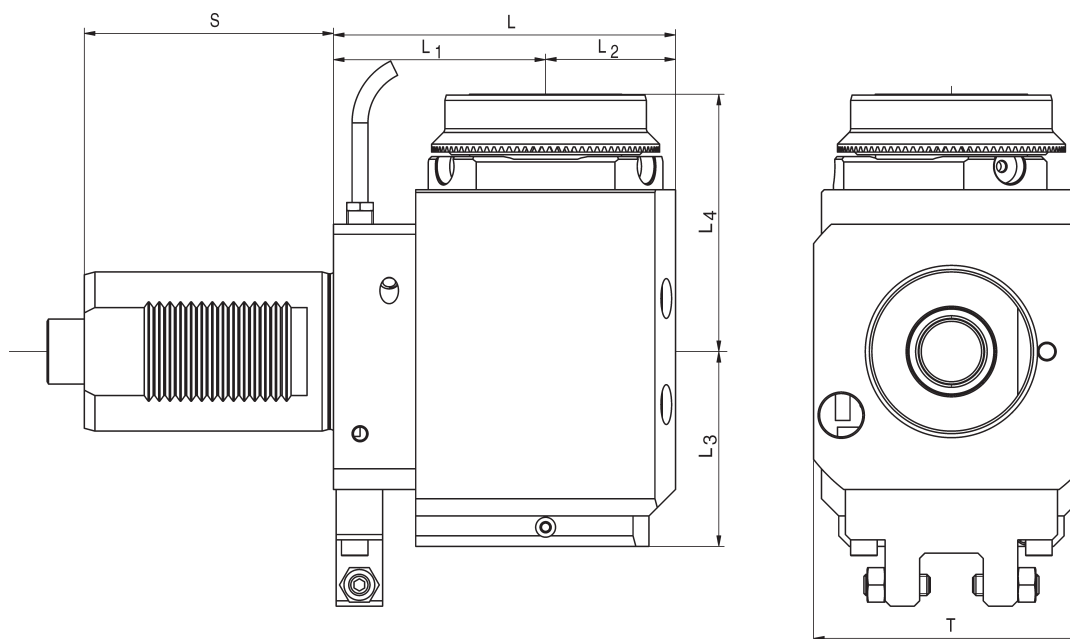


Illustration shows right version



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124537	ER 40	3,0-26	80 Nm	5.200 / 5.200	i = 1:1	external	135	85	50	69,0	107,5	94	100	↺ ↻
101453	ER 40*	3,0-26	80 Nm	6.000 / 6.000	i = 1:1	internal	129	80	49	73,5	107,5	94	100	↻ ↺
124823	mi 63	-	80 Nm	4.000 / 4.000	i = 1:1	internal	130	80	50	73,5	97,0	94	105	↺ ↻
Left version:														
133738	mi 63*	-	80 Nm	4.000 / 4.000	i = 1:1	internal	130	80	50	73,5	97,0	94	102	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Adjustable 0-100°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5482 (B 25 x 22)</b>	
Dimensions	
Revolver type	Disc-type Turret
Shank	VDI 60
Drive	DIN 5482 B 25 x 22 Z = 14 Ø 24,5 mm

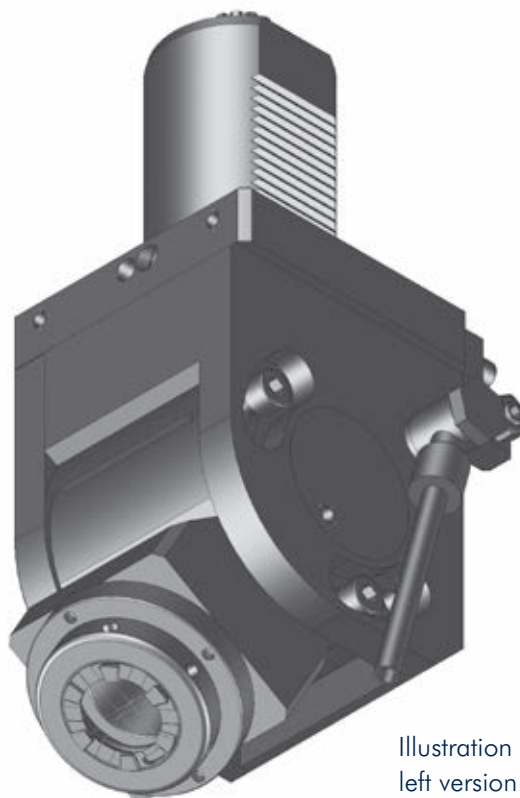
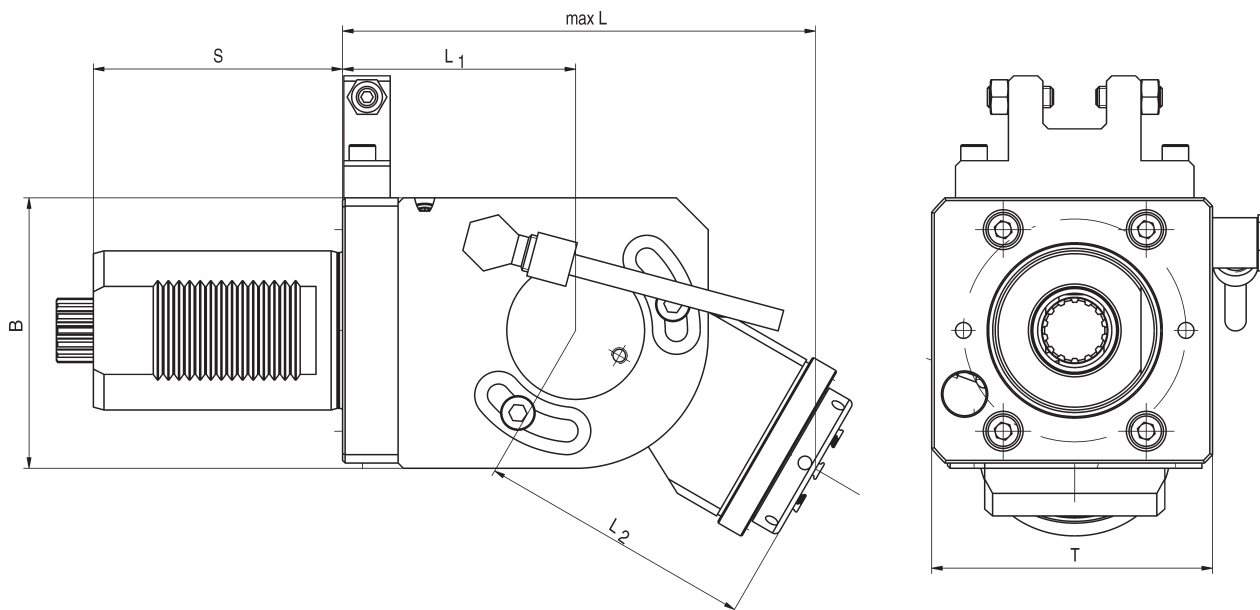


Illustration shows left version



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
<b>Right version:</b>													
175813	ER 32	1,0-20	35 Nm	6.000 / 6.000	i = 1:1	external	192,5	88	104,5	106	94	106	↻ ↻
<b>Left version:</b>													
169310	ER 32	1,0-20	35 Nm	6.000 / 6.000	i = 1:1	external	192,5	88	104,5	106	94	106	↻ ↻



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Sustainability Initiative



Picture shows a straight unit with ER 25 collet



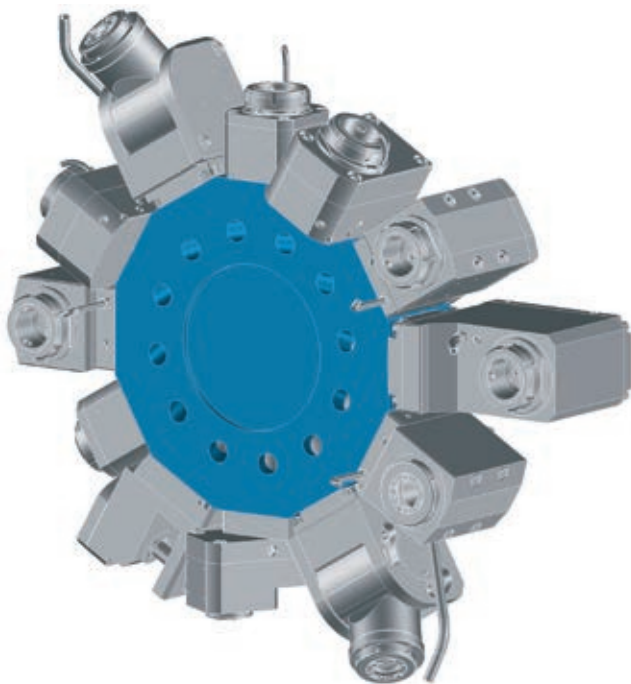
**DIN 5480 (W 16 x 0,8 x 30 x 18 / 9b)**

**Data**

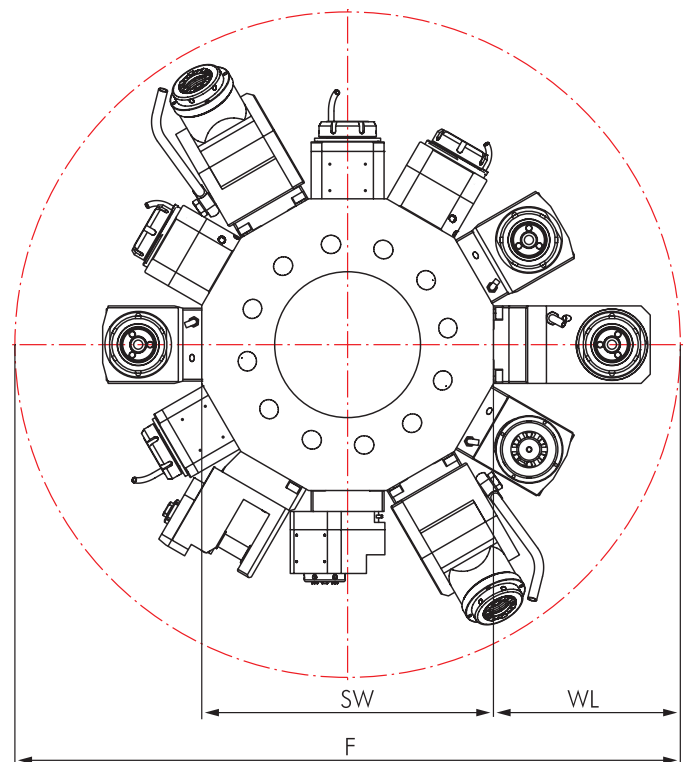
Star-type Turret	Turret Stations
<b>Drive</b>	<b>DIN 5480 (W16x0,8x30x18/9b)</b>



**Star-type Turret VDI 30**



**Interference Circles**



The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.



**DIN 5480 (W 16 x 0,8 x 30 x 18 / 9b)**

**Live Tools**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

	Page		Page
<b>Straight Unit</b>	402		
		<b>Angle Unit, 2-Axis</b>	407
			
<b>Angle Unit</b>	403-404		
		<b>Angle Unit, adjustable 0-100°</b>	408
			
<b>Angle Unit, Offset Type</b>	405-406		
		<b>Saw Blade Holder</b>	409
			

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for SAUTER</b>		Static Toolholders Accessories	511-515 516
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



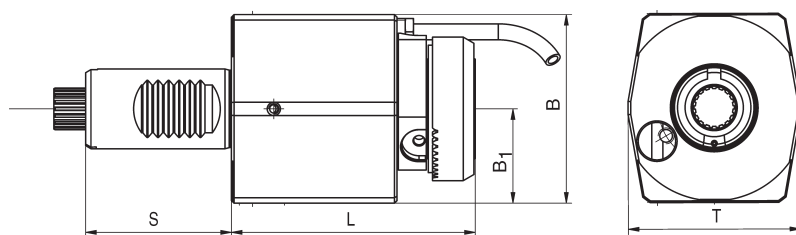
**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

## Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5480</b> <b>(W 16 x 0,8 x 30 x 18 / 9b)</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16x0,8x30x18 / 9b Ø 15,9 mm
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
133756	ER 25	0,5-16	40 Nm	6.500 / 6.500	i = 1:1	external	73	71	35	55	65	↺ ↻
133736	ER 25*	0,5-16	40 Nm	6.500 / 6.500	i = 1:1	internal	73	71	35	55	65	↺ ↻
133762	mi 40	-	40 Nm	6.500 / 6.500	i = 1:1	internal	92	71	35	55	65	↺ ↻

# Angle Unit, Right-hand Version

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer

**SAUTER**

with Drive

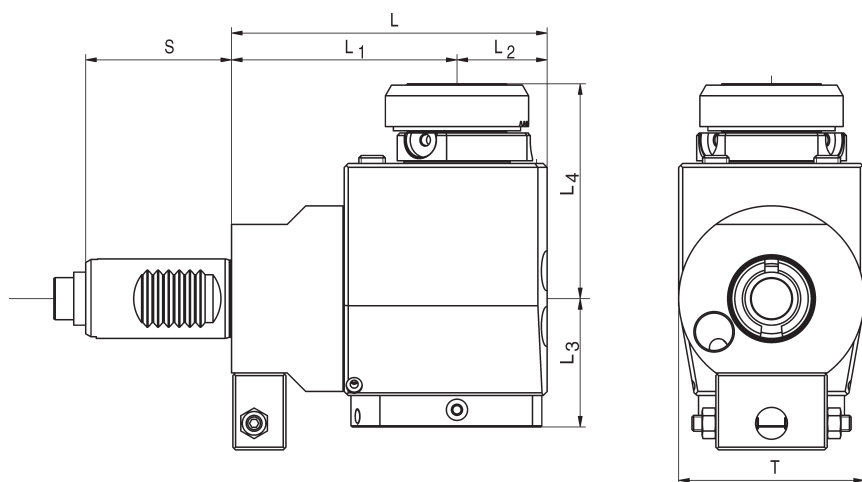
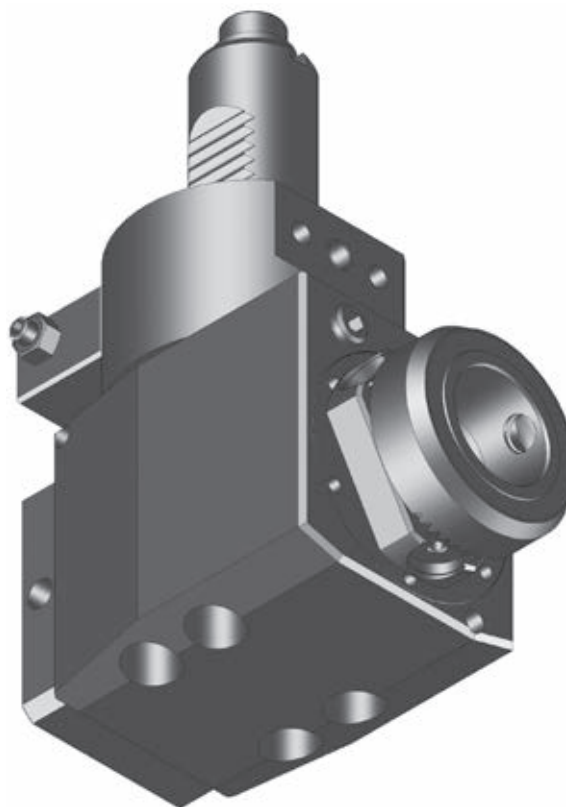
**DIN 5480**  
**(W 16 x 0,8 x 30 x 18 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16 x 0,8 x 30 x 18 / 9b Ø 15,9 mm

Modular Interfaces

**mimaticMi**



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103554	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	89	55	34	36,5	60,0	55	70	↺ ↻
103536	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	89	55	34	36,5	60,0	55	70	↻ ↺
168443	ER 25*	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	90	55	35	62,0	72,5	55	70	↻ ↺
171413**	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	119	85	34	36,5	60,0	55	70	↺ ↻
133739**	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	119	85	34	36,5	60,0	55	70	↻ ↺
133733**	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	119	85	34	48,5	81,0	55	70	↻ ↺
133771**	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	134	100	34	36,5	60,0	55	70	↺ ↻
133772**	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	134	100	34	36,5	60,0	55	70	↻ ↺
133764**	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	134	100	34	48,5	81,0	55	70	↻ ↺

\* With clamping nuts with sealing, seals see page 530

\*\* on request with precision adjustable unit

# Angle Unit, Left-hand Version

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer

**SAUTER**

with Drive

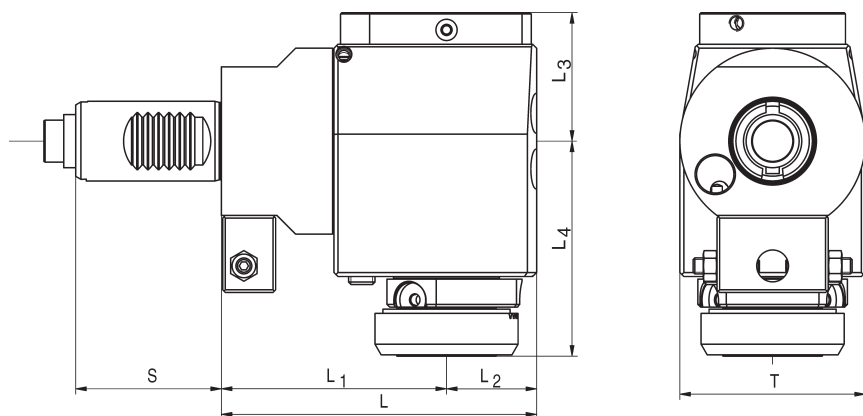
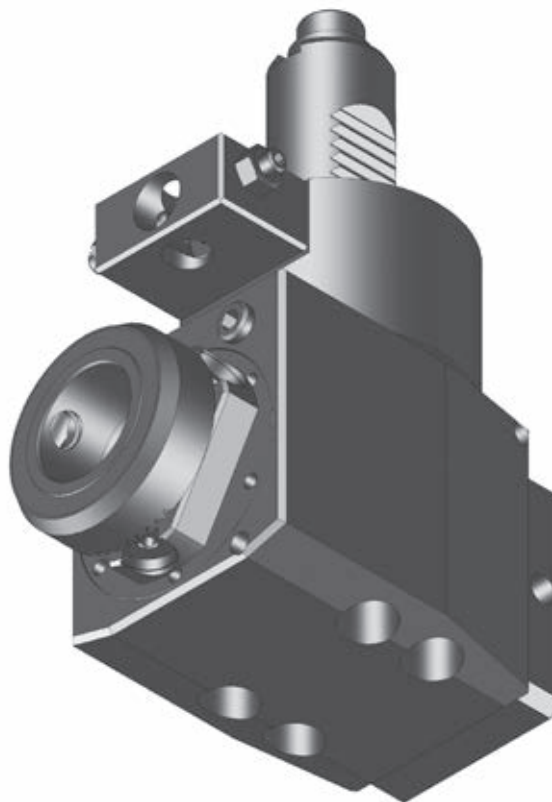
**DIN 5480  
(W 16 x 0,8 x 30 x 18 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16x0,8x30x18 / 9b Ø 15,9 mm

Modular Interfaces

**mimaticMi**

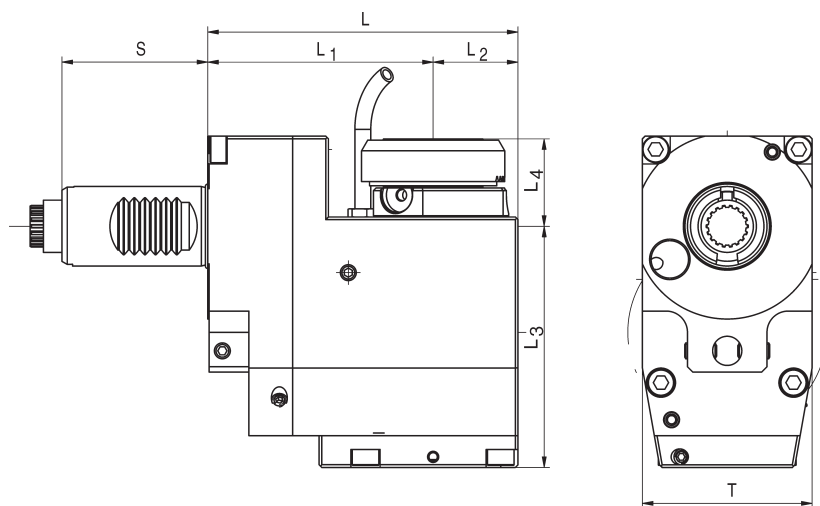
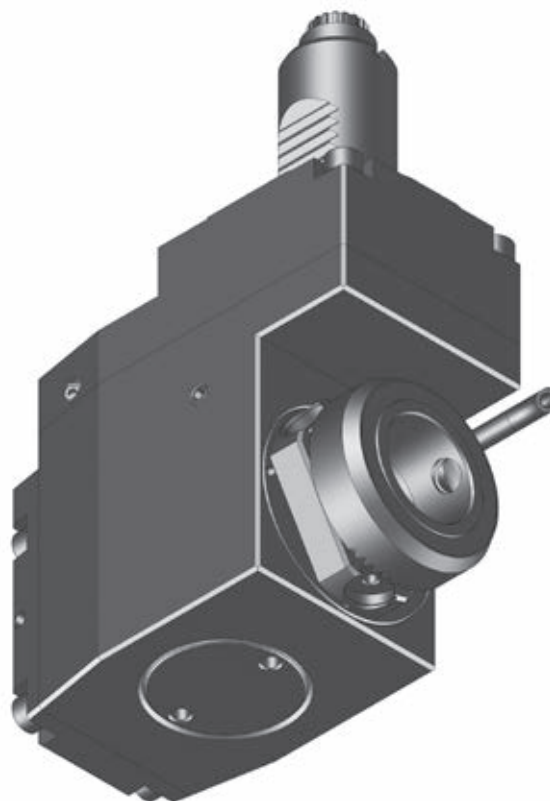


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103545	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	89	55	34	36,5	60,0	55	70	↺ ↻
103515	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	89	55	34	36,5	60,0	55	70	↻ ↺
133730**	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	119	85	34	36,5	60,0	55	70	↺ ↻
133731**	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	119	85	34	36,5	60,0	55	70	↻ ↺
133732**	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	119	85	34	48,4	81,0	55	70	↺ ↻
168324	ER 25	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	external	120	85	95	62,0	72,5	55	70	↺ ↻
168444	ER 25*	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	135	85	35	62,0	72,5	55	70	↻ ↺
133766**	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	external	134	100	34	48,0	81,0	55	70	↺ ↻
103507**	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	134	100	34	36,5	60,0	55	70	↺ ↻
133747**	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	134	100	34	36,5	60,0	55	70	↻ ↺
168325	ER 25	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	135	100	35	62,0	72,5	55	70	↺ ↻
168445	ER 25*	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	135	100	35	62,0	72,5	55	70	↻ ↺

# Angle Unit, Offset Type, Right-hand Version

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5480</b> <b>(W 16 x 0,8 x 30 x 18 / 9b)</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16 x 0,8 x 30 x 18 / 9b Ø 15,9 mm
Modular Interfaces	
<b>mimaticMi</b>	



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103539	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	117	85	32	91	15	55	64	↺ ↻
103555	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	117	85	32	91	15	55	64	↻ ↺
169187	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	117	85	32	91	33	55	64	↻ ↻
103546	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	132	100	32	91	15	55	64	↻ ↻
103547	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	132	100	32	91	15	55	64	↻ ↻

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Offset Type, Left-hand Version

for Turret Manufacturer



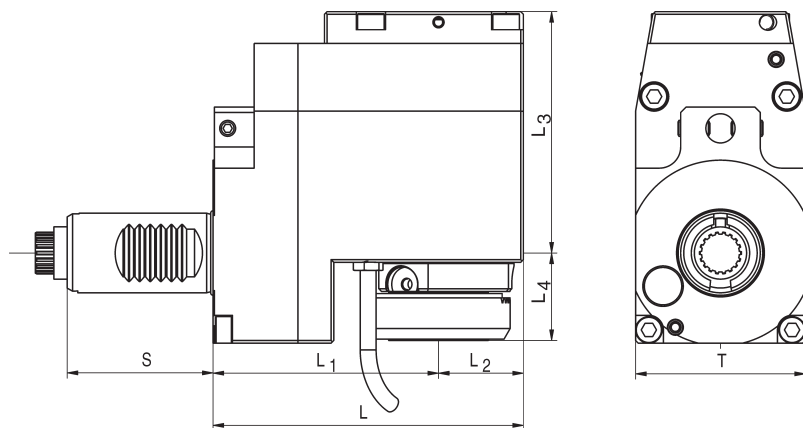
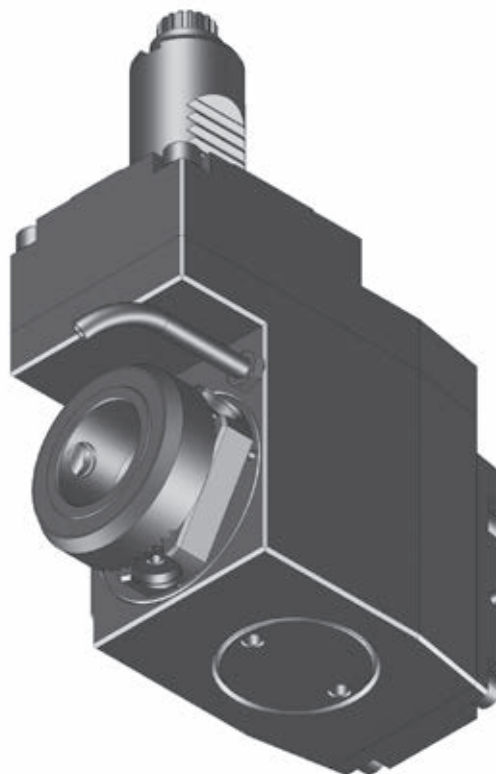
with Drive

**DIN 5480**  
**(W 16 x 0,8 x 30 x 18 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16 x 0,8 x 30 x 18 / 9b Ø 15,9 mm

Modular Interfaces

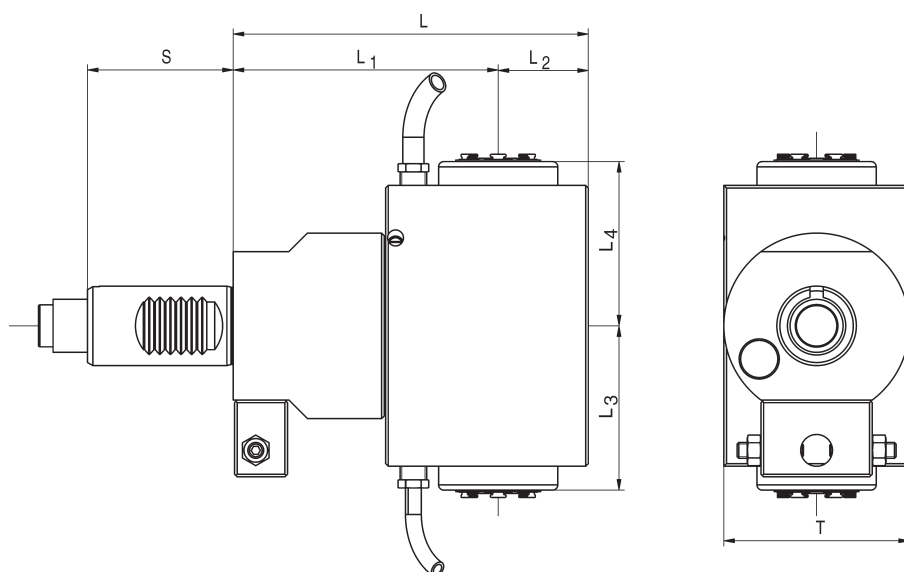
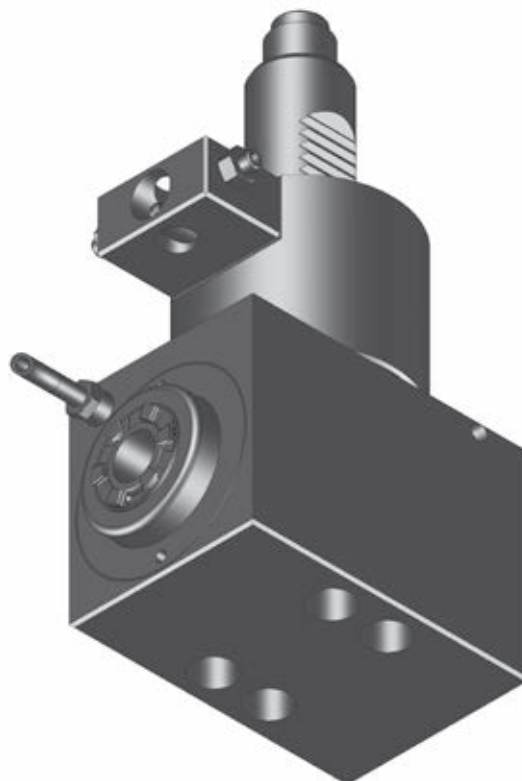
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
103526	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	117	85	32	91	20	55	64	↺ ↻
103565	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	117	85	32	91	20	55	64	↻ ↺
169191	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	117	85	32	91	33	55	64	↻ ↺
103551	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	132	100	32	91	20	55	64	↺ ↻
103517	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	132	100	32	91	20	55	64	↻ ↺



# Angle Unit, 2-Axis

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5480</b> <b>(W 16 x 0,8 x 30 x 18 / 9b)</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16 x 0,8 x 30 x 18 / 9b Ø 15,9 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm
103622*	2x ER 25	0,5-16	20 Nm	6.500 / 6.500	i = 1:1	external	119	85	34	62	62	55	70
103556**	2x ER 25	0,5-16	20 Nm	6.500 / 6.500	i = 1:1	external	134	100	34	62	62	55	70

\* with precision adjustable unit PIN Ø 8 mm

\*\* on request with precision adjustable unit

# Angle Unit, Adjustable 0-100°

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Turret Manufacturer

**SAUTER**

with Drive

**DIN 5480**  
**(W 16 x 0,8 x 30 x 18 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16x0,8x30x18 / 9b Ø 15,9 mm

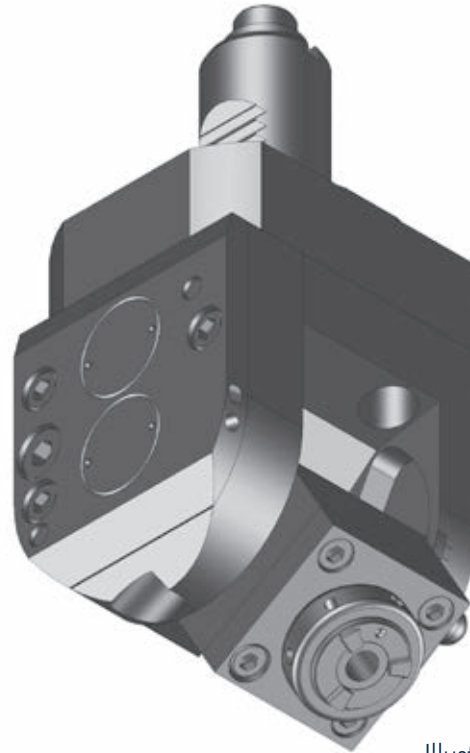
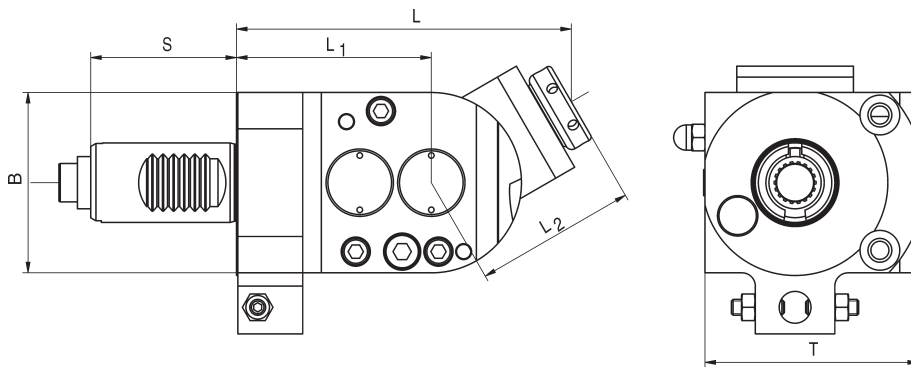


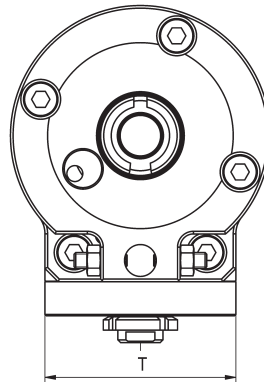
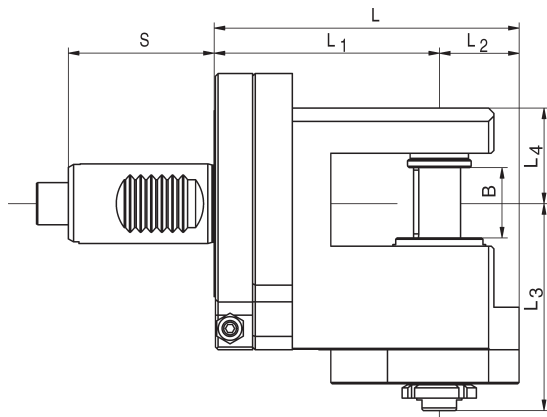
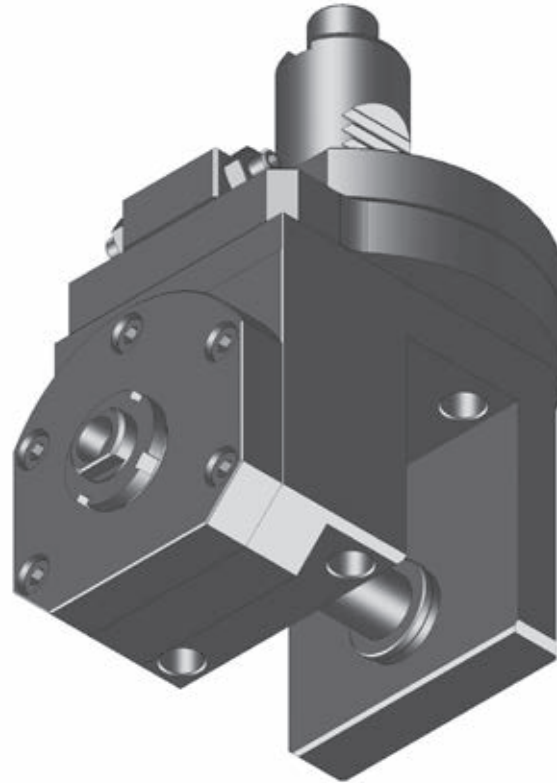
Illustration shows right version



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
Right version:													
103566	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	138	73,5	64,5	68	55	80,5	↻ ↻
Left version:													
125008	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	138	73,5	64,5	68	55	80,5	↻ ↻

# Saw Blade Holder

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5480</b> <b>(W 16 x 0,8 x 30 x 18 / 9b)</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 30
Drive	DIN 5480 with spindle orientation detent W 16x0,8x30x18 / 9b Ø 15,9 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
133767*	16	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	30	78	36	25	55	104

\* Saw blade diameter max. = 80 mm



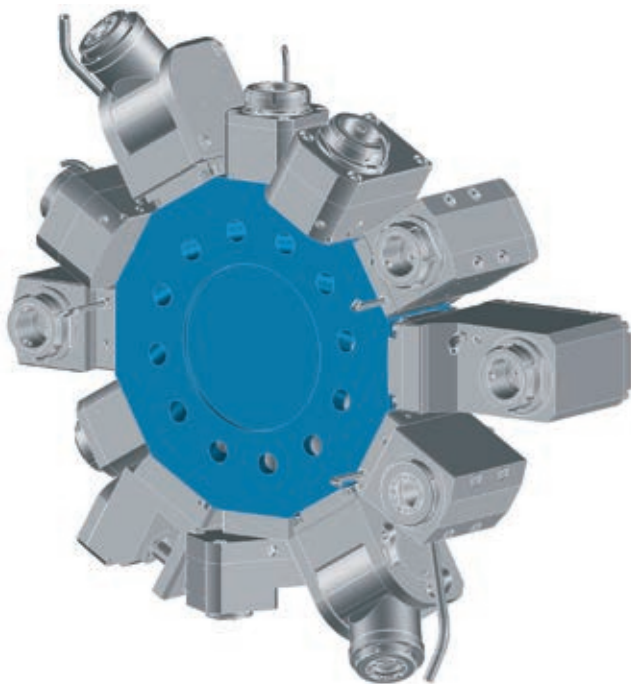
**DIN 5480 (W 20 x 0,8 x 30 x 24 / 9b)**

**Data**

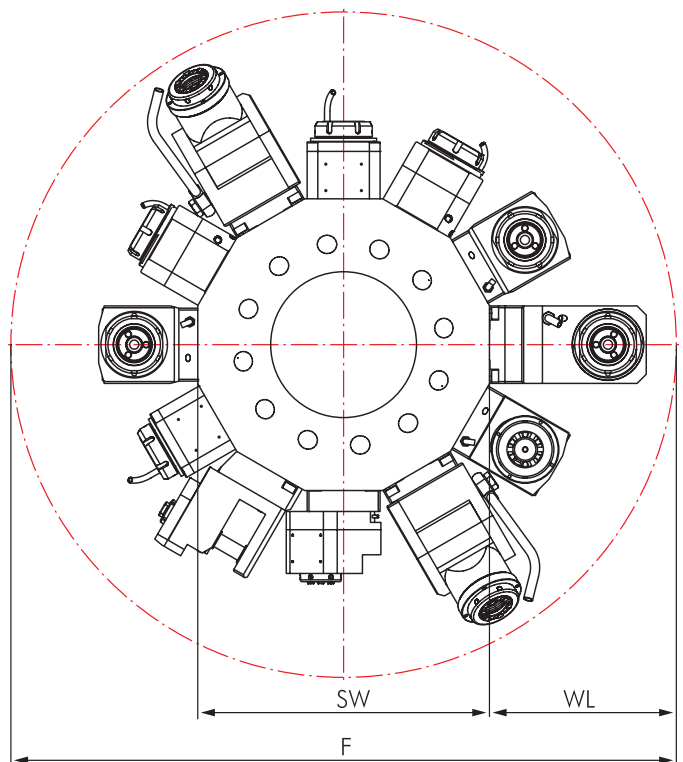
Star-type Turret	Turret Stations
<b>Drive</b>	<b>DIN 5480 (W20x0,8x30x24/9b)</b>



**Star-type Turret VDI 40**



**Interference Circles**



The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.



**DIN 5480 (W 20 x 0,8 x 30 x 24 / 9b)**

**Live Tools**

	Page		Page
<b>Straight Unit</b>	412	<b>Angle Unit, 2-Axis</b>	417
<b>Angle Unit</b>	413-414	<b>Angle Unit, adjustable 0-100°</b>	418
<b>Angle Unit, Offset Type</b>	415-416	<b>Saw Blade Holder</b>	419

**Options and Accessories**

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Static Toolholders for SAUTER</b>		Static Toolholders Accessories	511-515 516
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



**Delivery information**

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer



with Drive

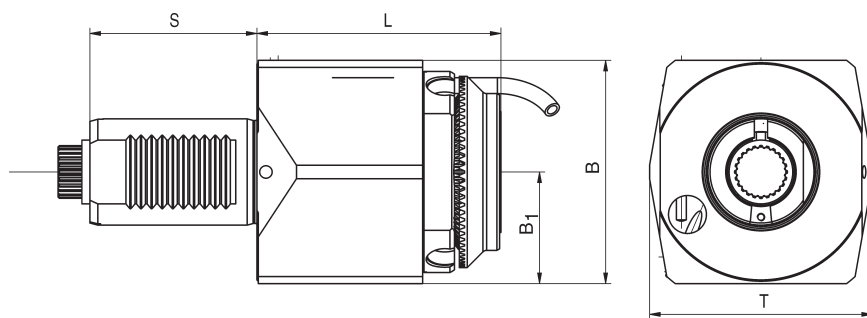
**DIN 5480**  
**(W 20 x 0,8 x 30 x 24 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 40
Drive	DIN 5480 with spindle orientation detent W 20x0,8x30x24 / 9b Ø 19,84 mm

Modular Interfaces

**mimaticMi**  
**HydroFLEX**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
133778	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	80	80	40	63	80	↺ ↻
133740	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	80	89	40	63	80	↺ ↻
133743	mi 50	0,5-20	80 Nm	6.500 / 6.500	i = 1:1	internal	92	84	42	63	84	↺ ↻
124161	HF 20	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	83	89	40	63	80	↺ ↻

# Angle Unit, Right-hand Version

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer

**SAUTER**

with Drive

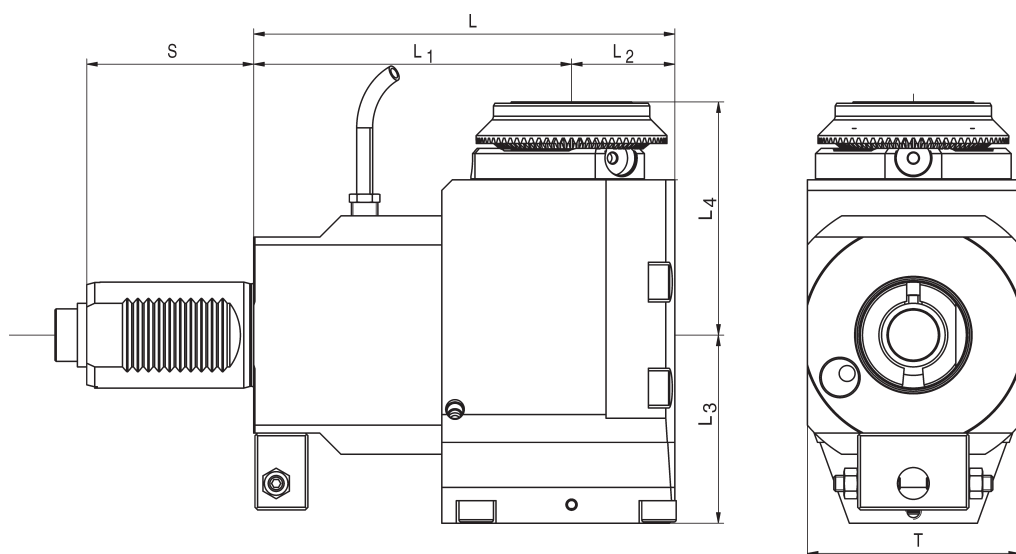
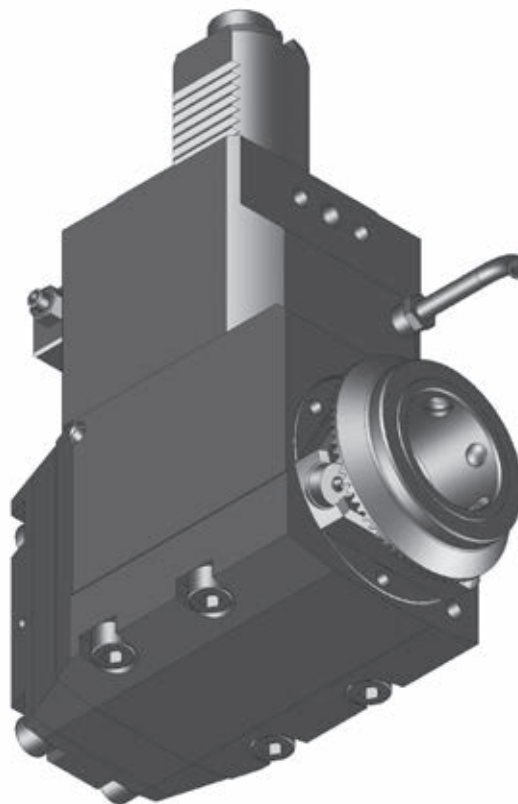
**DIN 5480**  
**(W 20 x 0,8 x 30 x 24 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 40
Drive	DIN 5480 with spindle orientation detent W 20x0,8x30x24 / 9b Ø 19,84 mm

Modular Interfaces

**mimaticMi**  
**HydroFLEX**



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
133765**	ER 32	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	external	139	100	39	69,0	70	63	85	↺ ↻
133780**	ER 32*	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	internal	139	100	39	75,5	70	63	85	↺ ↻
133754**	mi 50	-	80 Nm	5.400 / 5.400	i = 1:1	internal	139	100	43	75,5	88	63	80	↺ ↻
133802	HF 20	6,0-20	20 Nm	6.500 / 13.000	i = 1:2	internal	139	100	39	72,5	92	63	85	↺ ↻
133748**	ER 32	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	external	159	120	39	69,0	70	63	85	↺ ↻
133773**	ER 32*	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	internal	159	120	39	75,5	70	63	85	↺ ↻
133757**	mi 50	-	80 Nm	5.400 / 5.400	i = 1:1	internal	163	120	43	75,5	88	63	80	↺ ↻
101568	ER 25*	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	159	120	39	72,5	75	63	85	↺ ↻

\* With clamping nuts with sealing, seals see page 530

\*\* on request with precision adjustable unit

# Angle Unit, Left-hand Version

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer

**SAUTER**

with Drive

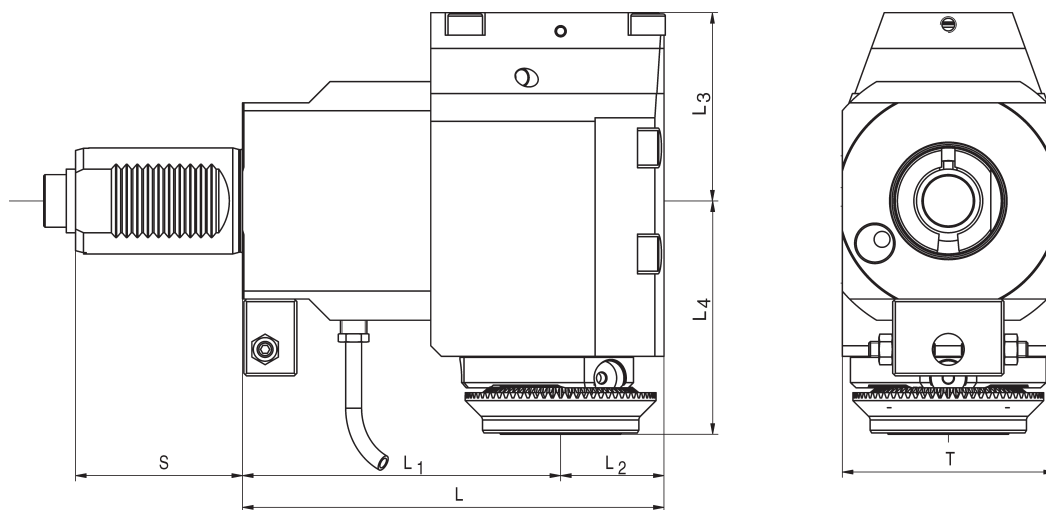
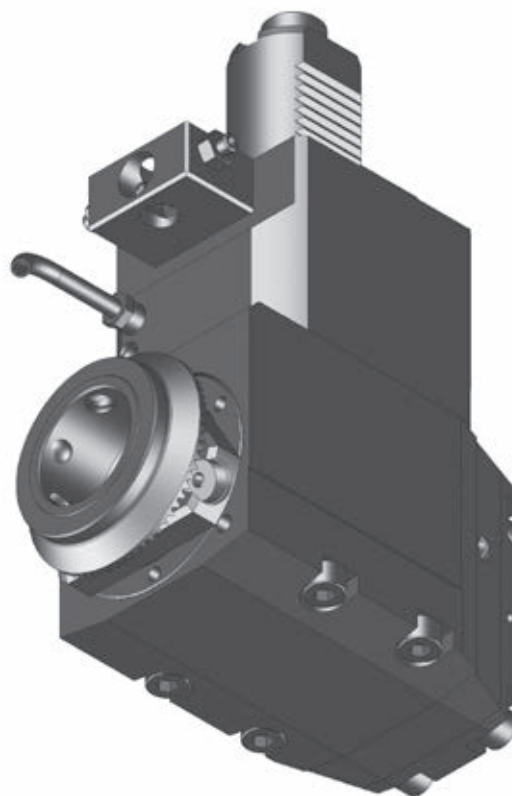
**DIN 5480**  
**(W 20 x 0,8 x 30 x 24 / 9b)**

Dimensions

Revolver type      Star-type Turret  
Shank                VDI 40  
Drive                 DIN 5480  
                          with spindle orientation  
                          detent  
                          W 20x0,8x30x24 / 9b  
                          Ø 19,84 mm

Modular Interfaces

**mimaticMi**  
**HydroFLEX**




Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
133741**	ER 32	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	external	139	100	39	69,0	70	63	85	↺ ↻
133779**	ER 32*	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	internal	139	100	39	75,5	70	63	85	↺ ↻
133744**	mi 50	-	80 Nm	5.400 / 5.400	i = 1:1	internal	143	100	43	75,5	88	63	80	↺ ↻
133802**	HF 20	6,0-20	20 Nm	6.500 / 13.000	i = 1:2	internal	139	100	39	72,5	92	63	85	↺ ↻
103561**	ER 32	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	external	159	120	39	69,0	70	63	85	↺ ↻
133776**	ER 32*	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	internal	159	120	39	75,5	70	63	85	↺ ↻
133768**	mi 50	-	80 Nm	5.400 / 5.400	i = 1:1	internal	163	120	43	75,5	88	63	80	↺ ↻
177075**	ER 25	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	159	120	39	72,5	75	63	85	↺ ↻



# Angle Unit, Offset Type, Right-hand Version

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer




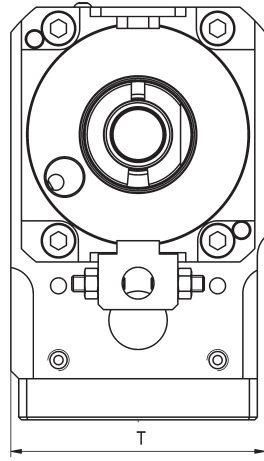
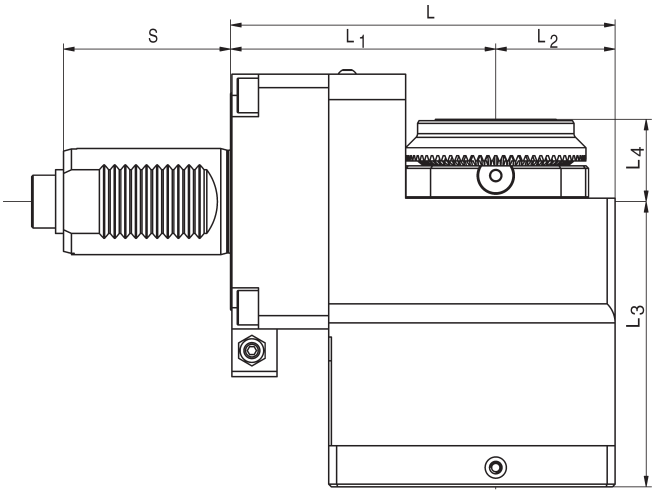
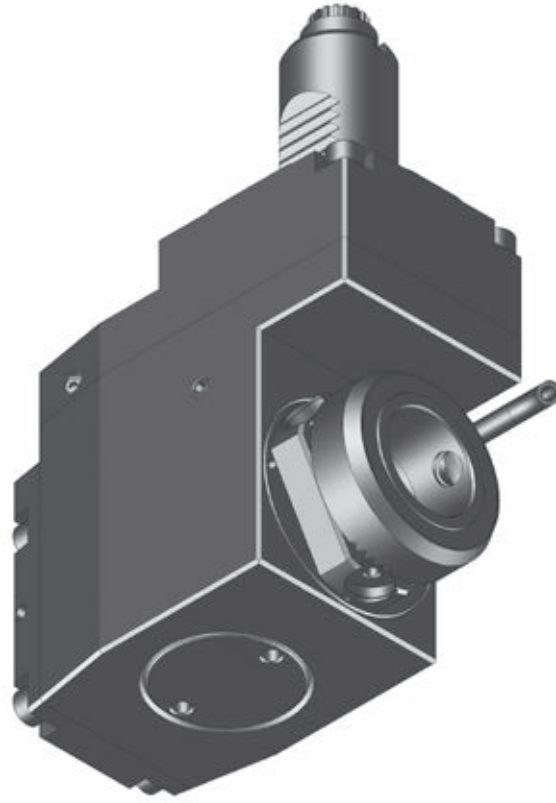
with Drive

**DIN 5480**  
**(W 20 x 0,8 x 30 x 24 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 40
Drive	DIN 5480 with spindle orientation detent W 20x0,8x30x24 / 9b Ø 19,84 mm

Modular Interfaces

13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
133759	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	142	100	42	111,0	20	63	85	↺ ↻
133774	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	142	100	42	111,0	20	63	85	↻ ↺
133782**	mi 50	-	80 Nm	4.000 / 4.000	i = 1:1	internal	145	100	45	107,5	31	63	96	↻ ↺
103552	ER 32	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	external	162	120	42	111,0	20	63	85	↺ ↻
103540	ER 32*	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	internal	162	120	42	111,0	20	63	85	↻ ↺
103553**	mi 50	-	80 Nm	4.000 / 4.000	i = 1:1	internal	165	120	45	107,5	31	63	96	↻ ↺

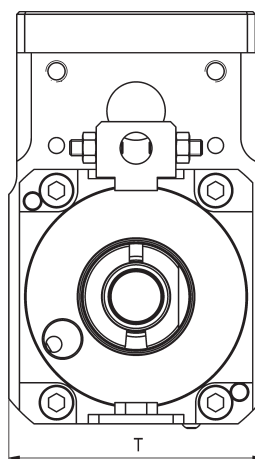
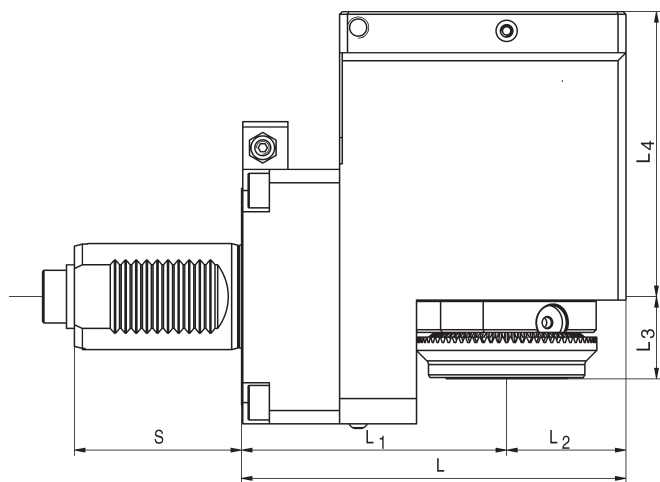
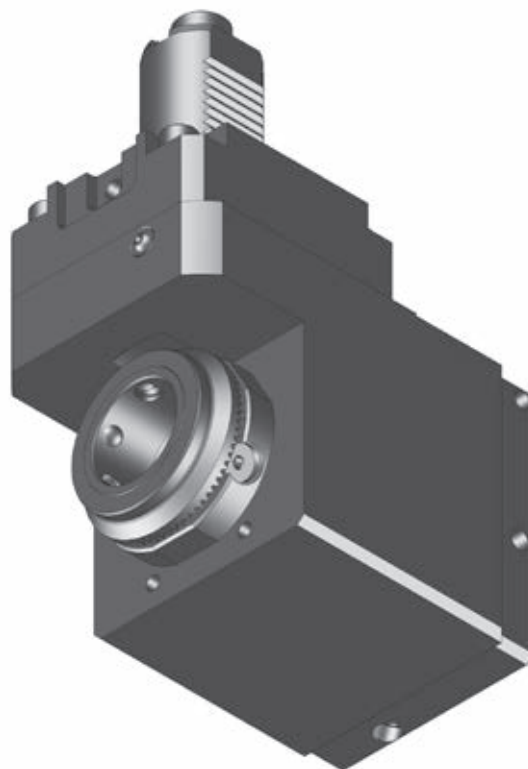
\* With clamping nuts with sealing, seals see page 530

\*\* on request with precision adjustable unit

# Angle Unit, Offset Type, Left-hand Version

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5480</b> <b>(W 20 x 0,8 x 30 x 24 / 9b)</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 40
Drive	DIN 5480 with spindle orientation detent W 20x0,8x30x24 / 9b Ø 19,84 mm
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
133781	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	142	100	42	111,0	20	63	85	↺ ↻
133758	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	142	100	42	111,0	20	63	85	↻ ↺
103572**	mi 50	-	80 Nm	4.000 / 4.000	i = 1:1	internal	145	100	45	107,5	31	63	96	↻ ↺
103567	ER 32	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	external	162	120	42	111,0	20	63	85	↻ ↺
103548	ER 32*	1,0-20	80 Nm	5.400 / 5.400	i = 1:1	internal	162	120	42	111,0	20	63	85	↺ ↻
103584**	mi 50	-	80 Nm	4.000 / 4.000	i = 1:1	internal	165	120	45	107,5	31	63	96	↻ ↺

# Angle Unit, 2-Axis

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Turret Manufacturer

**SAUTER**

with Drive

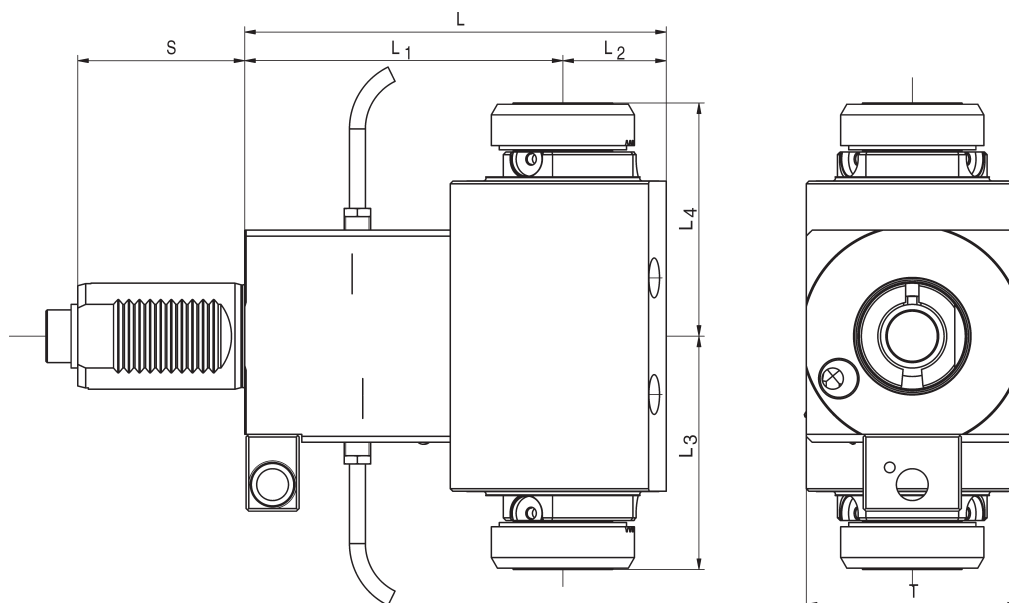
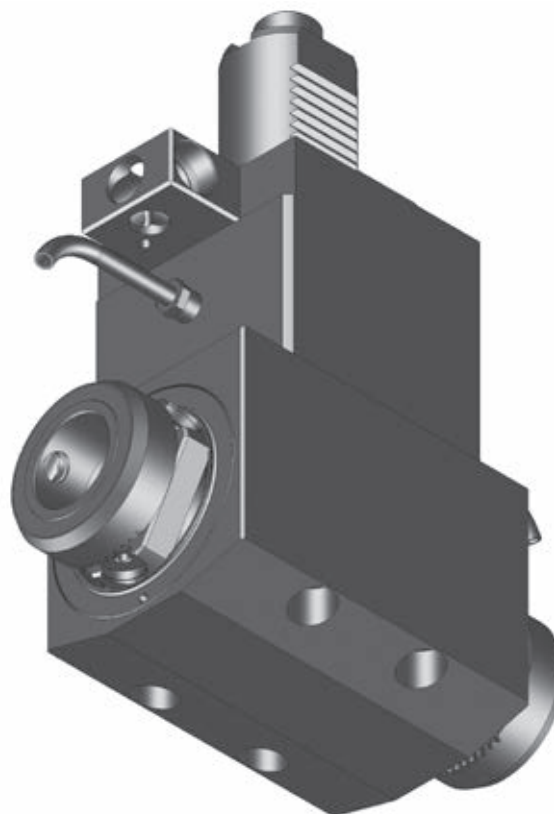
**DIN 5480**  
**(W 20 x 0,8 x 30 x 24 / 9b)**

Dimensions

Revolver type      Star-type Turret  
Shank                VDI 40  
Drive                 DIN 5480  
                          with spindle orientation  
                          detent  
                          W 20x0,8x30x24 / 9b  
                          Ø 19,84 mm

Modular Interfaces

**mimaticMi**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm
103585*	2x ER 25	0,5-16	20 Nm	6.500 / 6.500	i = 1:1	external	154	120	39	62	62	63	70
103593*	2x mi 40	-	50 Nm	6.500 / 6.500	i = 1:1	external	154	120	39	88	88	63	70

\* with precision adjustable unit PIN Ø 8 mm

# Angle Unit, Adjustable 0-100°

Connectable in accordance with **BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Turret Manufacturer	
<b>SAUTER</b>	
with Drive	
<b>DIN 5480</b> <b>(W 20 x 0,8 x 30 x 24 / 9b)</b>	
Dimensions	
Revolver type	Star-type Turret
Shank	VDI 40
Drive	DIN 5480 with spindle orientation detent W 20x0,8x30x24 / 9b Ø 19,84 mm

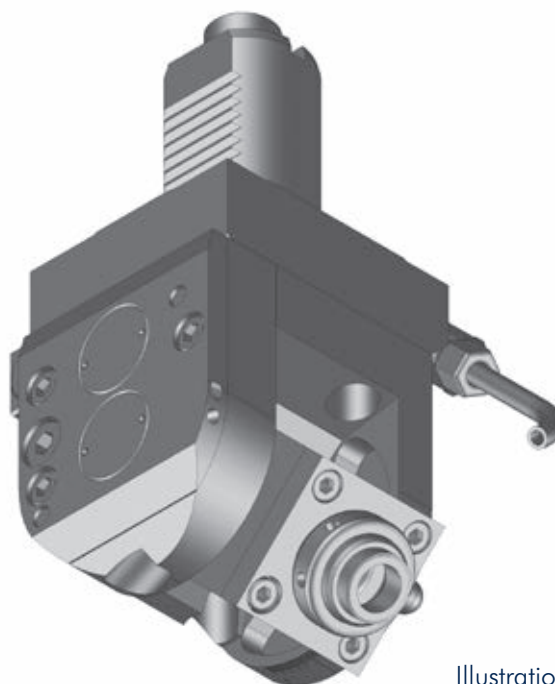
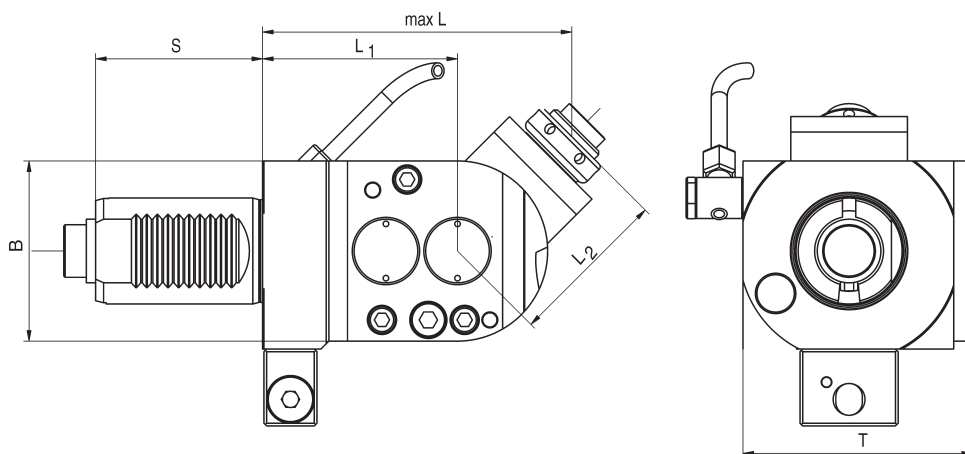


Illustration show right version



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
103541**	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	134,5	73,5	61	68	63	80,5	↻ ↻
125010	ER 25	1,0-16	35 Nm	6.000 / 6.000	i = 1:1	external	178,0	88,0	93	102	63	96,0	↻ ↻

# Saw Blade Holder

for Turret Manufacturer

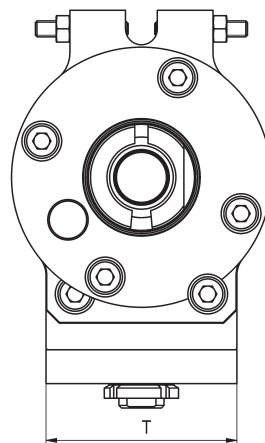
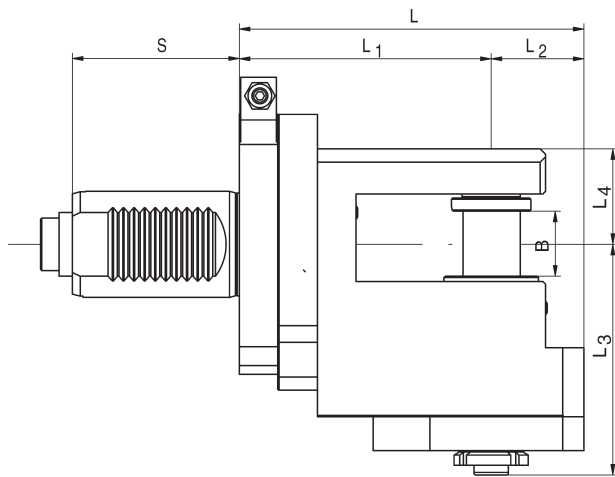
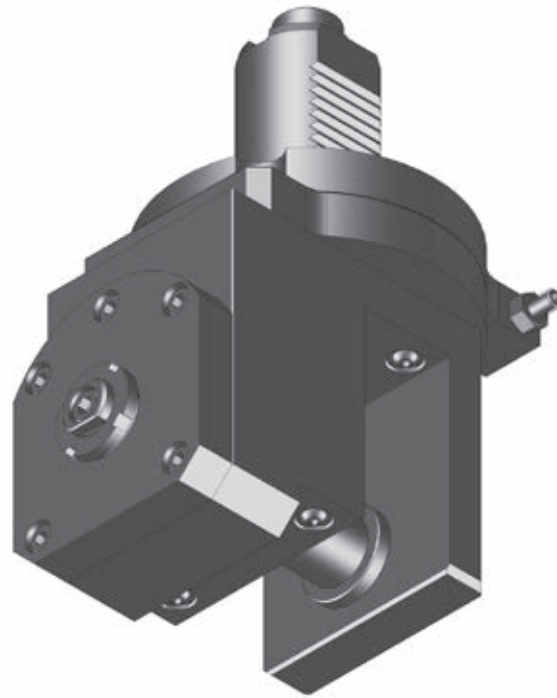
**SAUTER**

with Drive

**DIN 5480**  
**(W 20 x 0,8 x 30 x 24 / 9b)**

Dimensions

Revolver type	Star-type Turret
Shank	VDI 40
Drive	DIN 5480 with spindle orientation detent W 20x0,8x30x24 / 9b Ø 19,84 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
133749*	22	40 Nm	6.500 / 2.450	i = 2,66:1	external	130	95	35	87,5	36	25	63	72

\* Saw blade diameter max. = 100 mm



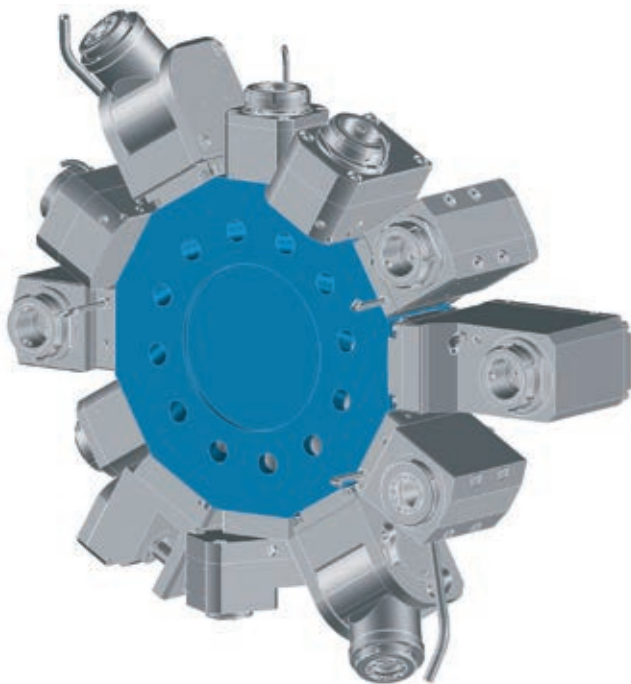
**VL 3/5 + VSC 200/250**

**Data**

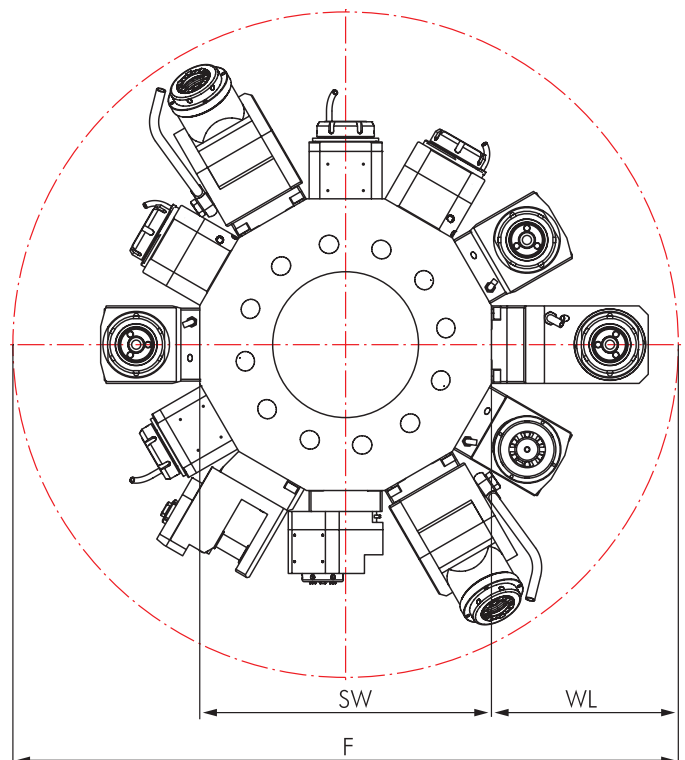
Machine type Series		Turret Stations
<b>VL</b>	<b>3</b>	12
<b>VL</b>	<b>5</b>	12
<b>VSC</b>	<b>200</b>	12
<b>VSC</b>	<b>250</b>	12



**Star-type Turret VDI 40**



**Interference Circles**



Machine type Series	F	SW	WL
<b>VL 3/5</b>	700	360	170
<b>VSC 200</b>	740	360	190
<b>VSC 250</b>	760	360	200



**VL 3/5 + VSC 200/250**

Connectable in accordance with  
**BLUECOMPETENCE**

» mimatic mi  
» PolyMILL » TriMILL » TrioCut » PolyREAM

## Live Tools

	Page		Page
<b>Straight Unit</b>	422	<b>Angle Unit, Offset Type</b>	425
<b>Straight Unit, Offset Type</b>	423	<b>Angle Unit, adjustable 0-100°</b>	426
<b>Angle Unit</b>	424	<b>Saw Blade Holder</b>	427

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



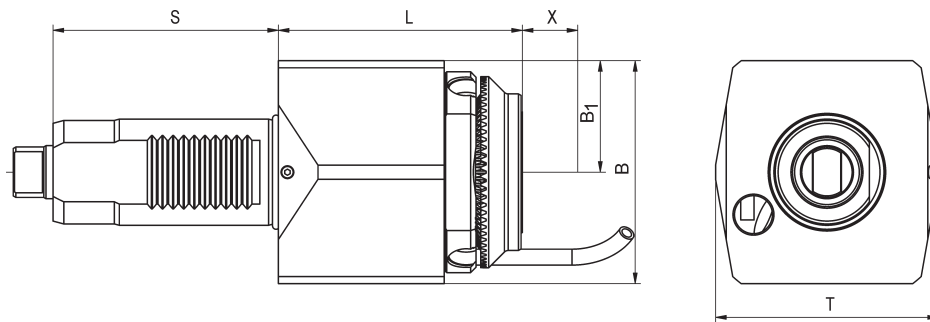
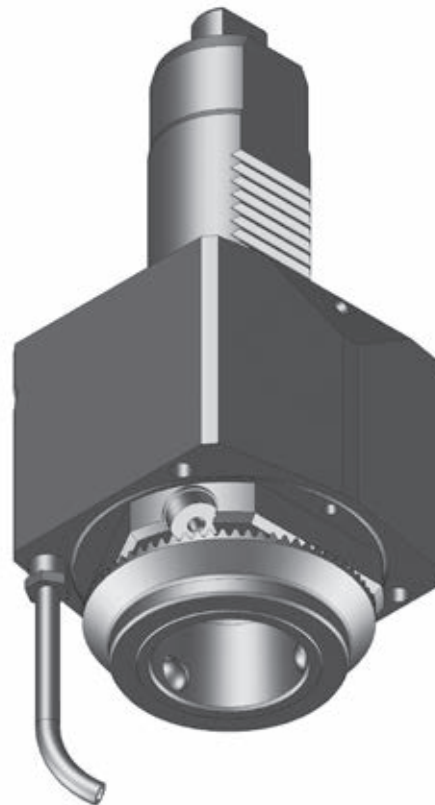
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
	
for Machine type	
<b>VL 3/5</b> <b>VSC 200/250</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10,95 mm
Modular Interfaces	
<b>mimaticMi</b> <b>HydroFLEX</b>	



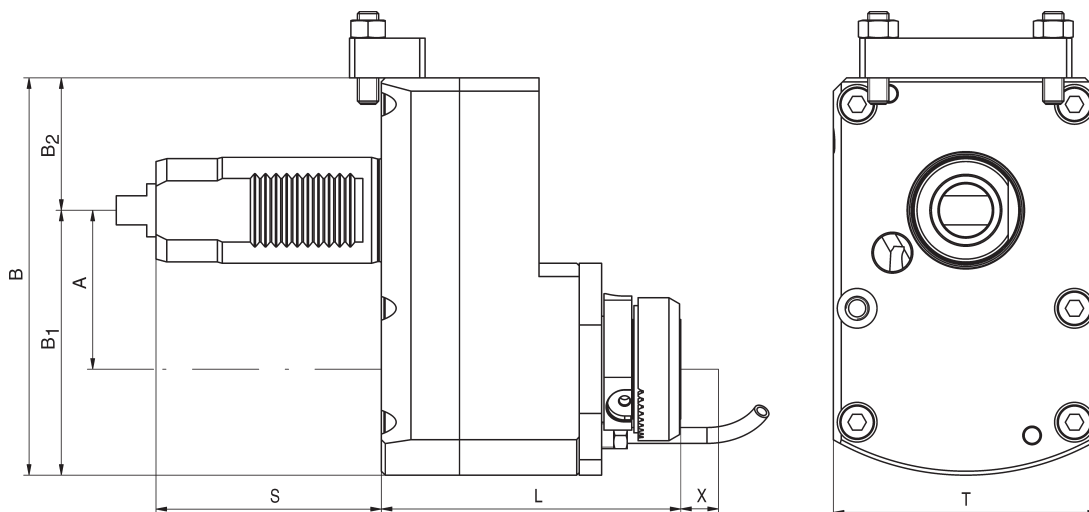
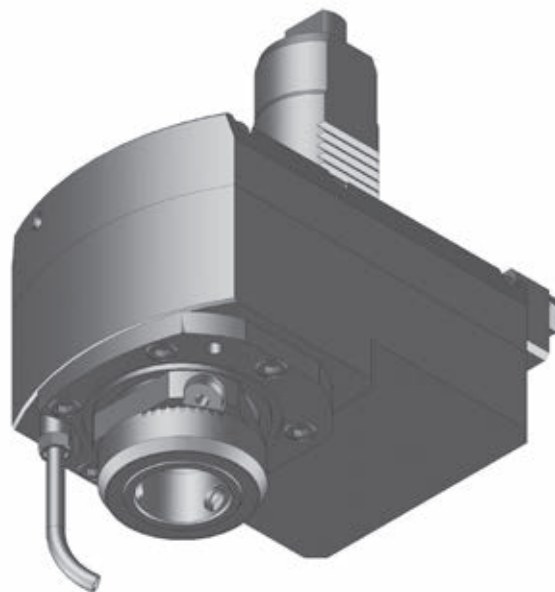
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
123916	ER 32	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	external	80	80	40	85	89	↻ ↻
124305	ER 32*	1,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	80	80	40	85	89	↻ ↻
124315	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92	84	42	85	84	↻ ↻
124311	mi 40	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92	84	42	85	84	↻ ↻
124285	HF 20	6,0-20	80 Nm	6.500 / 6.500	i = 1:1	internal	85	80	40	85	89	↻ ↻
123947	ER 25	0,5-16	50 Nm	5.000 / 10.000	i = 1:2	external	155	90	40	85	120	↻ ↻



# Straight Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
	
for Machine type	
<b>VL 3/5</b> <b>VSC 200/250</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10,95 mm
Modular Interfaces	
<b>mimaticMi</b> <b>HydroFLEX</b>	



13

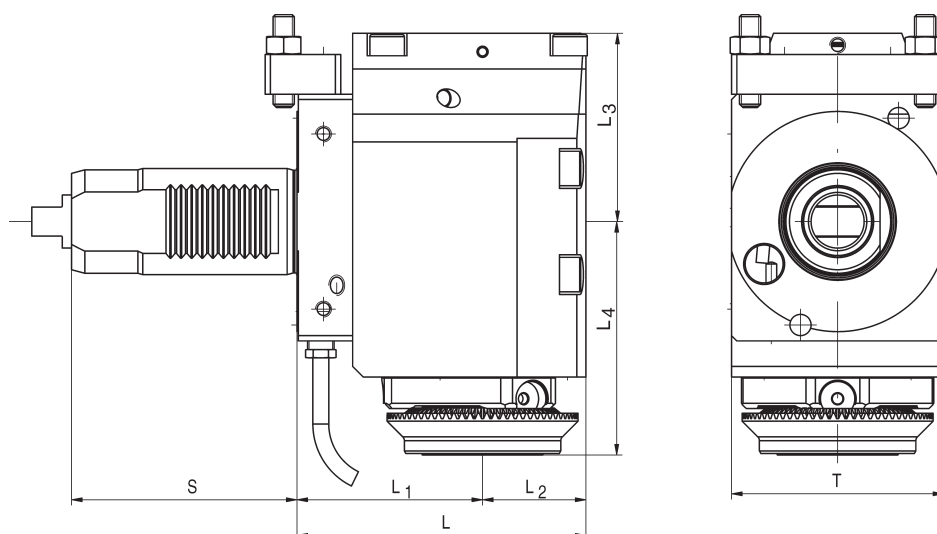
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	A mm	B mm	B1 mm	B2 mm	S mm	T mm	Rotating direction
124069	ER 25	0,5-16	50 Nm	5.000 / 10.000	i = 1:2	external	94,0	60	150	100	50	85	100	↺ ↻
123720	ER 25*	0,5-16	50 Nm	6.000 / 12.000	i = 1:2	internal	94,0	60	150	100	50	85	100	↺ ↻
123716	HF 20	-	40 Nm	6.000 / 12.000	i = 1:2	internal	105,5	60	150	100	50	85	100	↺ ↻
124077	ER 16	0,5-10	50 Nm	6.000 / 18.000	i = 1:3	external	87,0	60	140	90	50	85	100	↺ ↻
123736	mi 40	-	40 Nm	3.400 / 10.200	i = 1:3	internal	113,0	60	150	100	50	85	100	↺ ↻

\* With clamping nuts with sealing, seals see page 530

# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM


for Manufacturer	
	
for Machine type	
<b>VL 3/5</b> <b>VSC 200/250</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10,95 mm
Modular Interfaces	
<b>mimaticMi</b> <b>HydroFLEX</b>	

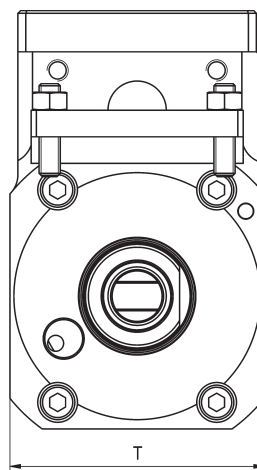
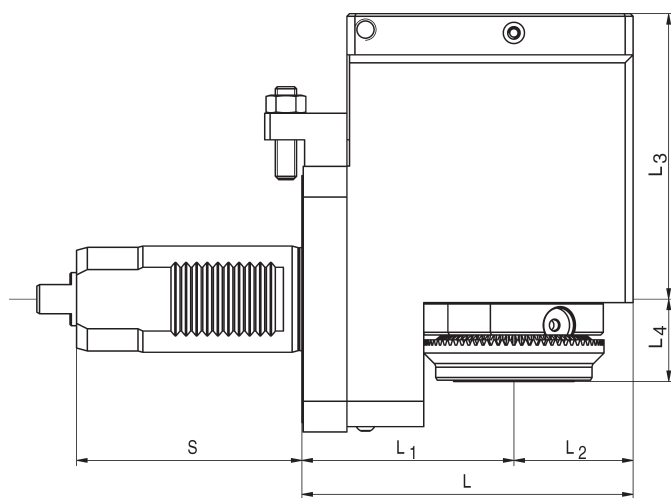
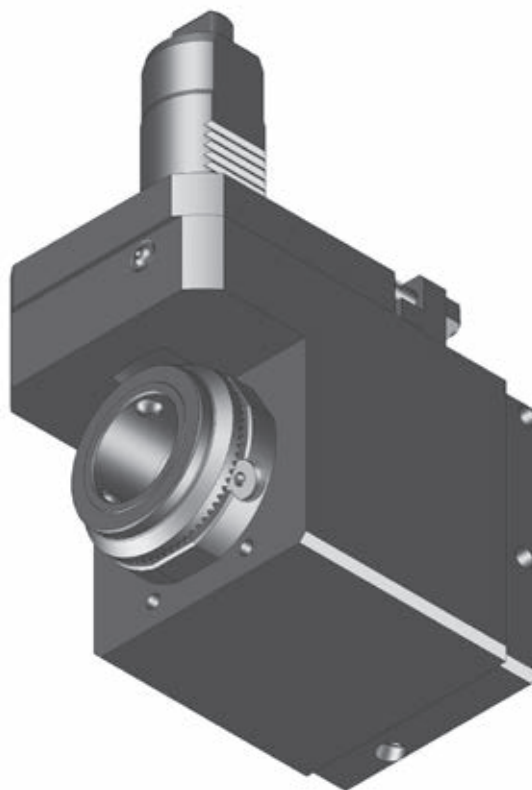


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124659	ER 32	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	external	113	70	43	71,0	70	85	80	↺ ↻
124894	ER 32*	1,0-20	50 Nm	6.500 / 6.500	i = 1:1	internal	110	70	40	75,5	70	85	85	↺ ↻
124896	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	113	70	43	71,0	88	85	80	↺ ↻
124892	HF 20	6,0-20	50 Nm	5.200 / 5.200	i = 1:1	internal	110	70	40	75,5	82	85	85	↺ ↻
124924	ER 25*	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	110	70	40	73,5	75	85	80	↺ ↻
124922	HF 20	6,0-20	20 Nm	6.000 / 12.000	i = 1:2	internal	109	70	39	72,5	92	85	80	↺ ↻



# Angle Unit, Offset Type

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
	
for Machine type	
<b>VL 3/5</b> <b>VSC 200/250</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10,95 mm




13

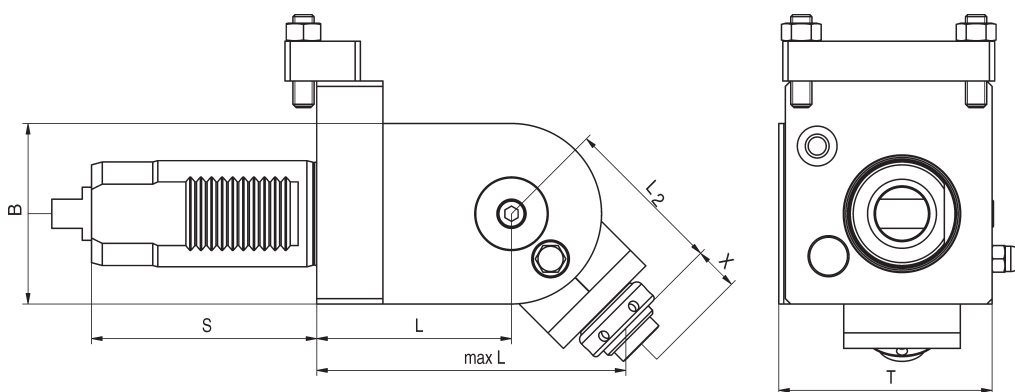
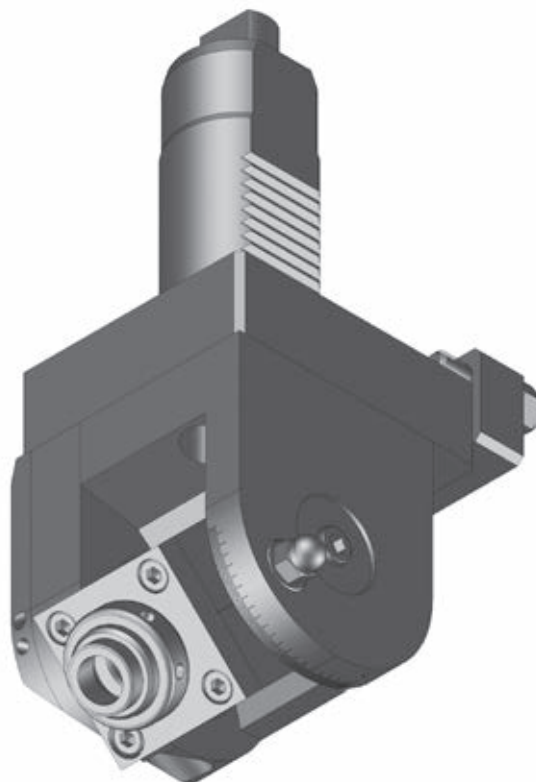
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124757	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	117	75	42	110,0	20	85	84	
124897	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	117	75	42	110,0	20	85	84	

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Adjustable 0-100°


Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

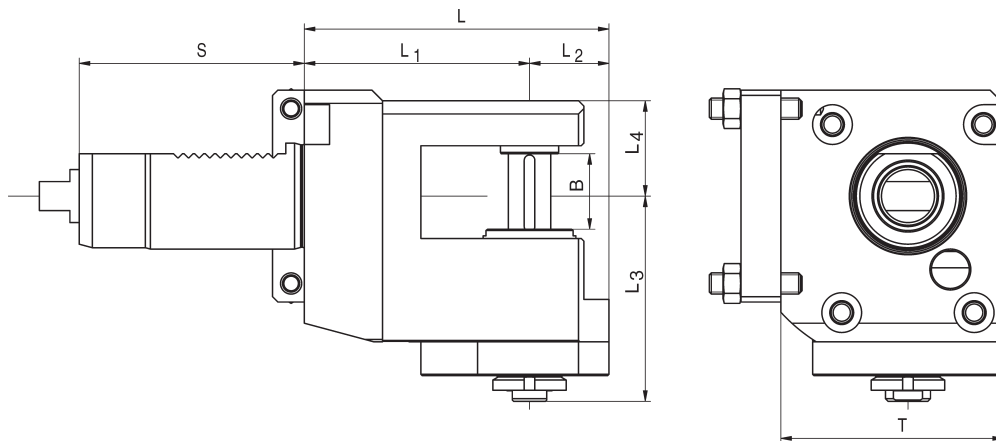
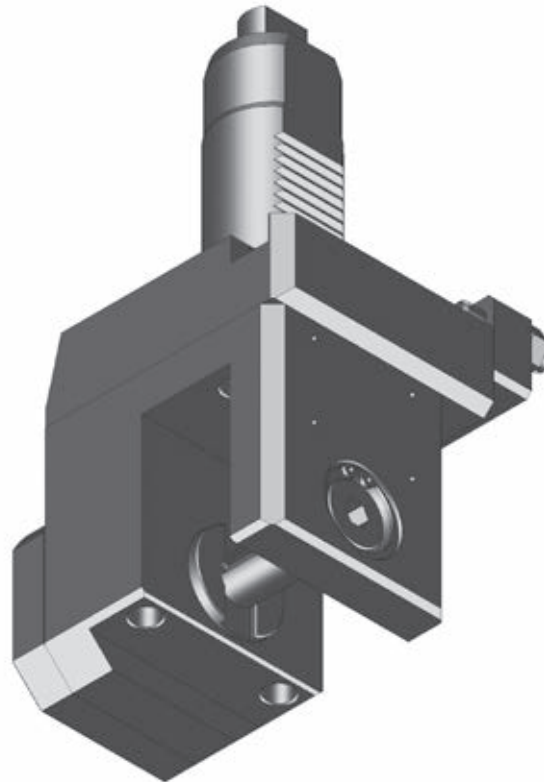
for Manufacturer	
	
for Machine type	
<b>VL 3/5</b> <b>VSC 200/250</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10,95 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
125035	ER 16	0,5-10	6 Nm	6.500 / 6.500	i = 1:1	external	134,5	73,5	61	80,5	85	84	↺ ↻
125057	ER 16	0,5-10	6 Nm	3.500 / 14.000	i = 1:4	external	134,5	73,5	61	80,5	85	84	↺ ↻

# Saw Blade Holder

for Manufacturer	
	
for Machine type	
<b>VL 3/5</b> <b>VSC 200/250</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Tang
SW	10,95 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Kühlung	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
125115*	16	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	20,5	68	36	30	85	84
125116*	22	20 Nm	6.500 / 2.450	i = 2,66:1	external	115	85	20,5	68	36	25	85	84
125124**	22	40 Nm	6.500 / 2.450	i = 2,66:1	external	130	95	20,5	78	36	25	85	84

\* Saw blade diameter max. = 80 mm

\*\* Saw blade diameter max. = 100 mm



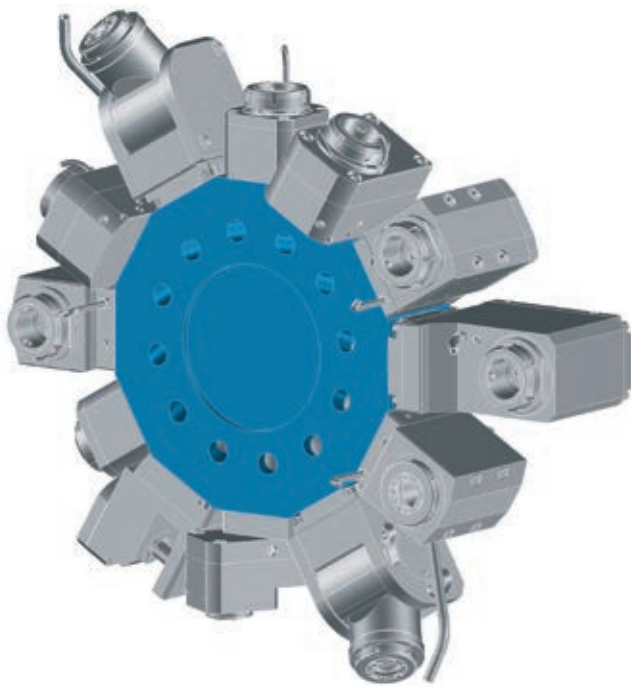
**VSC 315/400/500**

**Data**

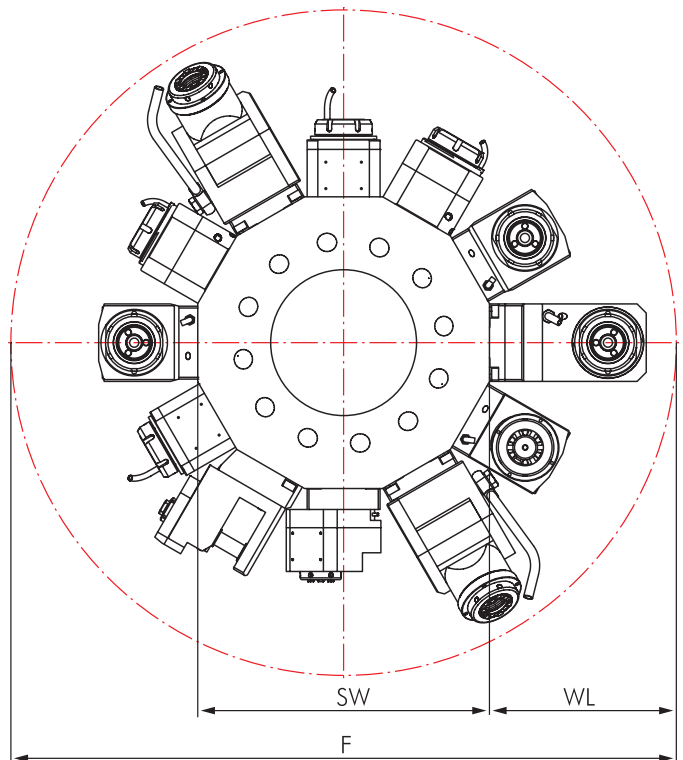
Machine type Series		Turret Stations
<b>VSC</b>	<b>315</b>	12
<b>VSC</b>	<b>400</b>	12
<b>VSC</b>	<b>500</b>	12



**Star-type Turret VDI 50**



**Interference Circles**



Machine type Series	F	SW	WL
<b>VSC 315</b>			
<b>VSC 400</b>	840	440	200
<b>VSC 500</b>	940	440	250



VSC 315/400/500

Connectable in accordance with  
**BLUECOMPETENCE**

» mimatic mi  
» PolyMILL » TriMILL » TrioCut » PolyREAM

## Live Tools

	Page		Page
<b>Straight Unit</b>	430		
<b>Angle Unit, Offset Type</b>			432
<b>Angle Unit</b>	431		
<b>Angle Unit, adjustable 0-90°</b>			433
<b>Saw Blade Holder</b>			434

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



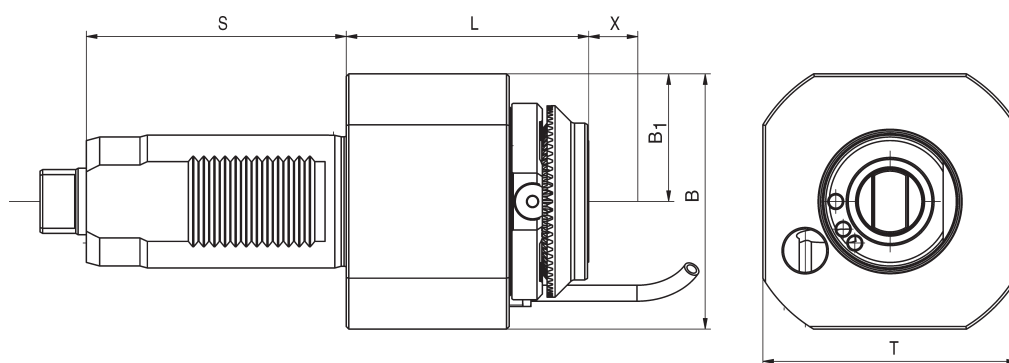
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
	
for Machine type	
<b>VSC 315/400/500</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12,95 mm
Modular Interfaces	
<b>mimaticMi</b> <b>HydroFLEX</b>	



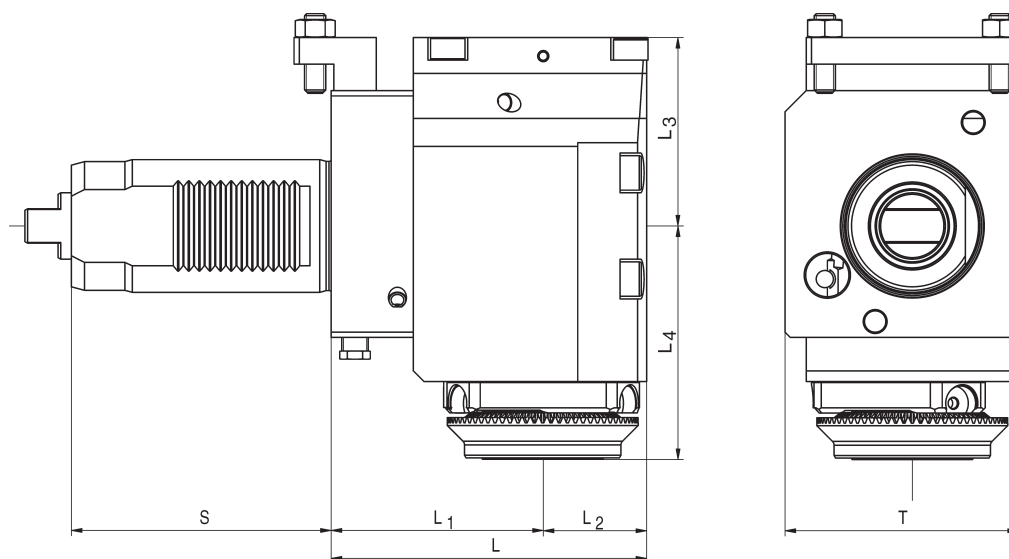
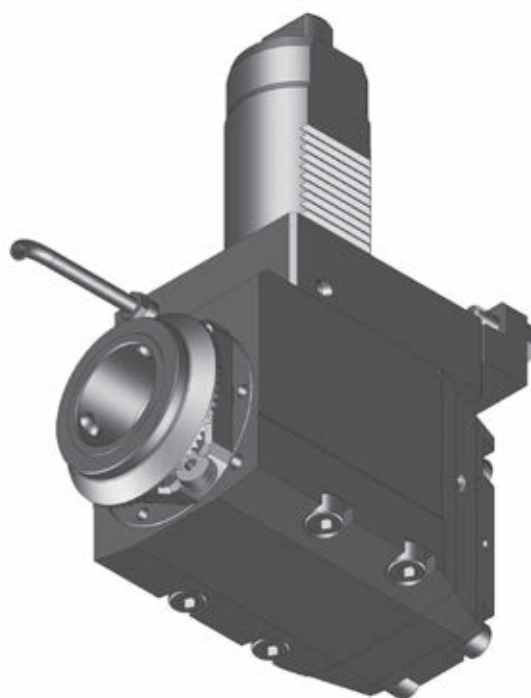
Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
123930	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	95,0	96	48	98	96	↺ ↻
124329	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	95,0	96	48	98	96	↺ ↻
124332	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92,0	96	48	98	96	↺ ↻
123949	ER 25	0,5-16	50 Nm	5.000 / 10.000	i = 1:2	external	153,5	120	40	98	90	↺ ↻
124331	ER 40*	1,0-25	80 Nm	6.000 / 6.000	i = 1:1	internal	110,0	96	48	98	96	↺ ↻
123925	HF 20	-	80 Nm	6.000 / 6.000	i = 1:1	external	96,0	96	48	98	96	↺ ↻
124321	HF 20	-	80 Nm	6.000 / 6.000	i = 1:1	internal	96,0	96	48	98	96	↺ ↻
124322	HF 25	-	80 Nm	6.000 / 6.000	i = 1:1	internal	87,5	96	48	98	96	↺ ↻



# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
	
for Machine type	
<b>VSC 315/400/500</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12,95 mm
Modular Interfaces	
<b>mimaticMi</b> <b>HydroFLEX</b>	



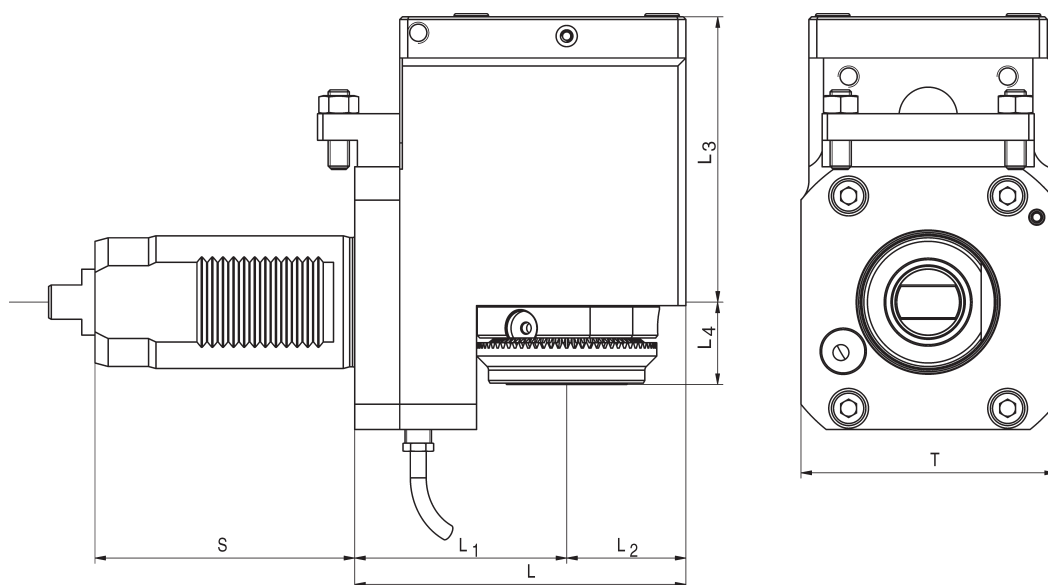
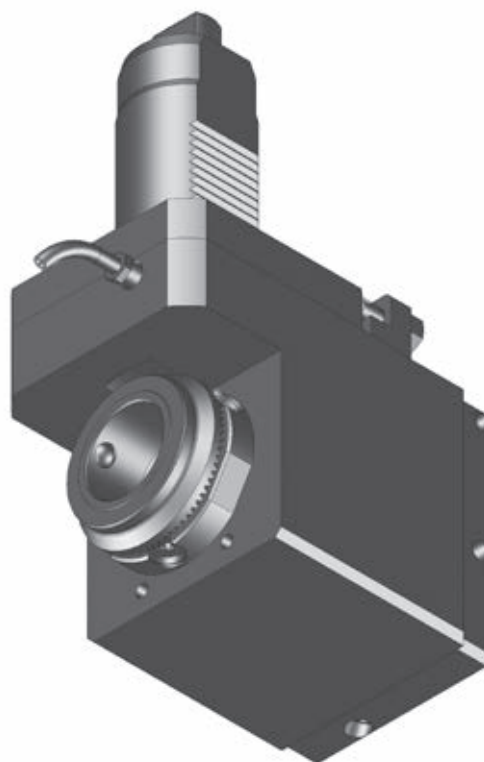
13



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124668	ER 32	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	external	119	80	39	69,0	70	98	88,0	↺ ↻
124900	ER 32*	1,0-20	80 Nm	5.200 / 5.200	i = 1:1	internal	119	80	39	75,5	70	98	88,0	↺ ↻
101551	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	119	80	39	75,5	88	98	88,0	↺ ↻
124699	ER 25	0,5-16	25 Nm	5.000 / 10.000	i = 1:2	external	114	80	34	40,0	78	98	88,0	↺ ↻
124901	ER 40*	1,0-25	80 Nm	6.000 / 6.000	i = 1:1	internal	139	100	39	75,5	107	98	100,0	↺ ↻
124926	ER 25*	0,5-16	20 Nm	6.000 / 12.000	i = 1:2	internal	119	80	39	72,5	75	98	90,5	↺ ↻
124925	HF 20	6,0-20	20 Nm	6.000 / 12.000	i = 1:2	internal	119	80	39	72,5	92	98	90,5	↺ ↻

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, Offset Type


for Manufacturer	
	
for Machine type	
<b>VSC 315/400/500</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12,95 mm
Modular Interfaces	
	

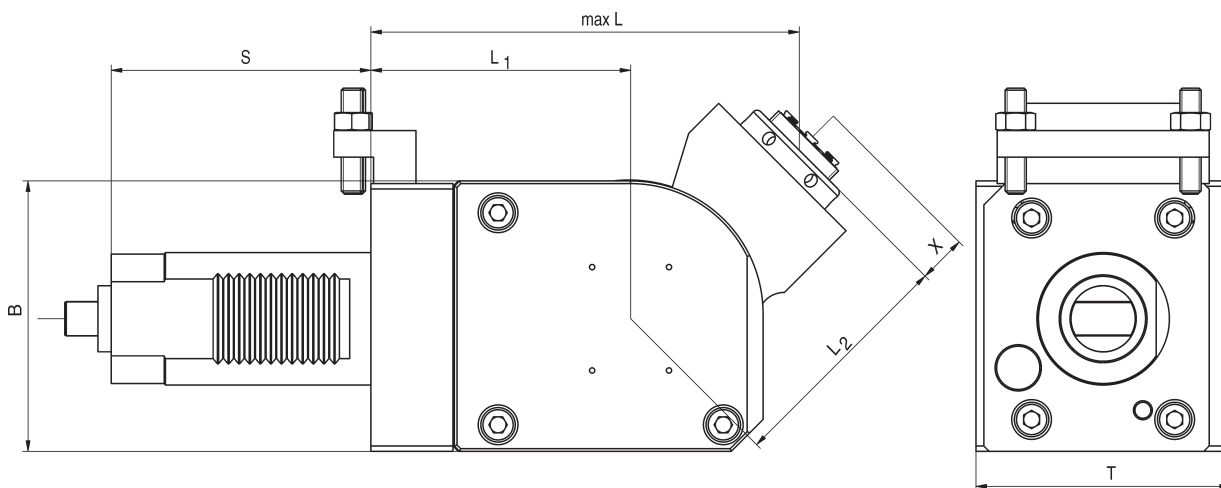
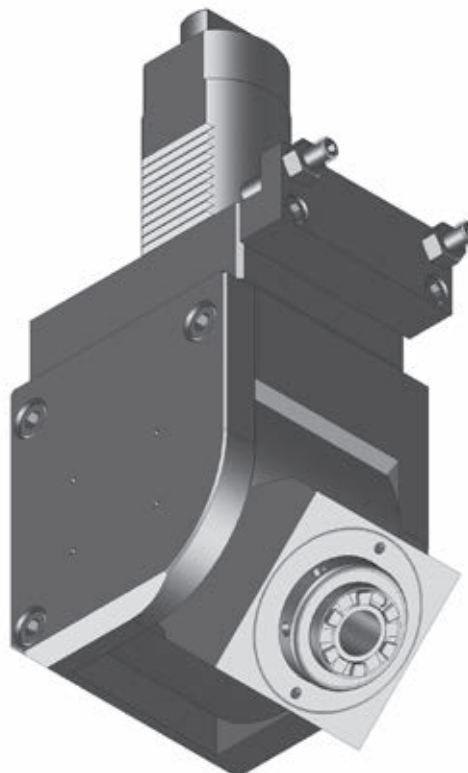


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
124445	ER 32*	1,0-20	80 Nm	6.000 / 6.000	i = 1:1	internal	117	75	42	115,5	20	98	86	
124446	mi 50	-	100 Nm	4.000 / 4.000	i = 1:1	internal	125	80	45	107,5	31	98	96	

# Angle Unit, Adjustable 0-90°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM


for Manufacturer	
	
for Machine type	
<b>VSC 315/400/500</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12,95 mm

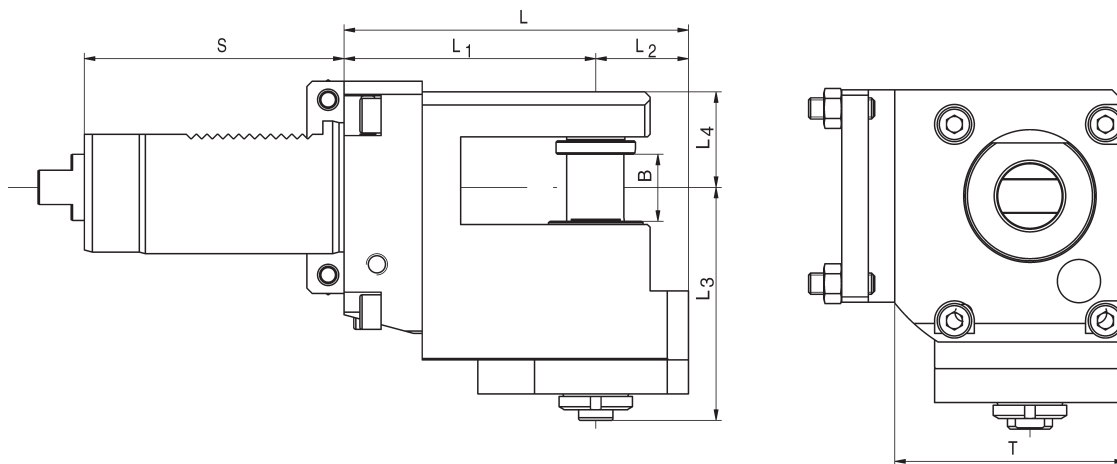
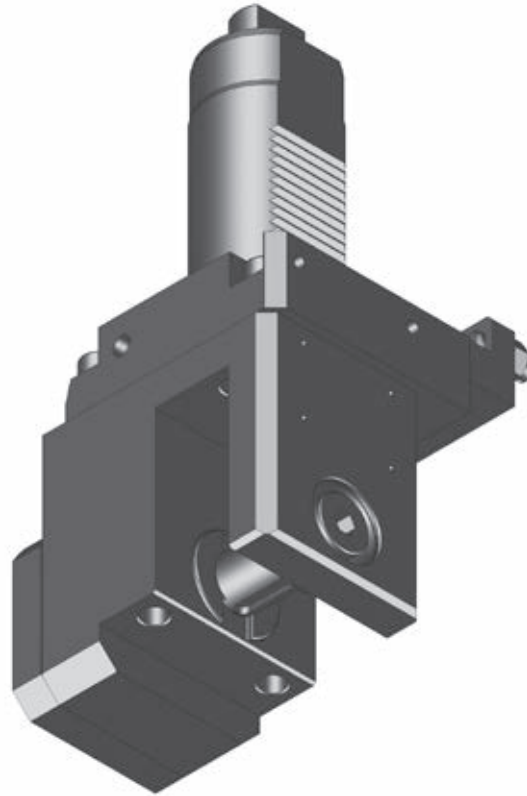


13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
125038	ER 25	0,5-16	35 Nm	6.000 / 6.000	i = 1:1	external	178,0	88,0	90	102,0	98	93	↺ ↻
125058	ER 16	0,5-10	6 Nm	3.500 / 14.000	i = 1:4	external	134,5	73,5	61	85,5	98	90	↺ ↻

# Saw Blade Holder

for Manufacturer	
	
for Machine type	
<b>VSC 315/400/500</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 50
Drive	Tang
SW	12,95 mm



Order No.	Fitting dia. mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Kühlung	L mm	L1 mm	L2 mm	L3 mm	L4 mm	B mm	S mm	T mm
101827*	22	40 Nm	6.500 / 2.450	i = 2,66:1	external	130	95	20,5	78	36	25	98	118



Picture shows a straight live tool with mi 50 tool holder for EMAG VL 3/5 and VSC 200/250



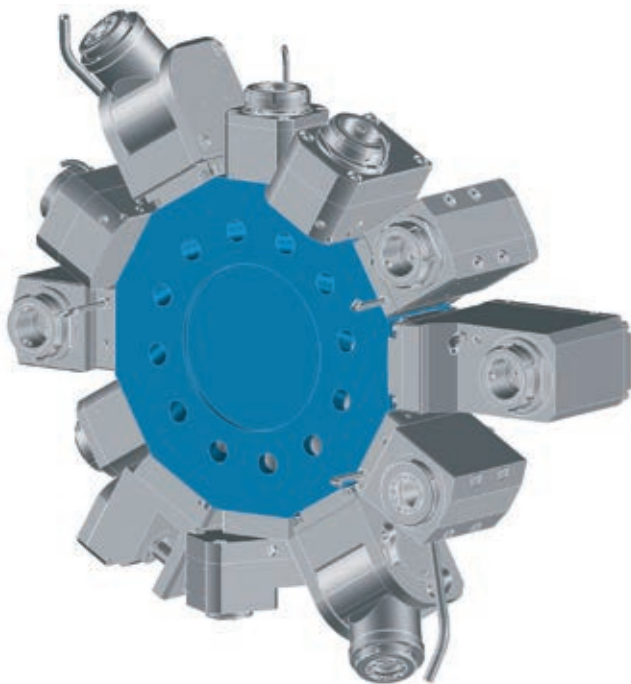
**VT 2 / VL 2 / VL 2P / VTC 100**

**Data**

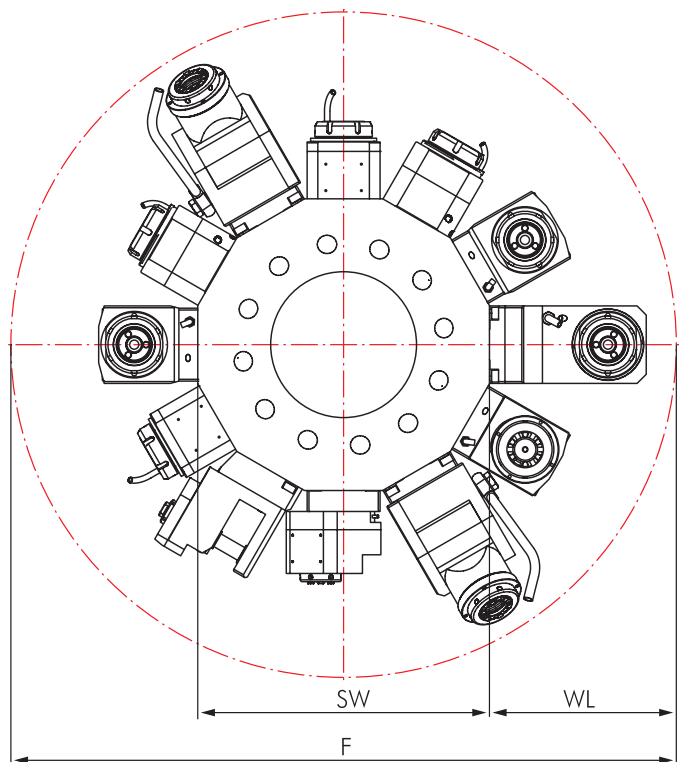
Machine type Series	Turret Stations
<b>VT 2</b>	12
<b>VL 2</b>	12
<b>VL 2P</b>	12
<b>VTC 100</b>	12



**Star-type Turret „BMT“**



**Interference Circles**





The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.



**VT 2 / VL 2 / VL 2P / VTC 100**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

## Live Tools

	Page		Page
<b>Straight Unit</b>	438		
		<b>Angle Unit</b>	439
			

## Options and Accessories

Accessories		
		
		Collets DIN 6499 526-527
		Threading Collets 528-529
		Wrenches 525
		Clamping Nuts 525
		Sleeves and Bushings 531




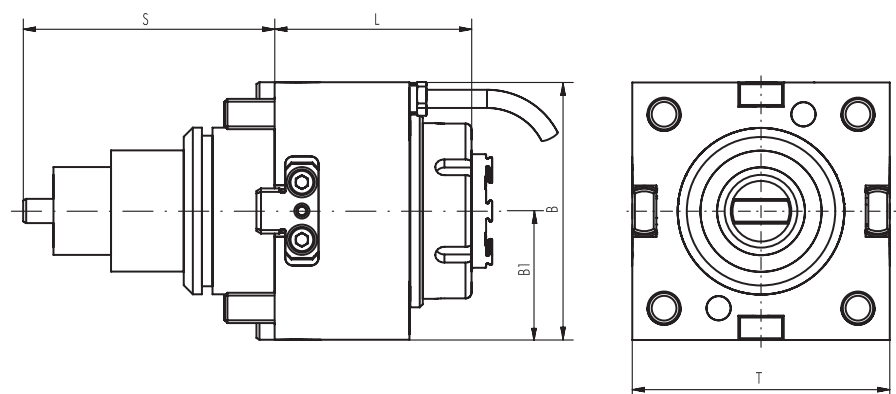
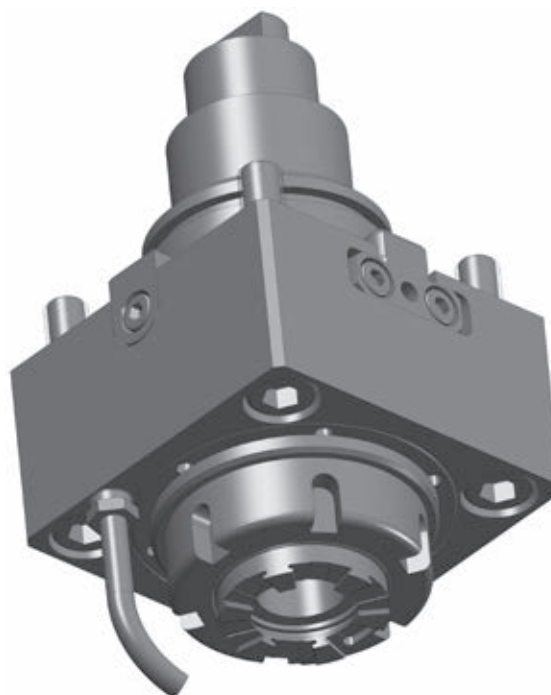
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM


for Manufacturer	
	
for Machine type	
<b>VT 2 / VL 2 / VL 2P</b> <b>VTC 100</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 55 mm
Drive	Tang
SW	8 mm

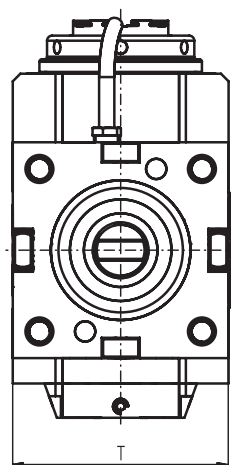
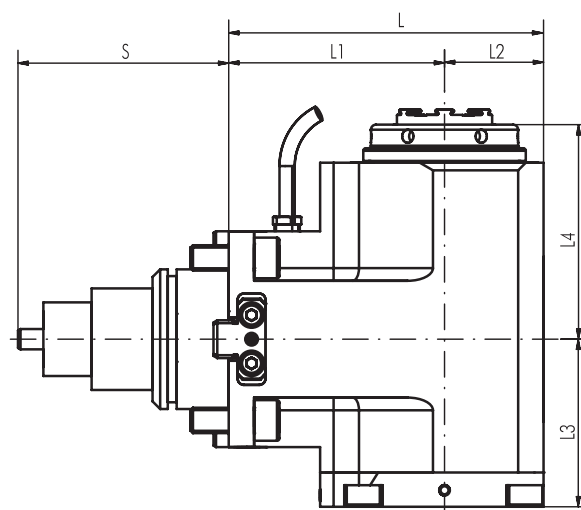
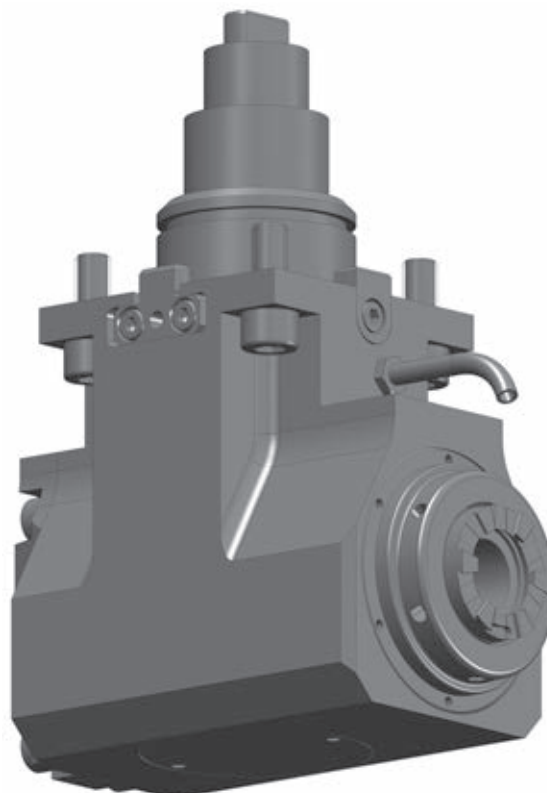




Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
180708	ER 32	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	external	65	85	42,5	83	85	↻ ↻
180707	ER 32*	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	internal	65	85	42,5	83	85	↻ ↻



# Angle Unit

for Manufacturer	
	
for Machine type	
<b>VT 2 / VL 2 / VL 2P</b> <b>VTC 100</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 55 mm
Drive	Tang
SW	8 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
180656	ER 32	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	external	124	85	39	66	84,5	83	85	
180655	ER 32*	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	internal	124	85	39	66	84,5	83	85	

\* With clamping nuts with sealing, seals see page 530



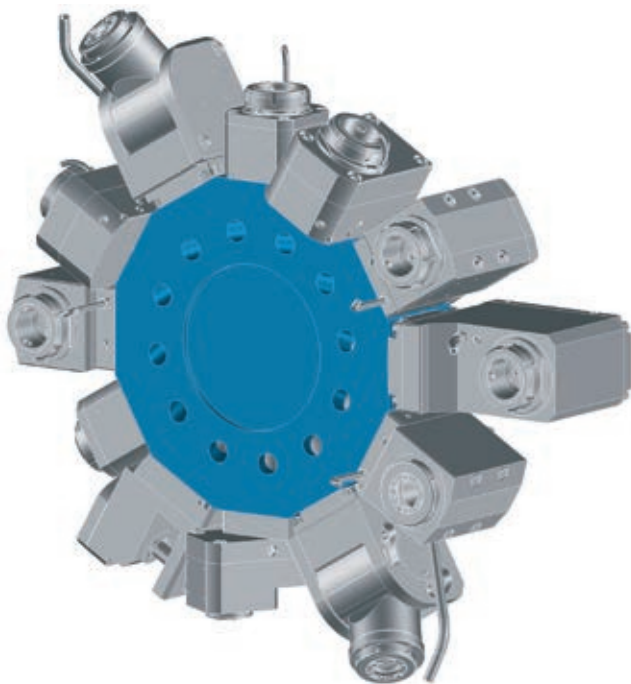
**VT 4 / VTC 200**

**Data**

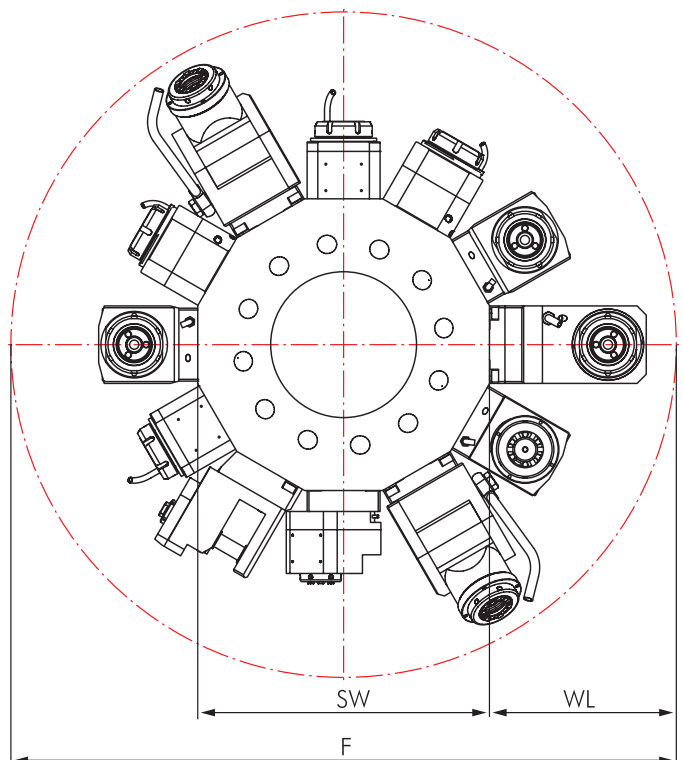
Machine type Series	Turret Stations
<b>VT 4</b>	12
<b>VTC 200</b>	12



**Star-type Turret „BMT“**



**Interference Circles**





The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.



**VT 4 / VTC 200**

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

## Live Tools

	Page		Page
<b>Straight Unit</b>	442		
		<b>Angle Unit</b>	443
			

## Options and Accessories

Accessories		
		
		Collets DIN 6499 526-527
		Threading Collets 528-529
		Wrenches 525
		Clamping Nuts 525
		Sleeves and Bushings 531




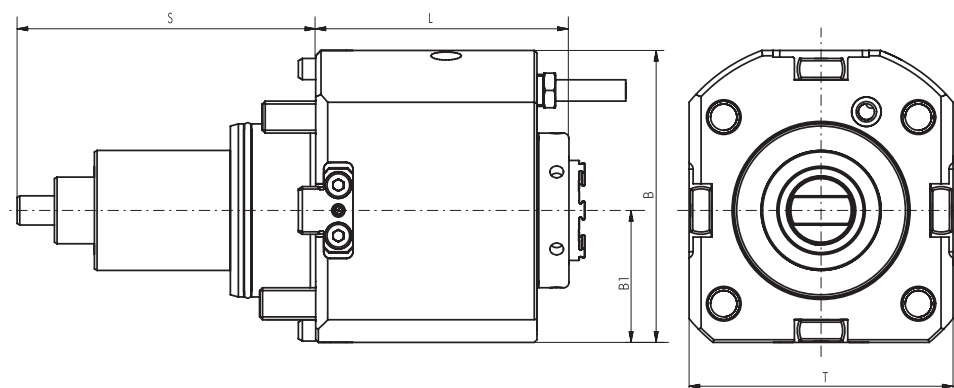
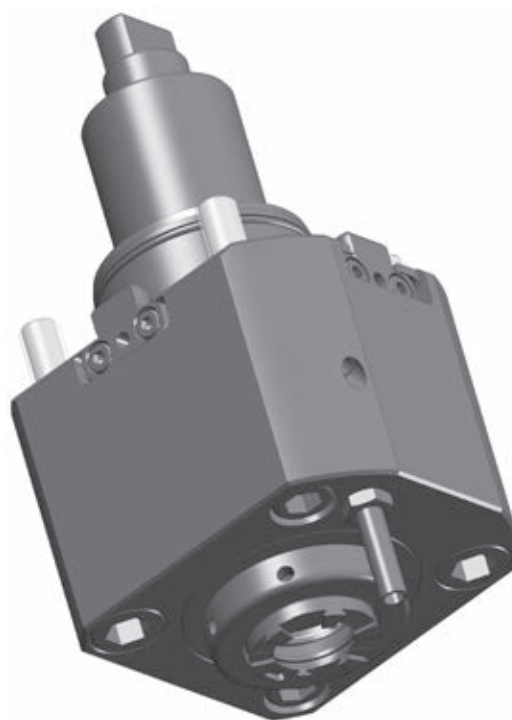
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit


Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

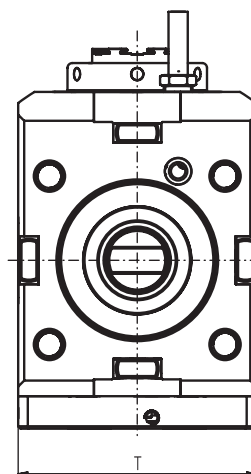
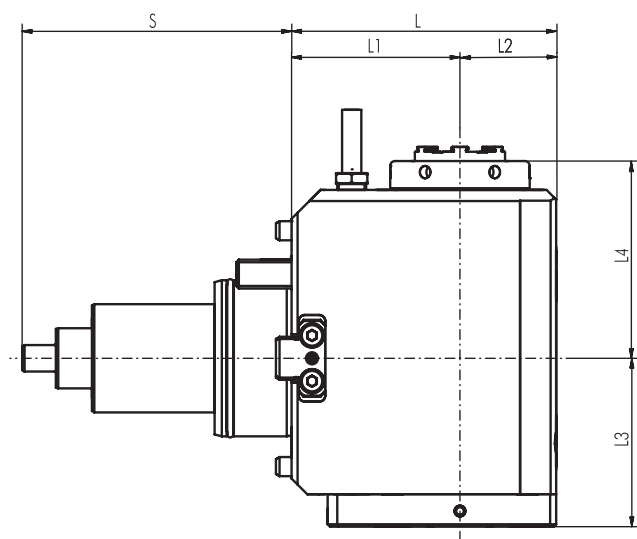
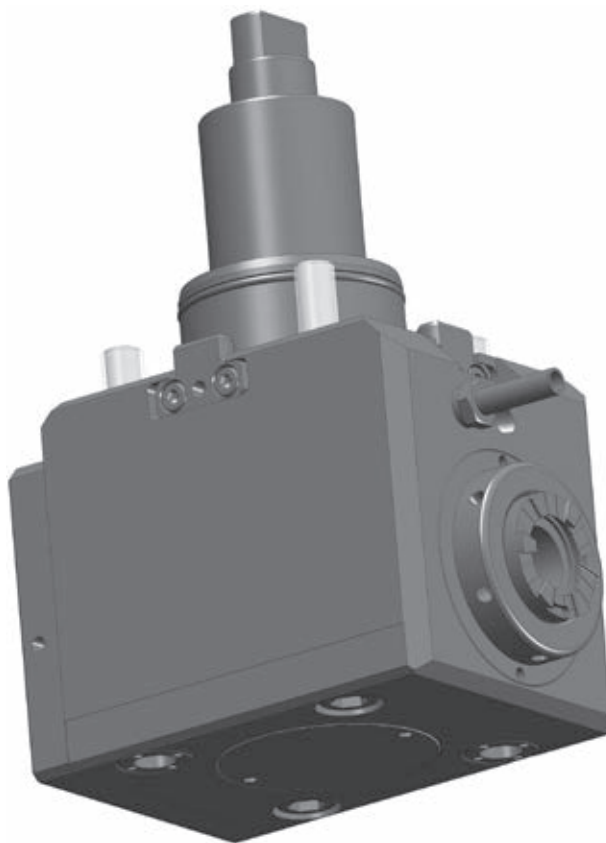
for Manufacturer	
	
for Machine type	
<b>VT 4</b> <b>VTC 200</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 65 mm
Drive	Tang
SW	10,95 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
181280	ER 32	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	external	95	109,5	49,5	112	99	↻ ↻
176733	ER 32*	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	internal	95	109,5	49,5	112	99	↻ ↻

# Angle Unit

for Manufacturer	
	
for Machine type	
<b>VT 4</b> <b>VTC 200</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 65 mm
Drive	Tang
SW	10,95 mm



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
176505	ER 32	1,0-20	70 Nm	5.000 / 6.500	i = 1:1	external	110	70	40	70	82	110	99	↻ ↻
176726	ER 32*	1,0-20	70 Nm	5.000 / 6.500	i = 1:1	internal	110	70	40	70	82	110	99	↻ ↻

\* With clamping nuts with sealing, seals see page 530

**MORI SEIKI**  
THE MACHINE TOOL COMPANY

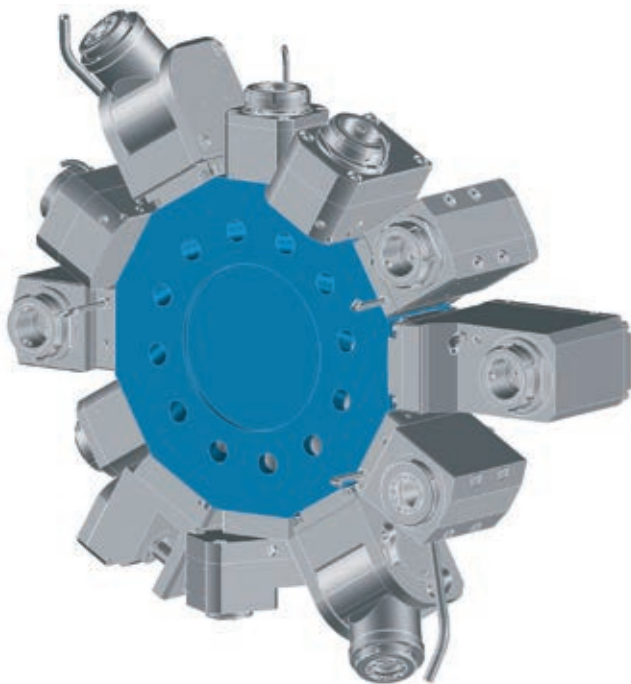
**NL 1500 / 2000 / 2500 / 3000**

**Data**

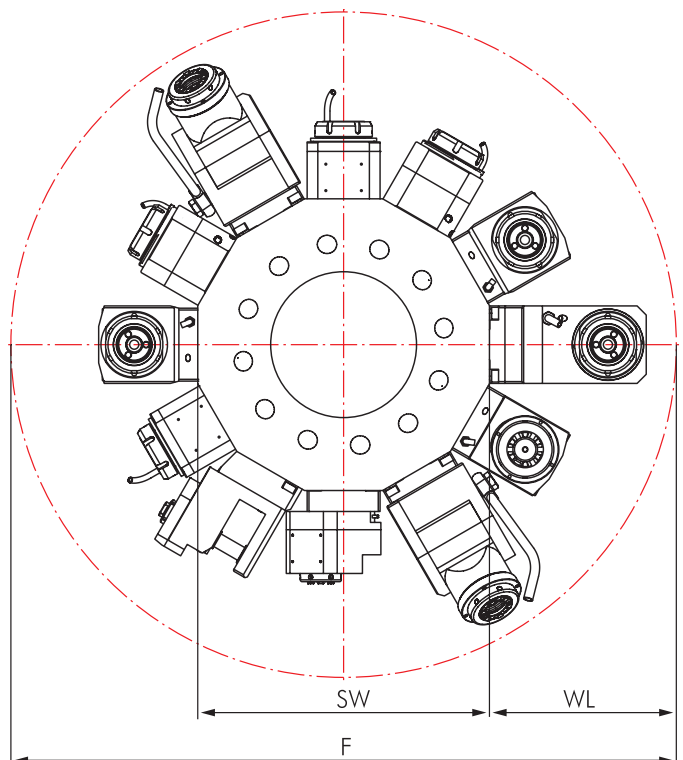
Machine type Series		Turret Stations
NL	1500	12
NL	2000	12
NL	2500	12
NL	3000	12



**Star-type Turret „BMT“**





**Interference Circles**



Machine type Series	F	SW	WL
<b>NL 1500/2000/2500</b>	732	420	156
<b>NL 3000</b>	781	470	155,5

## Live Tools

	Page		Page		
<b>Straight Unit</b>		446	<b>Angle Unit, 2-Axis</b>		448
<b>Angle Unit</b>		447			

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



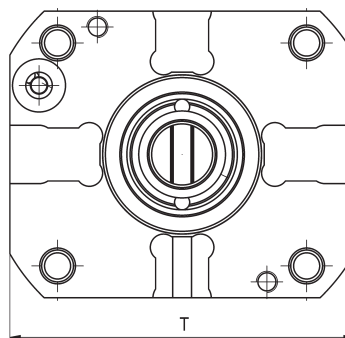
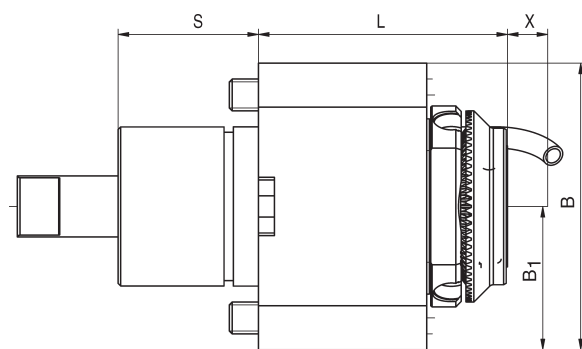
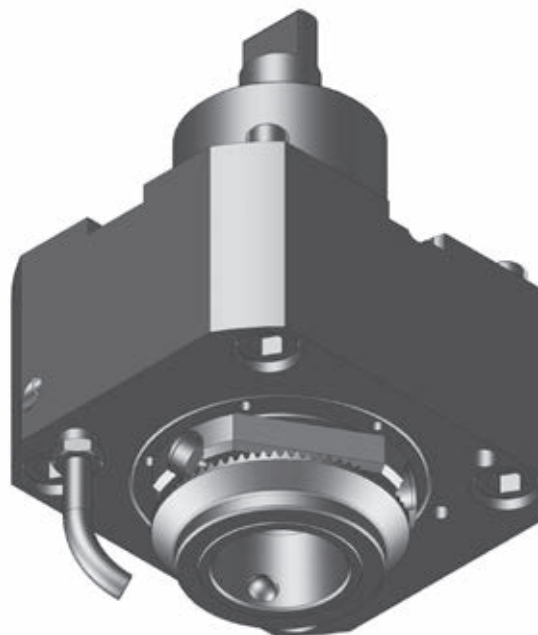
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>MORI SEIKI</b> THE MACHINE TOOL COMPANY	
for Machine type	
<b>NL 1500 / 2000 / 2500 / 3000</b>	
Dimensions	
Turret type	Star-type Turret
Shank	BMT Ø 60 mm
Drive	Tang
SW	7.9 mm
Modular Interfaces	
<b>mimaticMi</b>	



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
100471	ER 40	2,5-30	70 Nm	6.500 / 6.500	i = 1:1	external	115	108	54	53	130	↻ ↻
124262	ER 40*	2,5-30	70 Nm	6.500 / 6.500	i = 1:1	internal	115	108	54	53	130	↻ ↻
124263	mi 50	-	70 Nm	6.500 / 6.500	i = 1:1	internal	94	108	54	53	130	↻ ↻



# Angle Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**MORI SEIKI**  
THE MACHINE TOOL COMPANY

for Machine type

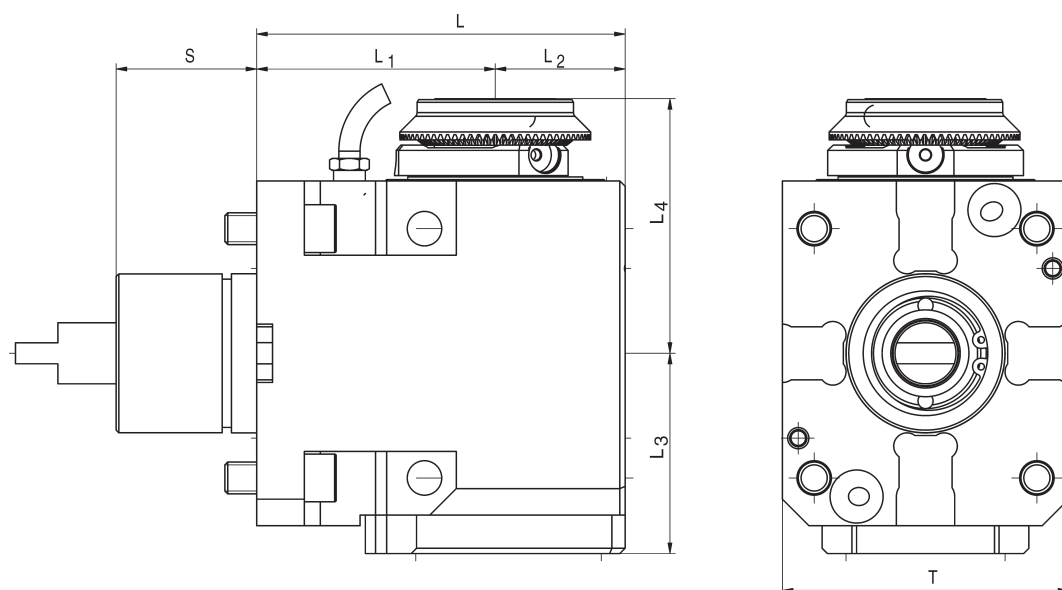
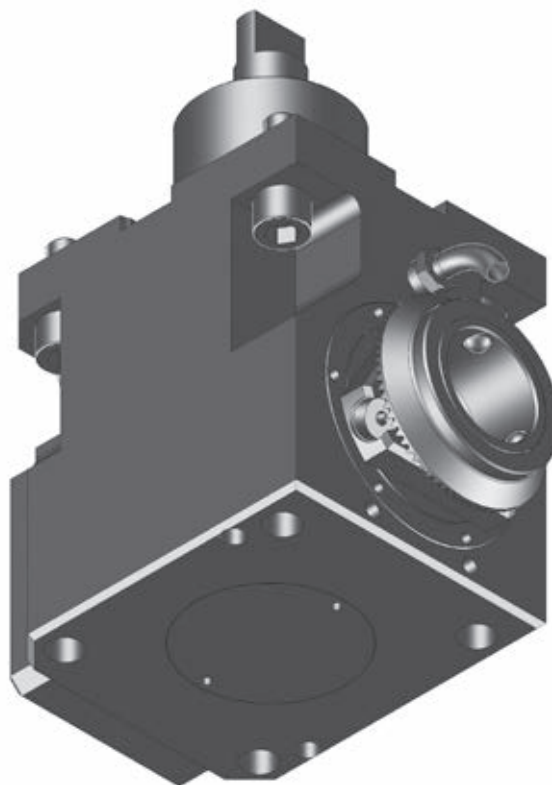
**NL 1500 / 2000 / 2500 / 3000**

Dimensions

Turret type	Star-type Turret
Shank	BMT Ø 60 mm
Drive	Tang
SW	7.9 mm

Modular Interfaces

**mimaticMi**



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
101219	ER 40	2,5-30	70 Nm	6.500 / 6.500	i = 1:1	external	139	90	49	75,5	117	53	130	↺ ↻
124882	ER 40*	2,5-30	70 Nm	6.500 / 6.500	i = 1:1	internal	139	90	49	75,5	117	53	130	↻ ↺
124883	mi 50	-	70 Nm	6.500 / 6.500	i = 1:1	internal	139	90	49	75,5	96	53	130	↻ ↺

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, 2-Axis

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer

**MORI SEIKI**  
THE MACHINE TOOL COMPANY

for Machine type

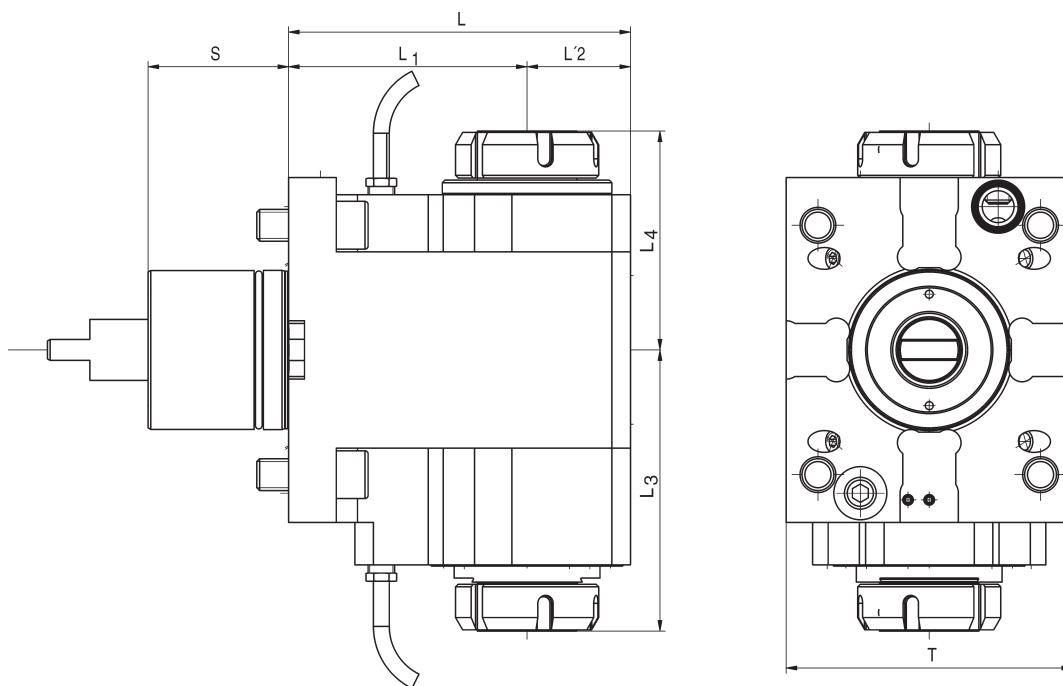
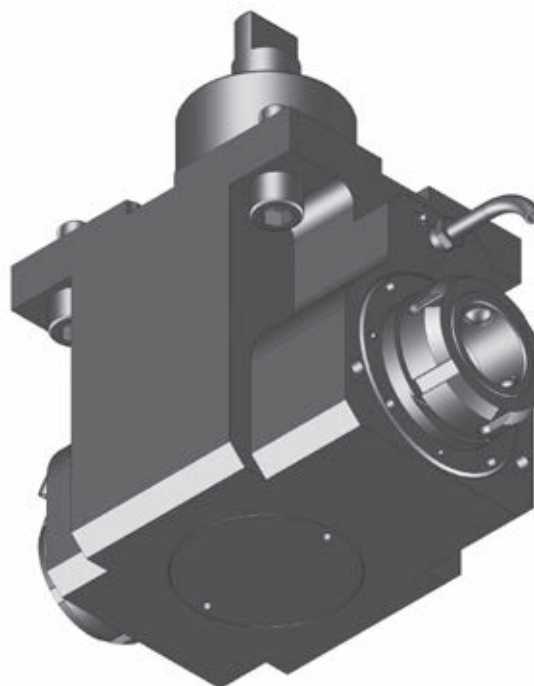
**NL 1500 / 2000 / 2500 / 3000**

Dimensions

Turret type	Star-type Turret
Shank	BMT Ø 60 mm
Drive	Tang
SW	7.9 mm

Modular Interfaces

**mimaticMi**



Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm
101218	2x ER 32	1,0-20	70 Nm	6.500 / 6.500	i = 1:1	external	139	90	49	70	70,0	53	108
169193	2x mi 40	-	70 Nm	6.500 / 6.500	i = 1:1	internal	129	90	39	105	82,5	53	108

**BLUECOMPETENCE**

Alliance Member

Partner of the Engineering Industry  
Sustainability Initiative



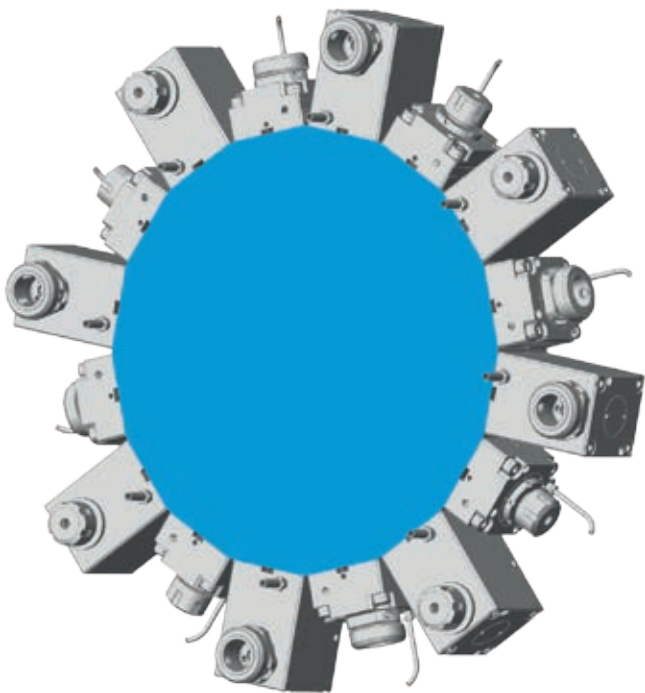
Picture shows a straight live tool VDI 40 with a mimatic capto C4 interface

**Data**

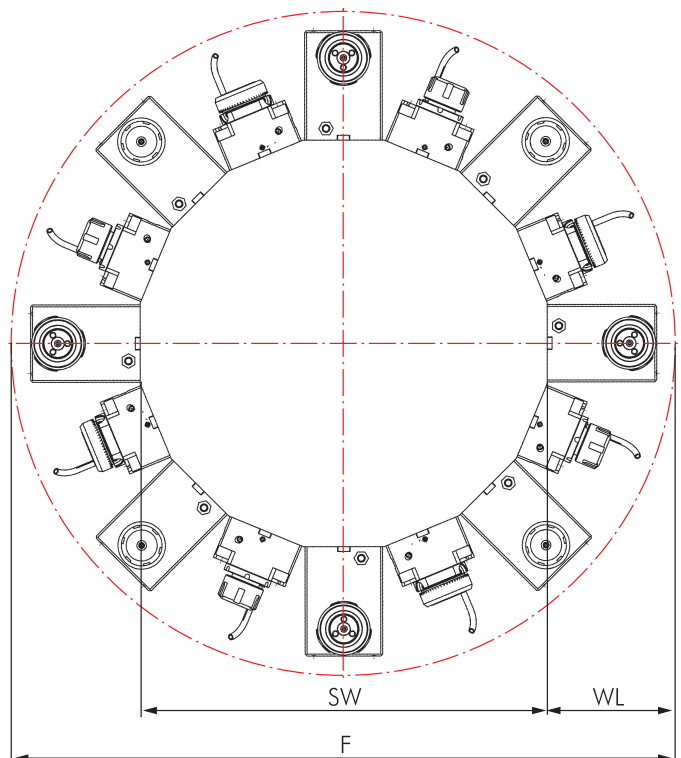
Machine Type Series		Turret Stations
<b>NZ</b>	<b>1500</b>	2x16
<b>NZ</b>	<b>2000</b>	2x16



**Star-Type Turret BMT**



**Interference Circles**



Machine Type Series	F	SW	WL
<b>NZ 1500</b>	670	420	125
<b>NZ 2000</b>	670	420	125

## Live Tools

	Page		Page
<b>Straight Unit</b>	452	<b>Angle Unit, 2-Axis</b>	454
<b>Angle Unit</b>	453	<b>Angle Unit, adjustable 0-90°</b>	455

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531



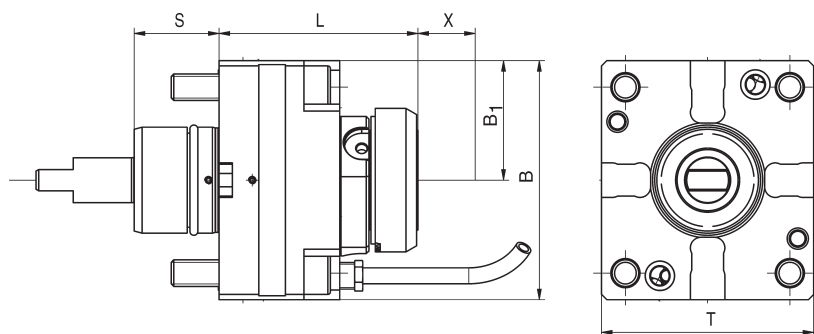
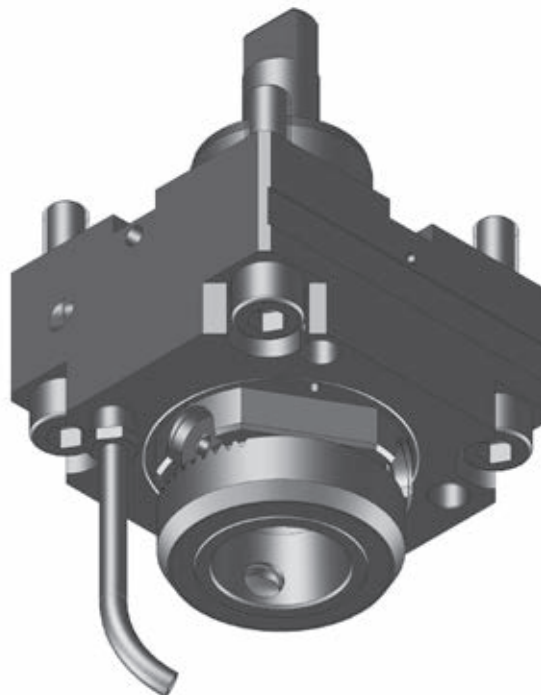
### Delivery information

Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>MORI SEIKI</b> THE MACHINE TOOL COMPANY	
for Machine Type	
<b>NZ 1500 / 2000</b>	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 40 mm
Drive	Tang
SW	7.9 mm
Modular Interfaces	
<b>mimaticMi</b>	

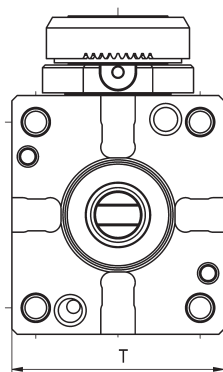
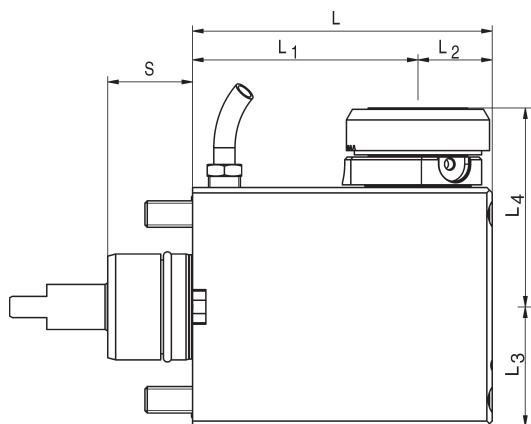
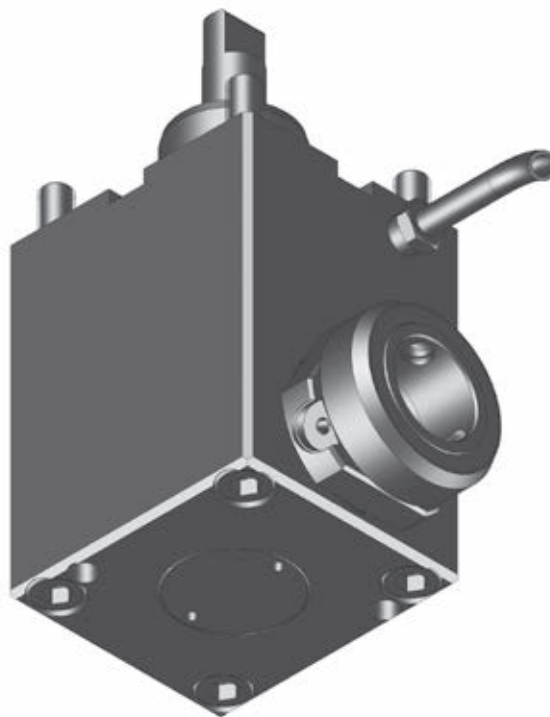


Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	X mm	L mm	B mm	B1 mm	S mm	T mm	Rotating direction
173741	ER 25	0,5-16	50 Nm	6.500 / 6.500	i = 1:1	external	43,4	81,6	80	40	32	90	↺ ↻
173792	ER 25*	0,5-16	50 Nm	6.500 / 6.500	i = 1:1	internal	43,4	81,6	80	40	32	90	↻ ↺
174332	mi 40	-	50 Nm	6.500 / 6.500	i = 1:1	internal	50,0	75,0	80	40	32	90	↻ ↺

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
<b>MORI SEIKI</b> THE MACHINE TOOL COMPANY	
for Machine Type	
<b>NZ 1500 / 2000</b>	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 40 mm
Drive	Tang
SW	7.9 mm
Modular Interfaces	
<b>mimaticMi</b>	



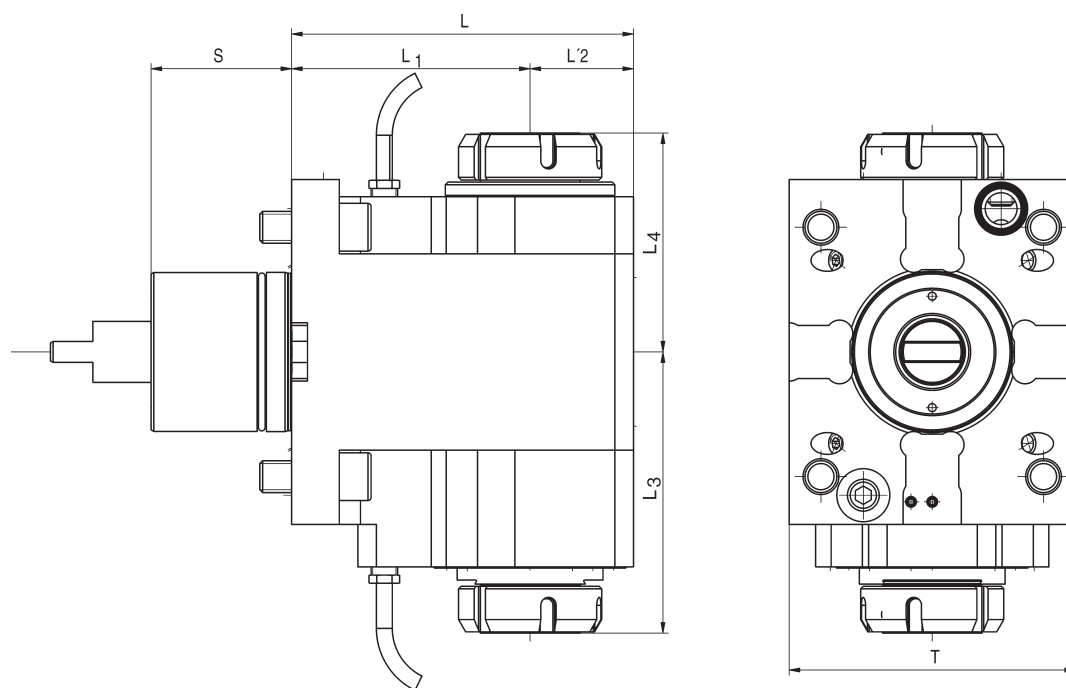
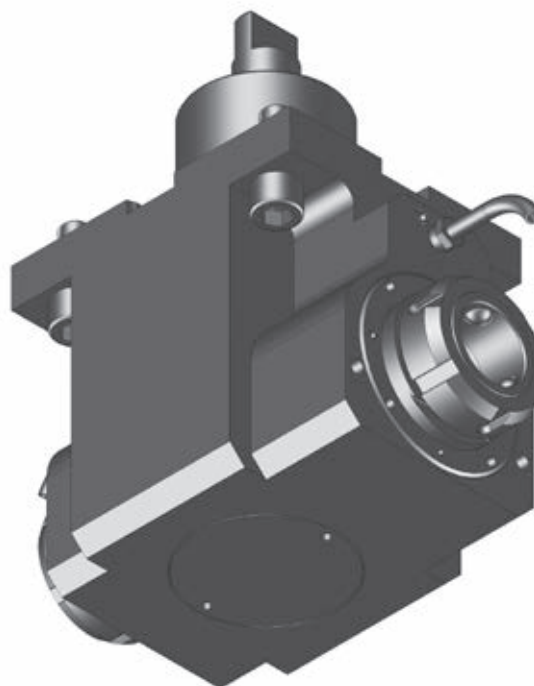
13

Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm	Rotating direction
176318	ER 16	0,5-10	20 Nm	6.500 / 13.000	i = 1:2	external	120	85	35	66	72,5	32	80	↺ ↻
173743	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	113	85	28	45	79,0	32	80	↺ ↻
174079	ER 25*	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	internal	113	85	28	45	79,0	32	80	↺ ↻
174334	mi 40	-	25 Nm	6.500 / 6.500	i = 1:1	internal	113	85	28	45	75,0	32	80	↺ ↻

\* With clamping nuts with sealing, seals see page 530

# Angle Unit, 2-Axis

for Manufacturer	
<b>MORI SEIKI</b> THE MACHINE TOOL COMPANY	
for Machine Type	
<b>NZ 1500 / 2000</b>	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 40 mm
Drive	Tang
SW	7.9 mm



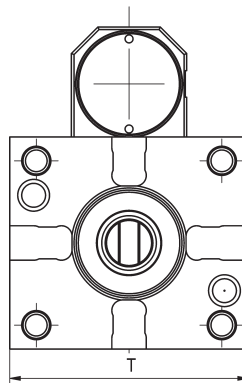
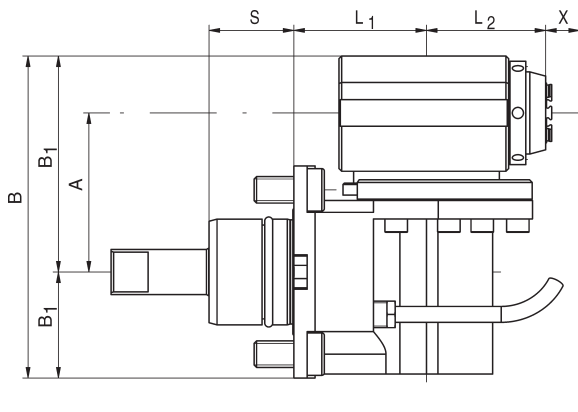
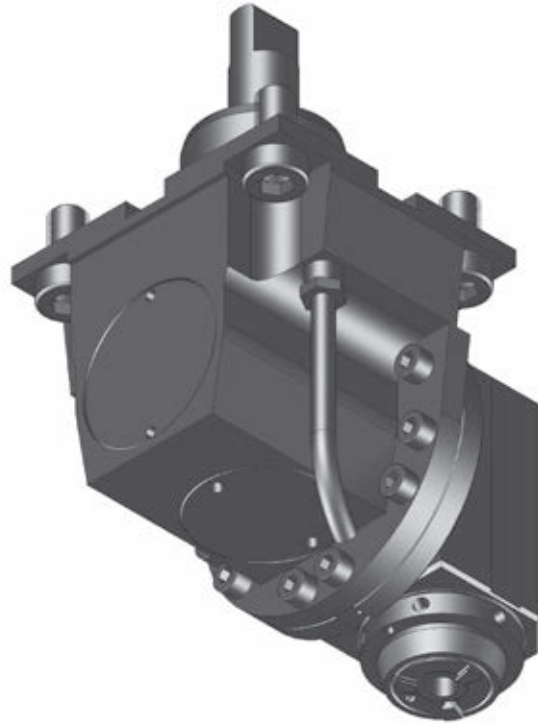
Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm	T mm
176317	ER 25	0,5-16	25 Nm	6.500 / 6.500	i = 1:1	external	120	85	35	58	58	32	80



# Angle Unit, Adjustable 0-90°

Connectable in accordance with  
**BLUECOMPETENCE** » PolyMILL » TriMILL » PolyREAM

for Manufacturer	
<b>MORI SEIKI</b> THE MACHINE TOOL COMPANY	
for Machine Type	
<b>NZ 1500 / 2000</b>	
Dimensions	
Turret Type	Star-Type Turret
Shank	BMT Ø 40 mm
Drive	Tang
SW	7.9 mm



13

Order No.	Tool Holder	Clamping Range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	B mm	S mm	T mm	Rotating direction
176310	ER 16	0,5-10	15 Nm	8.000 / 8.000	i = 1:1	external	95	60	21,5	80	32	90	↺ ↻



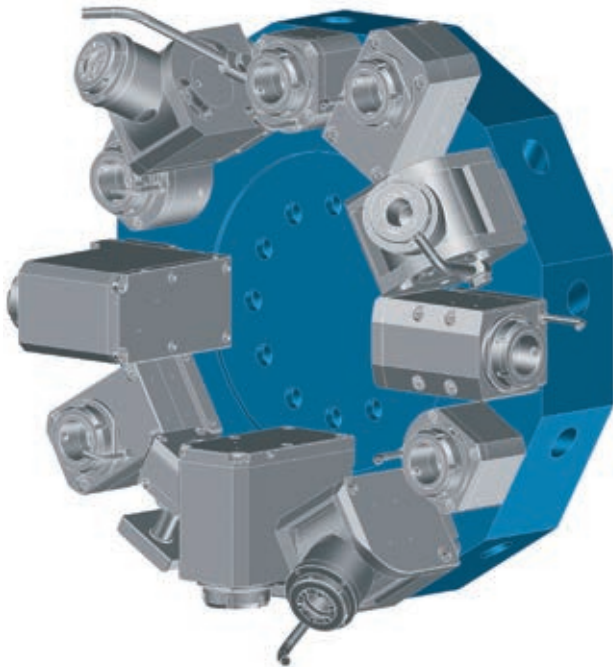
**ST 20/30**

## Data

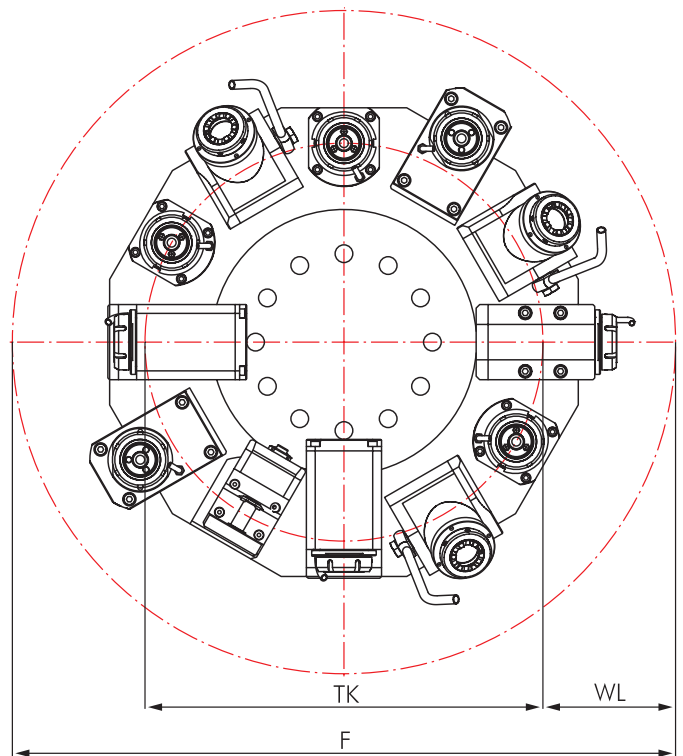
Machin type series		Turret Stations
ST	20	12
ST	30	12



## Star-type Turret VDI 40



## Interference Circles





The interference circles are depending on your CNC machine. You can find it in your machine instruction manuals.



**ST 20/30**

Connectable in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

## Live Tools

	Page		Page
<b>Straight Unit</b>			458
<b>Angle Unit</b>			459

## Options and Accessories

<b>mi Toolholders</b>		mi System Description Toolholders Accessories	471 473-477 478-479
<b>Standard VDI Toolholders</b>		VDI Toolholders Accessories	518-524 525-531
<b>Accessories</b>		Collets DIN 6499 Threading Collets Wrenches Clamping Nuts Sleeves and Bushings	526-527 528-529 525 525 531





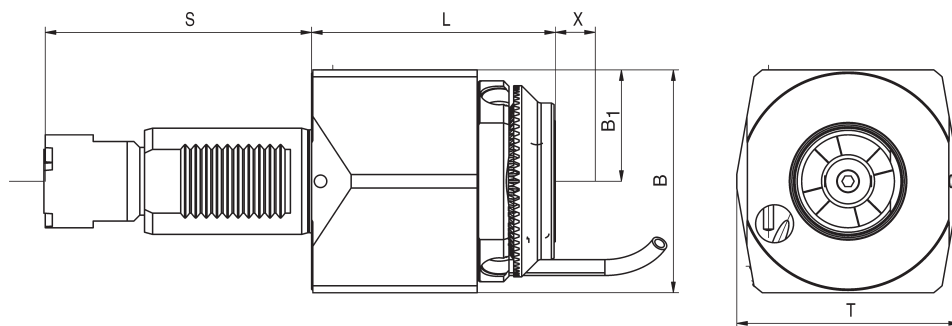
### Delivery information







Driven toolholders with mi quick-change interface are supplied with operating wrench (see spare parts on page 479).  
Driven toolholders with other interfaces are supplied without clamping wrench (see accessories on page 525).

# Straight Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM



for Manufacturer	
	
for Machine type	
<b>ST 20</b> <b>ST 30</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Contrate Toothing
Please note the size "S"	
Modular Interfaces	
	

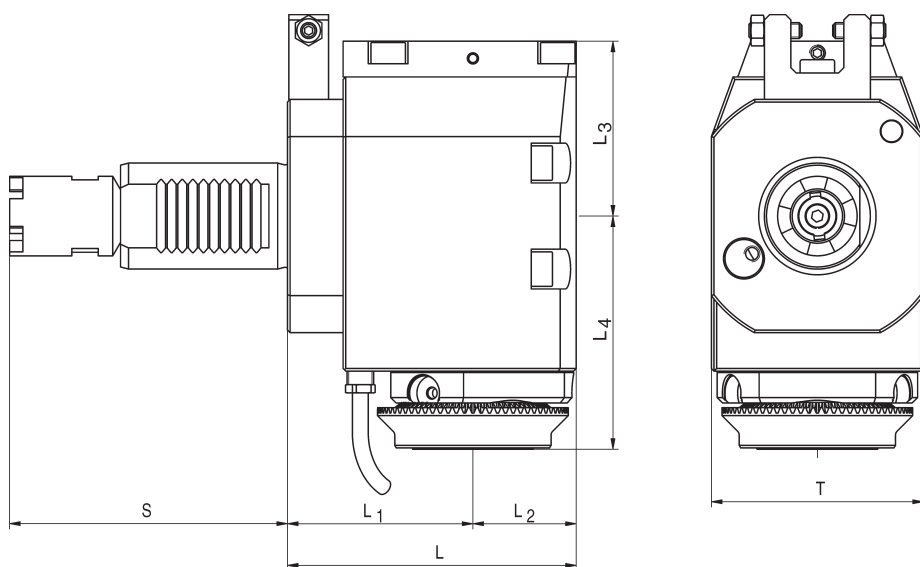
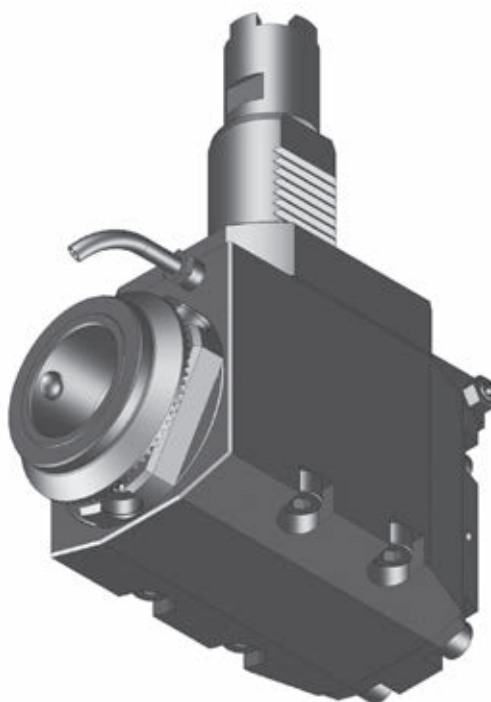


Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	B mm	B1 mm	T mm	S mm	Rotating direction
100434	ER 32	1-20	80 Nm	-	i = 1:1	external	75,5	85	42	84	104,85	
169129	ER 32	1-20	80 Nm	-	i = 1:1	external	75,5	85	42	84	117,55	
124231	ER 32*	1-20	80 Nm	6.500 / 6.500	i = 1:1	internal	75,5	85	42	84	104,85	
124232	ER 32*	1-20	80 Nm	6.500 / 6.500	i = 1:1	internal	75,5	85	42	84	117,55	
100833	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92,0	85	42	84	104,85	
169595	mi 50	-	80 Nm	6.500 / 6.500	i = 1:1	internal	92,0	85	42	84	117,55	

# Angle Unit

Connectible in accordance with **BLUECOMPETENCE** » mimatic mi » PolyMILL » TriMILL » TrioCut » PolyREAM

for Manufacturer	
	
for Machine type	
<b>ST 20</b> <b>ST 30</b>	
Dimensions	
Turret type	Star-type Turret
Shank	VDI 40
Drive	Contrate Toothing
Please note the size "S"	
Modular Interfaces	
	



13

Order No.	Tool holder	Clamping range mm	Torque max.	n1/n2 (max.) (r.p.m.)	Gear Ratio	Coolant	L mm	L1 mm	L2 mm	L3 mm	L4 mm	T mm	S mm	Rotating direction
101174	ER 32	1-20	50 Nm	6.500 / 6.500	i = 1:1	external	109	70	39	66	70	80	104,85	↺ ↻
169141	ER 32	1-20	50 Nm	6.500 / 6.500	i = 1:1	external	109	70	39	66	70	80	117,55	↻ ↺
124836	ER 32*	1-20	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	70	80	104,85	↻ ↺
166691	ER 32*	1-20	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	70	80	117,55	↺ ↻
101477	mi 50	-	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	88	80	104,85	↻ ↺
169593	mi 50	.	50 Nm	6.500 / 6.500	i = 1:1	internal	109	70	39	66	88	80	117,55	↺ ↻

\* With clamping nuts with sealing, seals see page 530

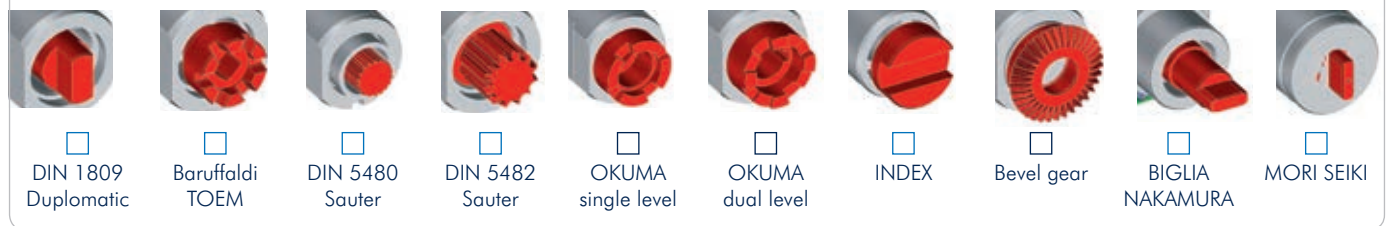
# Form for Inquiry, Part 1

## Fax +49-831-57444-90

Company	
Name	
Street	
Zip/City	
Phone	
Fax	
E-Mail	

### Specifications to the Machine

Manufacturer		
Type, Year of manufacturing		
Machine No.		
Coolant		
Coolant pressure (internal coolant)		
Spindle speed max.		r.p.m
max. torque of the spindle		Nm
Turret manufacturer	Typ. No.	
Turret Revolver type	Disc-type Turret	Star-type Turret
Number of slots		
max. swinging circle		mm
Operation	Main spindle	Sub spindle
Revolver drive	please mark with a cross:	



### Specifications to the Operation

Operation		
(drilling, milling, turning, etc.)		
Material		
Tool		
Tool diameter		mm
Work piece drawing	yes (please transmit)	no

### Specifications to the Tool














Shank size VDI		mm
Others		
Gear ratio		i=
Spindle speed wanted		r.p.m
Torque moment wanted		Nm
Coolant	yes	no
max. coolant pressure through the spindle (internal)		
Coolant nozzle		
Coolant pipe		
Notice		

**Form for Inquiry, Part 2**  
**Fax +49-831-57444-90**

**Specifications to the Tool**







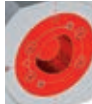





Type

please notice your required number of pieces:

						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Straight, central	Straight, Offset Type (A= mm)	Angle, central	Angle, Offset Type (A= mm)	Multi spindle unit Straight, central	Multi spindle unit Straight, Offset Type (A= mm)	
						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Multi spindle unit angle, central	Multi spindle unit angle, Offset Type (A= mm)	Y-Unit adjustable	Angle Unit adjustable	Special angle fixed ( °)	Saw blade holder, straight	Saw blade holder, angle

Toolholder

please mark with a cross:

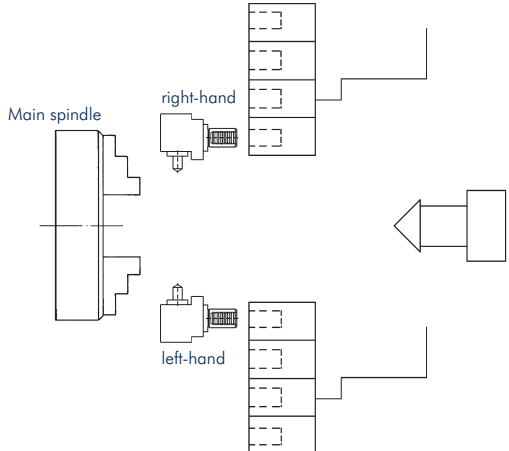
											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mi Quick change tool system	SYNAX Tapping quick change system	Hydro-Flex Hydraulic clamping system	Collet ER DIN 6499	Weldon/ Whistle- Notch	Komet ABS	Coromant CAPTO	Shell mill holders	KM / UTS	HSK	SK	Saw blade

Tool type

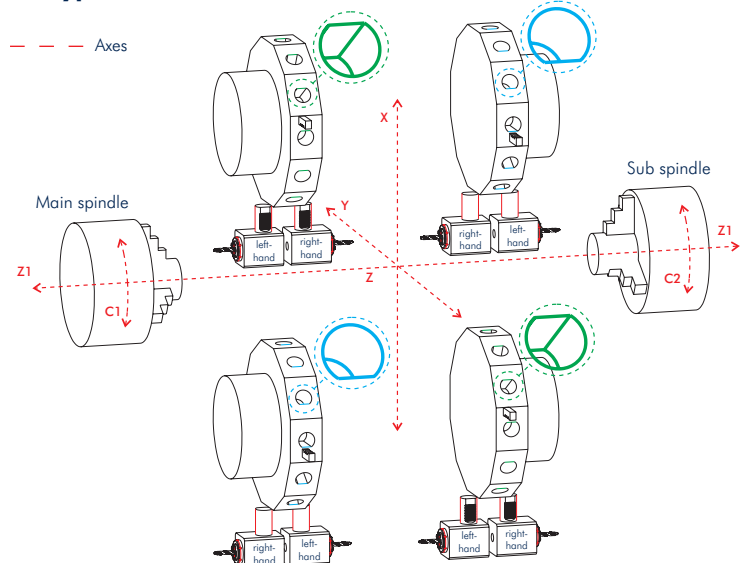
right

left

**Disc-type Turret**



**Star-type Turret**



## Multi-Spindle Technology





## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

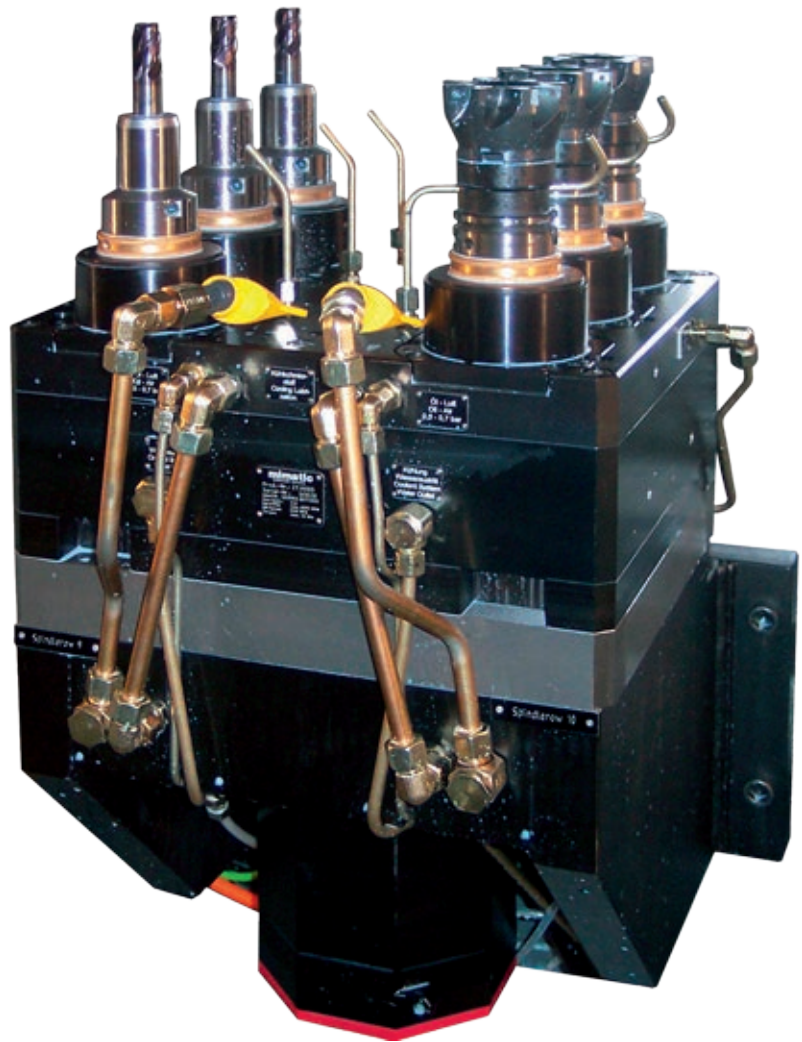
## mimatic<sup>®</sup> Multi Spindle Technology Increases Your Productivity

The multi spindle technology is characterized by the rule that almost no working issue resembles the other one. Our strength lies in our ability to prepare individual solutions for each of these cases.

Our multi spindle units for the multiple's processing are rationalized by drilling operations (workpiece-specific drill hole-patterns) in mass production for middle and high lot sizes. With the help of a multi spindle unit, multiple holes can be worked at the same time.

The fixed multi spindle units are usable for drilling, thread cutting, countersinking, reaming and for multi spindle milling. Many tool interfaces such as mimatic<sup>®</sup> mi, HSK, collets, etc. are possible.

Our customers are mainly the automotive industry and machine tool manufacturers (HSC milling machines-, CNC machining centers-, special- and transfer machine manufacturer).





**All Multi Spindle Units Increase Efficiency:**

- Multiple processing of two and more holes in one processing step
- thereby substantial reduction of the processing time per individual part = reduction of pieces costs, extension of manufacturing capacity, lowering of the turnaround times.

**Advantages:**

- Smallest downtimes owing to established mimatic® quality
- Adjustment to most diverse customer needs
- Usable for drilling, thread cutting, countersinking, reaming and milling
- Processing of workpieces with close tolerances due to robust and stable prestressed spindle bearings
- Tool spindles (cartouches) easy and fast exchangeable
- Individual gear ratios are available for each spindle
- High torque rates
- Cooling of the complete unit by a cooling plate
- Lubrication of the drill head over oil-air mixture
- Protection of the tool spindles by locking air
- All spur gears are helical, hardened and polished allow high RPM`s at very low vibrations
- Sealing over friction-optimized seal rings
- Seats of the seal rings on the arbor are coated
- Short delivery times
- High service readiness
- Completely developed, designed and manufactured in Germany.

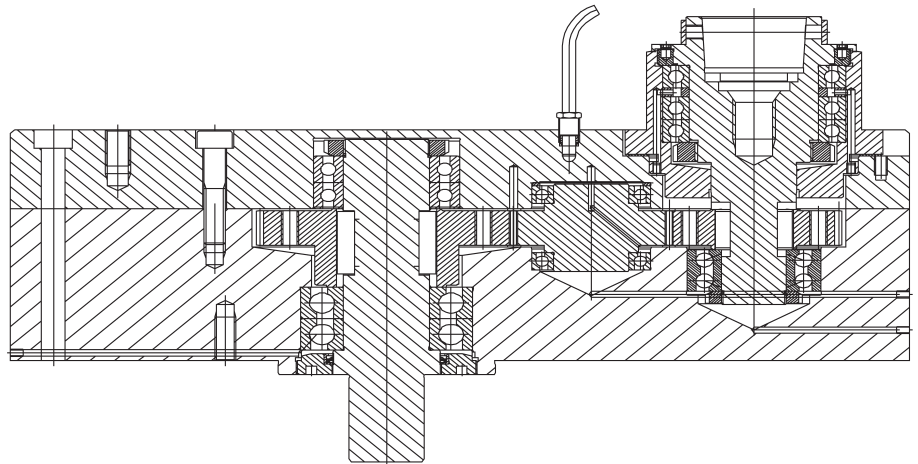


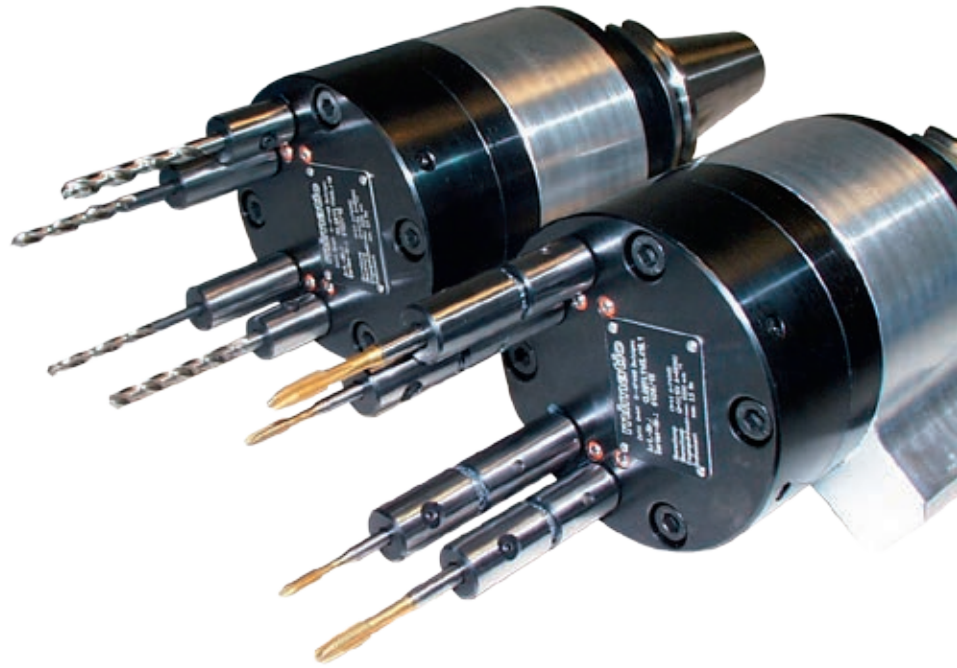
## Structure of Our mimatic® Multi Spindle Units

Tools from most modern materials such as tungsten carbide, cermet or diamond make ever higher demands in reference to rigidity, concentricity and RPM against the machining spindles. Our multi spindle units fulfill this requirement in a high level.

### All Details at One View:

- Housing material from steel or high-strength aluminum
  - All rotary parts recompensed or hardened and polished
  - Spur gears are helical, hardened and polished
  - Spindles with internal coolant
  - RPM up to 15.000
  - The tool holding fixtures are fixed in prestressed precision spindle bearings free from backlash, rigidly supported and have a very exact concentricity
  - Accurate spindle arrangement (spindle distance  $\pm 0.01$  mm) to guarantee continuous workpiece quality
  - mimatic® mi-, HSK -, Komet ABS -, Weldon-, Whistle Notch- or ER collet spindles
- Manufacturing of the machine connection individually for each manufacturer and each kind of machine
  - Realization of maximum rigidity on the one hand and smallest weight as possible on the other hand
  - Thread drilling heads with pitch adjustment by axial compensation or individual RPM of each spindle.

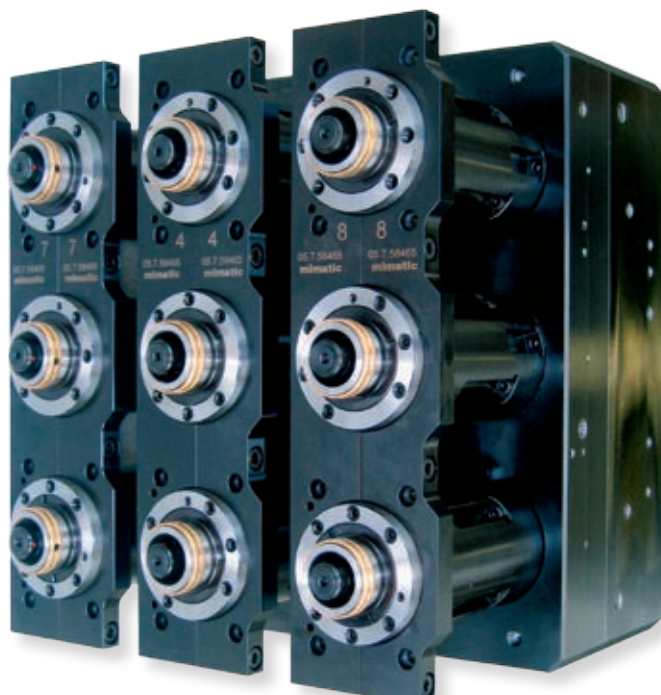




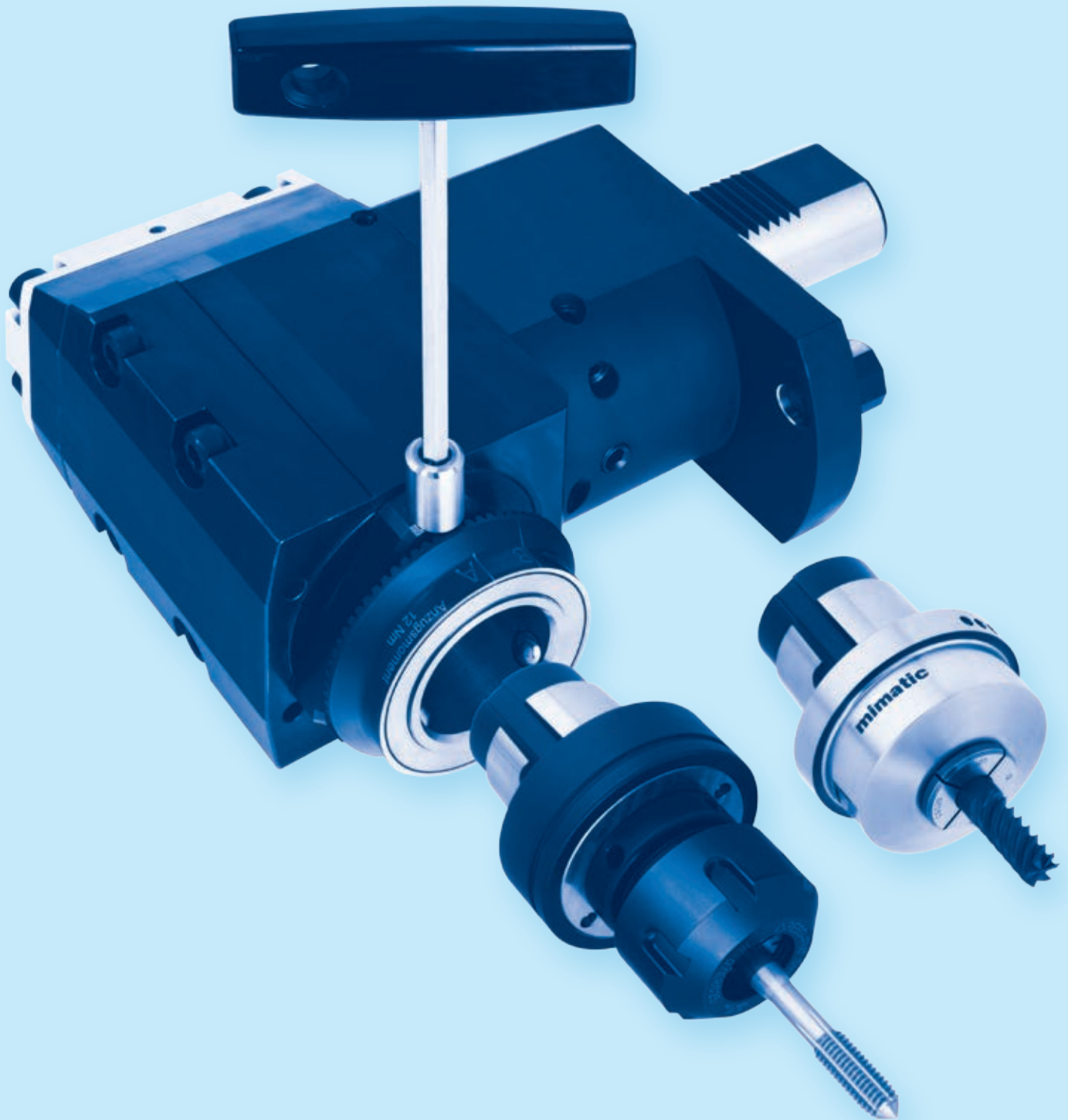
**The following Machines can be modernized with our Multi Spindle Units:**

- Machining centers
- Milling machines
- Transfer machines
- Rotary transfer machines

The size and form of the drilling head individually per drill hole-pattern and within the limitations of your machine.



**Modular Quick Change  
Systems mi and Hydroflex**



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Table of Contents

	Size	Standard	Page
<b>Basic Toolholders</b> 	SK 40/50 BT 40/50 HSK 63	DIN 69871 MAS-BT DIN 69893	472 472 472
<b>Collet Chucks</b> 	ER 11 - ER 40	DIN 6499	473
<b>Combination Shell End Mill Arbors</b> 	Ø 16-27 mm		473
<b>Weldon Toolholders Whistle-Notch Toolholders</b> 	Ø 6-25 mm Ø 1/4"-1/0"	DIN 1835 B DIN 1835 B	474 474
<b>Synax® Tapping Quick Change Holders</b> 	Ø 3,5-16 mm		475
<b>Softsynchro Chucks (Licence Emuge)</b> 	M4-M12		475
<b>Hydraulic Chucks</b> 	Ø 12 + 20 mm Accessories		473 476
<b>Shrink fit Chucks</b> 	Ø 8-20 mm Accessories		477 477
<b>Accessories</b> 	Blank Test Mandrel Tool-presetting unit Wrench Assembling jig Protection plug		477 477 478 479 479 479
<b>Hydroflex</b> 	Ø 20-25 mm		482



# mimaticMi

## Advantages

- Universal tool clamping system for all production areas
- Presetting of the tools off-line by length adjustment screw
- Tool change within seconds
- Concentricity of the interface < 0,002 mm
- Secure holding force by form-locking
- Very short design
- Toolholders in different sizes
- All toolholders with internal coolant

## Use on CNC-Turning Machines and Machining Centers

Driven toolholders for all turning machines, machining centers, milling machines, turn/mill centers as well as transfer and special machines. Driven toolholders / basic holders are available in many different versions:

- Shafts such as VDI, SK, BT, CAT, HSK, Capto, ...
- Straight and angle units
- Single or multi-spindle versions
- Gear multiplication or reduction
- Internal and/or external coolant supply
- Central or offset

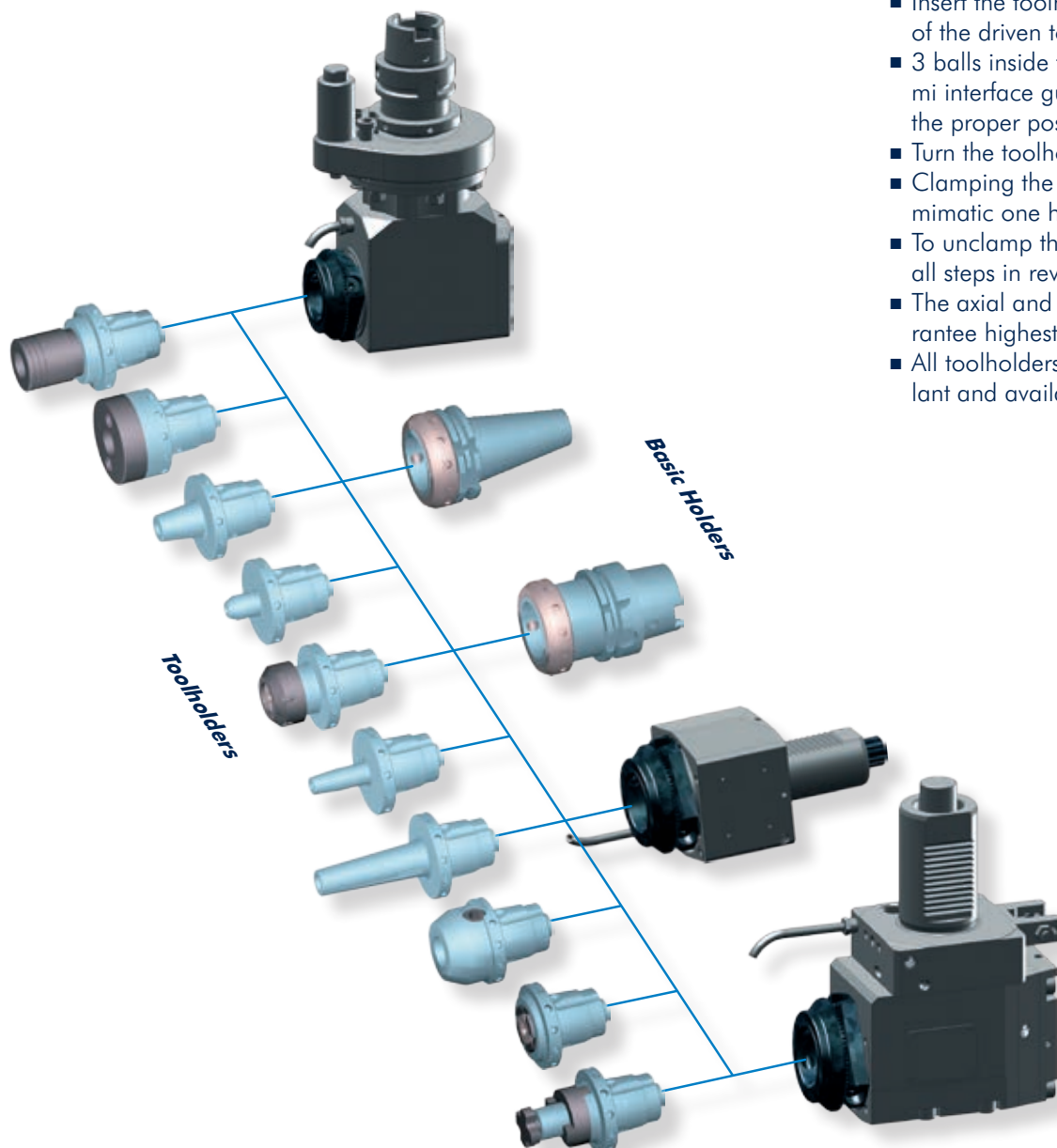
## Modular Toolholders in Different Sizes for All Production Areas

- Tapping toolholders
- Collet toolholders (internal and external nut)
- Hydro-Flex hydraulic toolholders
- Thread tightening toolholder cutters
- Morse taper shank toolholders
- Weldon and Whistle Notch toolholders
- Shell mill toolholders

All toolholders are available for use with your presetter.

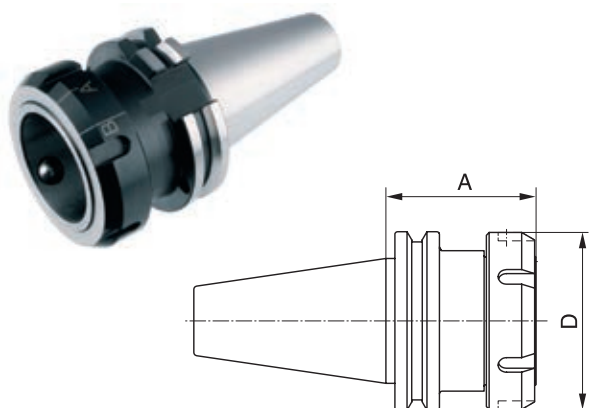
## mi Operation

- Insert the toolholder into the spindle of the driven toolholder
- 3 balls inside the modular mimatic mi interface guide the toolholder into the proper position
- Turn the toolholder until it is locked
- Clamping the sleeve nut by using the mimatic one hand key
- To unclamp the toolholder just follow all steps in reverse order
- The axial and conical surface guarantee highest concentricity
- All toolholders are with internal coolant and available in different sizes



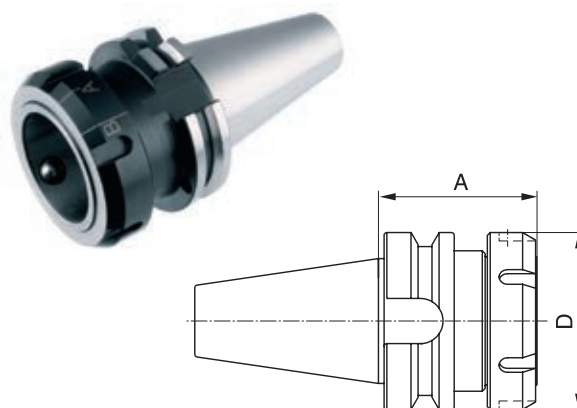
## Basic Holders

### DIN 69871 AD/B



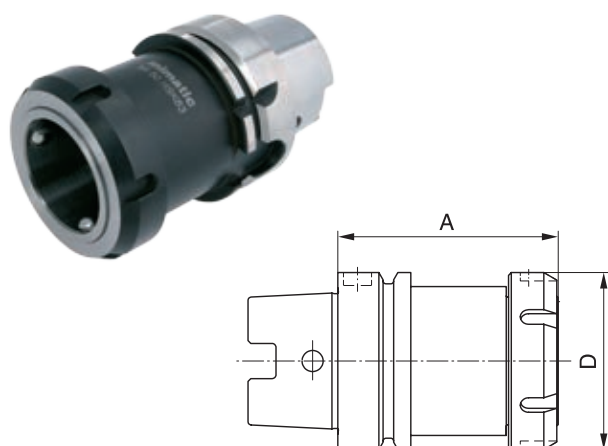
Order No.	Size	SK	A mm	D mm
121454	mi 32	SK 30	53,5	45
155404	mi 40	SK 40	53,5	54
155502	mi 50	SK 40	53,5	63
155481	mi 50	SK 50	53,5	63
155477	mi 63	SK 50	58,5	77

### MAS-BT JIS 6339



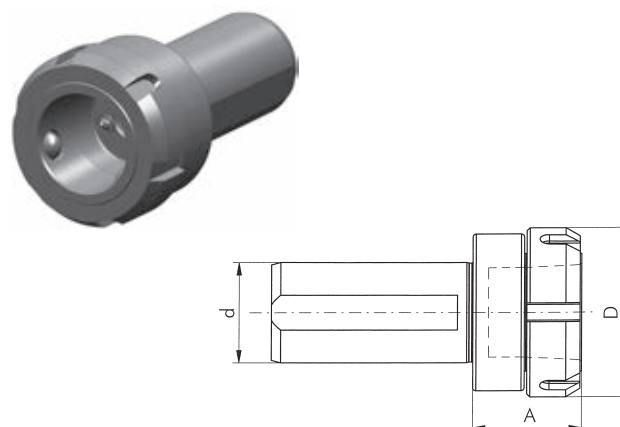
Order No.	Size	BT	A mm	D mm
121481	mi 32	BT 30	45,0	45
121512	mi 40	BT 40	48,5	54
155469	mi 50	BT 40	56,5	63
155457	mi 50	BT 50	61,5	63
121552	mi 63	BT 50	70,0	77

### DIN 69893 A



Order No.	Size	HSK	A mm	D mm
155410	mi 40	HSK 50	60,0	54
155458	mi 50	HSK 63	78,5	63
121562	mi 50	HSK 100	85,0	63
121577	mi 63	HSK 100	100,0	77

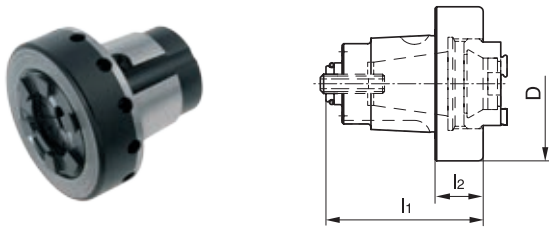
### Cylindrical shank with clamping surface



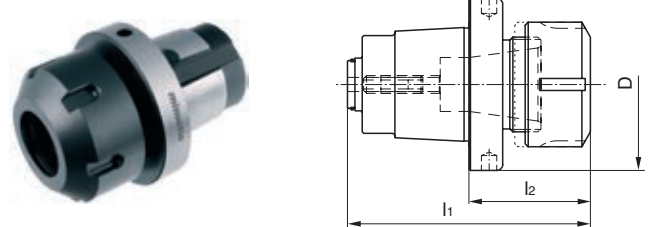
Order No.	Size	Ø d mm	A mm	D mm
180538	mi 40	32	35	54

## Collet Chucks DIN 6499 – Type ER

- short type
- clamping nut inside
- with internal coolant



- long type
- clamping nut outside
- with internal coolant

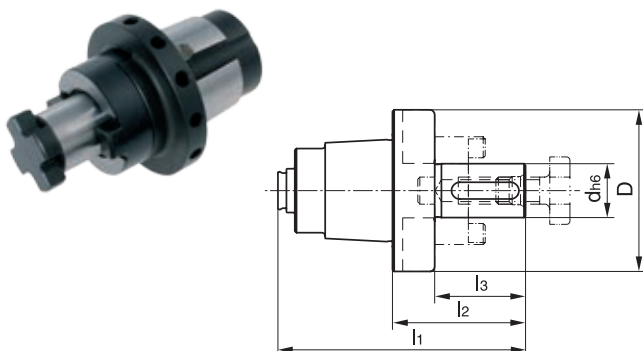


Order No.	Size	Collet	l1 mm	l2 mm	D mm
121479	mi 32	ER 11	41,5	15	42
155357	mi 32	ER 16	41,5	15	42
171839	mi 32	ER 20	59,0	32	36
155388	mi 40	ER 16	45,0	11	48
155335	mi 40	ER 20	49,0	15	48
155367	mi 40	ER 25	55,0	21	48
155418	mi 50	ER 25	55,0	14	58
155460	mi 50	ER 32	59,0	18	58
155471	mi 63	ER 32	63,0	14	75
155496	mi 63	ER 40	69,0	20	75

Order No.	Size	Collet	l1 mm	l2 mm	D mm
155358	mi 32	ER 11	72,5	46,0	42
155319	mi 32	ER 16	64,5	38,0	42
121460	mi 40	ER 16	73,0	39,0	48
121502	mi 40	ER 20	80,0	46,6	48
155448	mi 50	ER 25	82,0	41,0	58
155445	mi 50	ER 32	88,0	47,0	58
155475	mi 63	ER 32	96,0	47,0	75
155451	mi 63	ER 40	94,5	45,5	75

## Combination Shell End Mill Arbor

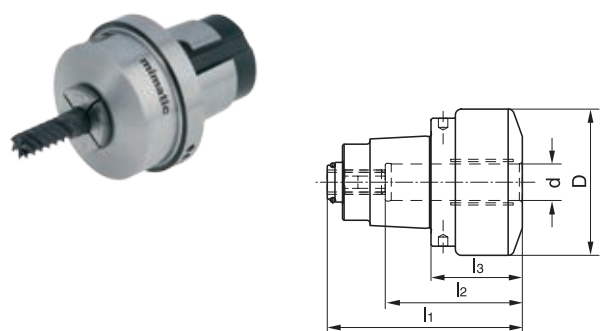
without internal coolant



Order No.	Size	l1 mm	l2 mm	l3 mm	d h6 mm	D mm
121486	mi 32	66,0	39,5	27	16	42
155365	mi 40	73,5	39,5	25	16	48
155447	mi 50	82,0	41,0	27	16	58
155413	mi 50	88,0	47,0	31	22	58
155512	mi 63	96,0	47,0	31	22	75
155465	mi 63	98,0	49,0	33	27	75

## Hydraulic Chuck

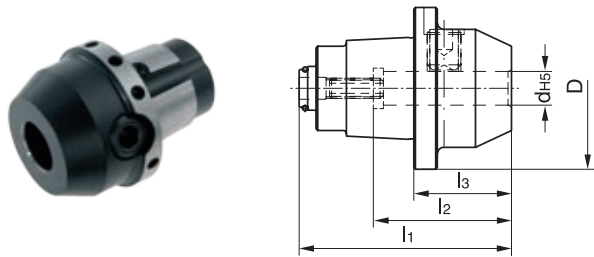
with internal coolant



Order No.	Size	l1 mm	l2 mm	l3 mm	d h6 mm	D mm
155391	mi 40	64	45	30	12	48
155417	mi 50	71	52	30	20	58

## Weldon Toolholder DIN 1835 B

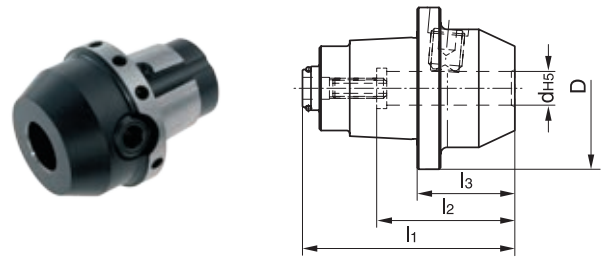
with internal coolant



Order No.	Size	l1 mm	l2 mm	l3 mm	d H5 mm / "	D mm
121436	mi 32	52,5	37	26,0	6	42
121478	mi 32	52,5	37	26,0	8	42
121469	mi 32	55,5	41	29,0	10	42
121439	mi 32	57,5	46	31,0	12	42
121449	mi 32	52,5	37	26,0	1/4"	42
121472	mi 32	55,5	41	29,0	3/8"	42
121448	mi 32	57,5	46	31,0	1/2"	42
155330	mi 40	60,0	37	26,0	6	48
155346	mi 40	60,0	37	26,0	8	48
155321	mi 40	63,0	41	29,0	10	48
155331	mi 40	65,0	46	31,0	12	48
155326	mi 40	65,0	46	31,0	14	48
155379	mi 40	68,0	49	34,0	16	48
121497	mi 40	60,0	37	26,0	1/4"	48
121475	mi 40	63,0	41	29,0	3/8"	48
121474	mi 40	65,0	46	31,0	1/2"	48
121499	mi 40	68,0	49	34,0	5/8"	48
155419	mi 50	65,0	37	24,0	6	58
155411	mi 50	66,0	37	25,0	8	58
155400	mi 50	70,0	41	29,0	10	58
155406	mi 50	73,0	46	32,0	12	58
155412	mi 50	73,0	46	32,0	14	58
155407	mi 50	74,0	49	33,0	16	58
155427	mi 50	78,0	51	37,0	20	58
121489	mi 50	65,0	37	24,0	1/4"	58
121529	mi 50	40,0	41	29,0	3/8"	58
121525	mi 50	73,0	46	32,0	1/2"	58
121520	mi 50	75,0	49	34,0	5/8"	58
121526	mi 50	78,0	51	37,0	3/4"	58
155470	mi 63	81,0	37	32,0	6	75
155459	mi 63	82,0	37	33,0	8	75
155490	mi 63	85,0	41	36,0	10	75
155509	mi 63	88,5	46	39,5	12	75
155463	mi 63	88,5	46	39,5	14	75
155482	mi 63	91,0	49	42,0	16	75
155474	mi 63	93,0	51	44,0	20	75
155464	mi 63	110	59	61,0	25	75
166815	mi 63	81,0	37	32,0	1/4"	75
166805	mi 63	85,0	41	36,0	3/8"	75
166813	mi 63	88,5	46	39,5	1/2"	75
166807	mi 63	91,0	49	42,0	5/8"	75
166804	mi 63	93,0	51	44,0	3/4"	75
166812	mi 63	110	59	61,0	1/0"	75

## Whistle Notch Toolholder DIN 1835 E

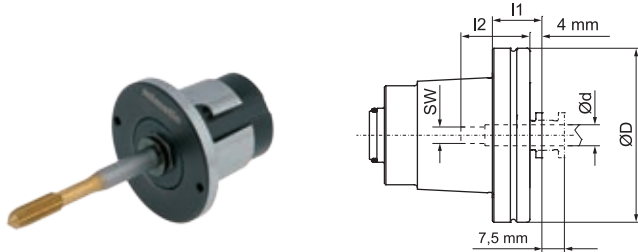
with internal coolant



Order No.	Size	l1 mm	l2 mm	l3 mm	d H5 mm / "	D mm
121463	mi 32	52,5	36	26,0	6	42
121464	mi 32	52,5	36	26,0	8	42
121443	mi 32	55,5	40	29,0	10	42
121453	mi 32	57,5	45	31,0	12	42
121442	mi 32	52,5	36	26,0	1/4"	42
121485	mi 32	55,5	40	29,0	3/8"	42
121480	mi 32	57,5	45	31,0	1/2"	42
155369	mi 40	60,0	36	26,0	6	48
155363	mi 40	60,0	36	26,0	8	48
155370	mi 40	63,0	40	29,0	10	48
155364	mi 40	65,0	45	31,0	12	48
155333	mi 40	65,0	45	31,0	14	48
155382	mi 40	68,0	48	34,0	16	48
121492	mi 40	60,0	36	26,0	1/4"	48
121493	mi 40	63,0	40	29,0	3/8"	48
121455	mi 40	65,0	45	31,0	1/2"	48
121494	mi 40	68,0	48	34,0	5/8"	48
169197	mi 40	89,0	50	55,0	20	52
155416	mi 50	65,0	36	24,0	6	58
155401	mi 50	66,0	36	25,0	8	58
155383	mi 50	70,0	40	29,0	10	58
155408	mi 50	73,0	45	32,0	12	58
155435	mi 50	73,0	45	32,0	14	58
155436	mi 50	75,5	48	34,5	16	58
155384	mi 50	78,0	50	37,0	20	58
166816	mi 50	65,0	36	24,0	1/4"	58
155440	mi 50	70,0	40	29,0	3/8"	58
155434	mi 50	73,0	45	32,0	1/2"	58
155428	mi 50	75,0	48	34,0	5/8"	58
155385	mi 50	78,0	50	37,0	3/4"	58
166104	mi 63	81,0	36	32,0	6	75
166105	mi 63	82,0	36	33,0	8	75
166110	mi 63	85,0	40	36,0	10	75
166112	mi 63	88,5	45	39,5	12	75
166113	mi 63	88,5	45	39,5	14	75
166114	mi 63	91,0	48	42,0	16	75
166115	mi 63	93,0	50	44,0	20	75
166116	mi 63	110	56	61,0	25	75
166797	mi 63	81,0	36	32,0	1/4"	75
166799	mi 63	85,0	40	36,0	3/8"	75
166796	mi 63	88,5	45	39,5	1/2"	75
166803	mi 63	91,0	48	42,0	5/8"	75
166798	mi 63	93,0	50	44,0	3/4"	75
166795	mi 63	110	56	61,0	1/0"	75

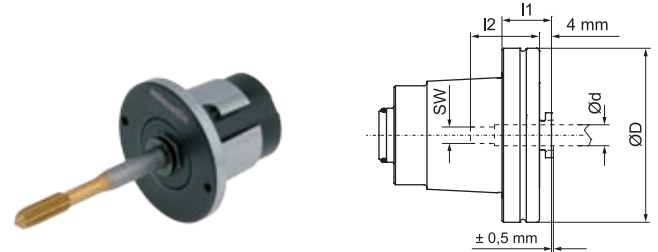
## SYNAX® Tapping Quick Change Holder

without internal coolant,  
with synchronisation and length compensation



Order No.	Size	l1 mm	l2 mm	d mm	D mm	SW
121510	mi 40	17,0	25	3,5	48	2,7
155397	mi 40	17,0	25	4,5	48	3,4
155377	mi 40	17,0	27	6,0	48	4,9
155378	mi 40	17,0	27	8,0	48	6,2
155403	mi 40	38,0	28	9,0	48	7,0
121451	mi 40	38,0	29	10,0	48	8,0
121498	mi 40	38,0	30	12,0	48	9,0
155450	mi 50	16,5	25	3,5	58	2,7
155487	mi 50	16,5	25	4,5	58	3,4
155422	mi 50	16,5	27	6,0	58	4,9
155497	mi 50	16,5	27	7,0	58	5,5
155455	mi 50	16,5	27	8,0	58	6,2
155423	mi 50	16,5	28	9,0	58	7,0
155466	mi 50	16,5	29	10,0	58	8,0
155472	mi 50	44,0	36	11,0	58	9,0
155449	mi 50	16,5	30	12,0	58	9,0
155479	mi 50	44,0	33	16,0	58	12,0

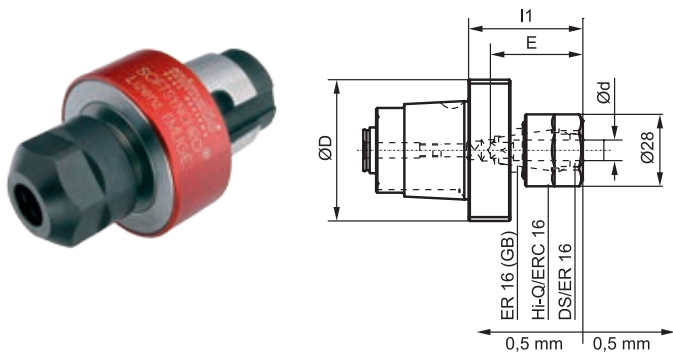
with internal coolant (70 bar),  
only synchronisation



Order No.	Size	l1 mm	l2 mm	d mm	D mm	SW
155389	mi 40	17,0	27	6	48	4,9
121522	mi 40	17,0	27	8	48	6,2
121515	mi 40	38,0	28	9	48	7,0
121504	mi 40	38,0	29	10	48	8,0
121517	mi 40	38,0	30	12	48	9,0
155432	mi 50	16,5	27	6	58	4,9
172720	mi 50	16,5	27	7	58	5,5
155498	mi 50	16,5	27	8	58	6,2
155473	mi 50	16,5	28	9	58	7,0
155467	mi 50	16,5	29	10	58	8,0
155446	mi 50	16,5	30	12	58	9,0
121534	mi 50	44,0	33	16	58	12,0

## Softsynchro Chuck (Licence Emuge)

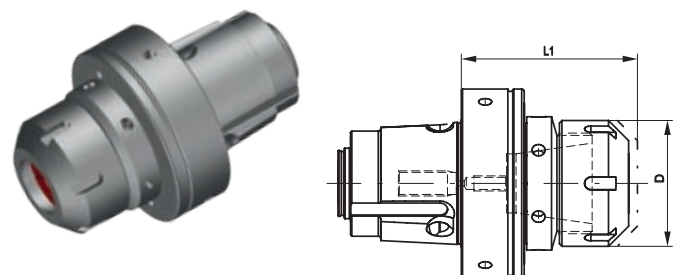
with internal coolant,  
with push and pull length  
compensation 0,5 mm



Order No.	Size	Collet	Thread	l1 mm	d mm	D mm
121503	mi 40	ER-GB 16	M4-M12	47,5	4,5-10	45
121530	mi 50	ER-GB 16	M4-M12	44,5	4,5-10	50

## Chuck for GB Collets

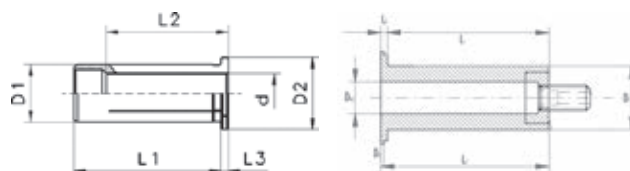
with internal coolant,  
with push and pull length  
compensation ±0,5 mm



Order No.	Size	Collet	L1 mm	D mm
121518	mi 40	ER 20 GB(1-13)	60	28
155488	mi 50	ER 25 GB(1-16)	60	42
155491	mi 63	ER 32 GB(2-20)	70	50

## Accessory for Hydraulic Chucks

### Sleeve



without horizontal adjustment

with horizontal adjustment

Order No.	D1 mm	d h6 mm / "	L1 mm	L2 mm	L3 mm	D2 mm
119790	12	3	40	29	4	16
119793	12	1/8"	40	29	4	16
119797	12	4	40	29	4	16
119798	12	3/16"	40	29	4	16
119819	12	5	40	29	4	16
119812	12	6	40	36	4	16
119813	12	1/4"	40	36	4	16
119791	12	7	40	37	4	16
119799	12	5/16"	40	37	4	16
119810	12	8	40	37	4	16
119792	12	9	40	37	4	16
119815	12	3/8"	40	40	4	16
119814	12	10	40	40	4	16
119816	20	3	50	28	4	25
119823	20	1/8"	50	28	4	25
119817	20	4	50	28	4	25
119837	20	3/16"	50	28	4	25
119800	20	5	50	28	4	25
119801	20	6	50	36	4	25
119822	20	1/4"	50	36	4	25
119818	20	7	50	38	4	25
119839	20	5/16"	50	37	4	25
119820	20	8	50	37	4	25
119802	20	9	50	38	4	25
119838	20	3/8"	50	38	4	25
119824	20	10	50	40	4	25
119825	20	11	50	40	4	25
119830	20	7/16"	50	45	4	25
119826	20	12	50	45	4	25
119821	20	1/2"	50	45	4	25
119827	20	14	50	45	4	25
119846	20	9/16"	50	45	4	25
119829	20	5/8"	50	48	4	25
119828	20	16	50	48	4	25
119847	25	3	56	29	4	30
119848	25	4	56	29	4	30
119831	25	5	56	29	4	30
119849	25	6	56	37	4	30
119832	25	7	56	37	4	30
119833	25	8	56	37	4	30
119834	25	9	56	38	4	30
119850	25	10	56	40	4	30
119835	25	12	56	46	4	30
119851	25	14	56	47	4	30
119836	25	16	56	48	4	30
119841	25	18	56	48	4	30
119842	25	20	56	50	4	30
119844	32	6	60	36	4	36

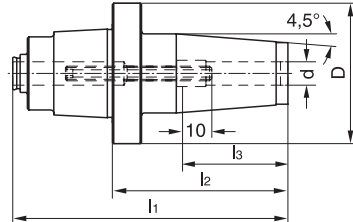
Order No.	D1 mm	d h6 mm / "	L1 mm	L2 mm	L3 mm	D2 mm
119857	32	1/4"	60	36	4	36
119845	32	7	60	37	4	36
119879	32	5/16"	60	36	4	36
119852	32	8	60	36	4	36
119855	32	9	60	37	4	36
119884	32	3/8"	60	37	4	36
119864	32	10	60	40	4	36
119853	32	11	60	40	4	36
119858	32	12	60	45	4	36
119856	32	1/2"	60	45	4	36
119859	32	13/16"	60	45	4	36
119865	32	14	60	46	4	36
119854	32	15/16"	60	46	4	36
119861	32	5/8"	60	46	4	36
119866	32	16	60	48	4	36
119870	32	18	60	49	4	36
119878	32	3/4"	60	50	4	36
119877	32	20	60	50	4	36
119867	32	25	60	56	4	36

### with horizontal adjustment

119909	20	6	50	52	-	28
119889	20	8	50	52	-	28
152696	20	10	50	52	-	28
119910	20	12	50	52	-	28
119901	20	14	50	52	-	28
119911	20	16	50	52	-	28
119892	20	18	50	52	-	28
119893	25	10	56	59	-	32
119912	25	12	56	59	-	32
119894	25	14	56	59	-	32
119895	25	16	56	59	-	32
167144	25	18	56	59	-	32
167045	25	20	56	59	-	32

## Shrink fit Chuck

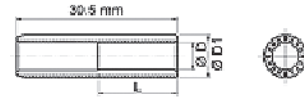
with internal coolant



Order No.	Size	l1 mm	l2 mm	l3 mm	d h6 mm	D mm
155381	mi 40	94	60	36	8	48
121482	mi 40	94	60	42	10	48
155334	mi 40	99	65	47	12	48
121501	mi 40	104	70	50	16	48
155421	mi 50	101	60	36	8	58
155409	mi 50	101	60	42	10	58
155444	mi 50	106	65	47	12	58
155438	mi 50	106	65	47	14	58
155430	mi 50	111	70	50	16	58
155431	mi 50	116	75	50	18	58
155454	mi 50	116	75	52	20	58

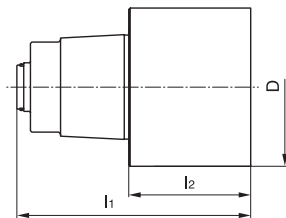
## Accessory for Shrink fit Chucks

Sleeve



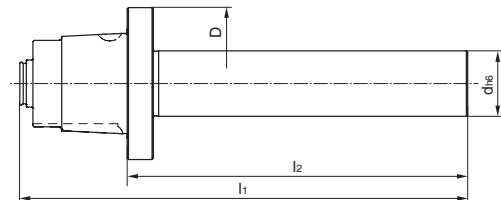
Order No.	L mm	L1 mm	d h6 mm	D mm
119807	30,5	7,5	2,5	8
119787	30,5	9,0	3,0	8
119808	30,5	10,5	3,5	8
119809	30,5	12,0	4,0	8
119788	30,5	13,5	4,5	8
119789	30,5	15,0	5,0	8
119796	30,5	16,5	5,5	8

## Blank



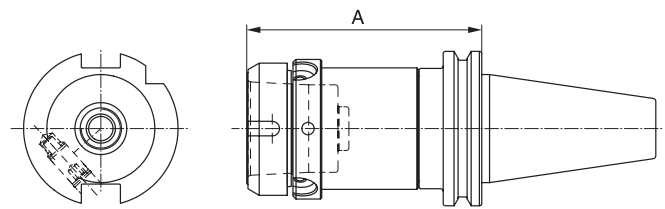
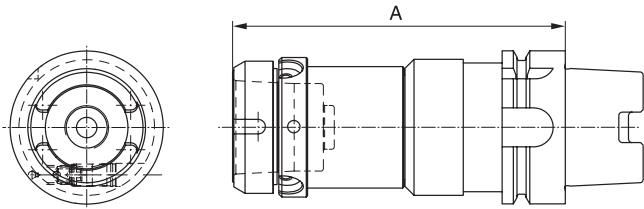
Order No.	Size	l1 mm	l2 mm	D mm
121457	mi 32	76,5	50	42
166791	mi 40	94,0	60	48
166789	mi 50	111,0	70	58
121557	mi 63	129,0	80	75

## Test Mandrel



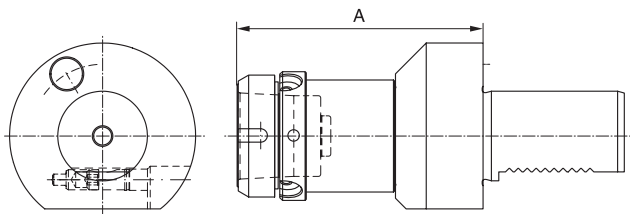
Order No.	Size	l1 mm	l2 mm	d h6 mm	D mm
170569	mi 25		110		14
172991	mi 32		110		18
156208	mi 40		130		20
156082	mi 50		130		25
172992	mi 63		150		32

## Tool Presetting Unit



Order No.	Size	HSK	A mm
171098	mi 25	63	130,0
155352	mi 32	63	130,0
155380	mi 40	63	134,5
173224	mi 40	100	143,0
155429	mi 50	63	136,9
168301	mi 50	100	143,0
166990	mi 63	63	147,0
169267	mi 63	100	155,0

Order No.	Size	SK	A mm
121471	mi 40	40	95
121491	mi 40	50	128
155405	mi 50	40	97
121527	mi 50	50	140
155504	mi 63	50	140



Order No.	Size	VDI	A mm
155368	mi 40	40	108
155356	mi 50	40	110
155372	mi 40	50	108
121524	mi 50	50	110



## Accessories for mi-system

### Complete Wrench for One-hand Operation



Order No.	Size
170734	mi 25, mi 32, mi 40
170419	mi 50, mi 63

### Torque Wrench for Gearing



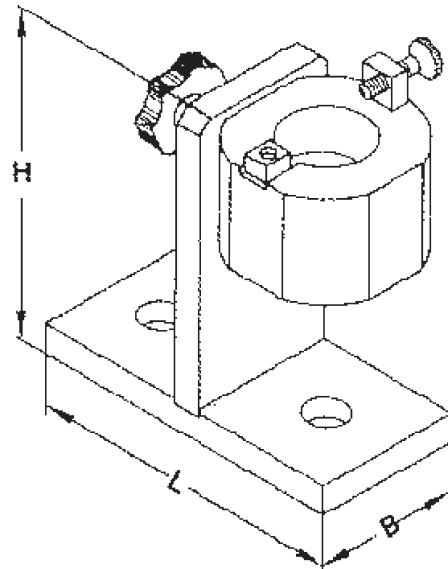
Order No.	Size
180356	mi 50, mi 63

### Socket Wrench for Torque Wrench

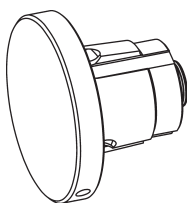


Order No.	Size	L mm	Wrench size
173988	mi 25, mi 32, mi 40	50	1/4"
173985	mi 50, mi 63	50	1/4"

### Assembling Jig



### Protection Plug



Order No.	Size
174460	mi 32
174458	mi 40
174457	mi 50
174459	mi 63

Order No.	Size	L mm	B mm	H mm
166774	SK 40	130	64	136
166775	HSK 63	130	64	136
121571	VDI 40	130	64	136

# mimatic mi – An Epitome of BlueCompetence

**BLUECOMPETENCE**

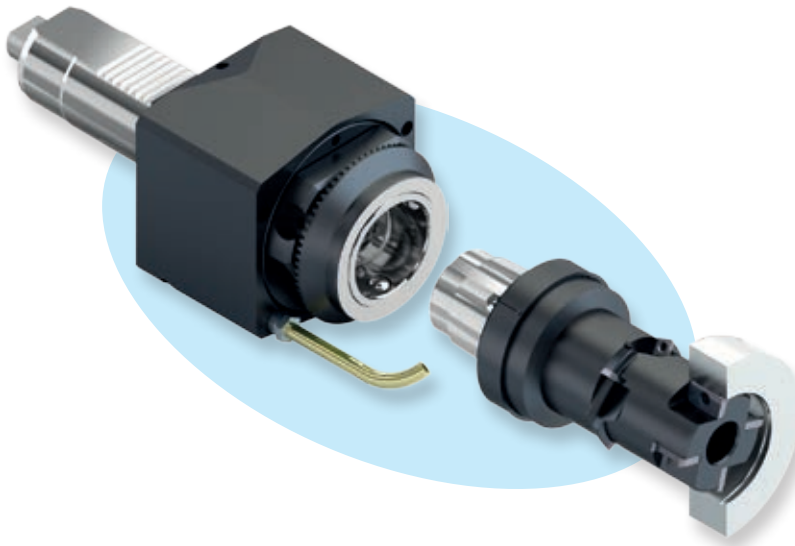
Alliance Member

Partner of the Engineering Industry Sustainability Initiative

## mimatic® Tool Systems for Sustainability and Efficiency

Tools according to the policy of BLUECOMPETENCE are marked in this catalogue. More information on the program (Initiative) of the VDMA see pages 16-17.

## mi – The Integrated Tool Solution = Live Tool + mi Interface + mi Tool



### Advantages

#### mi – Interface, Driven Tool Sided

- short taper + planar arrangement
- shorter construction
- convenient single-hand operation
- symmetrical 3-point intake

#### mi – Fast Change

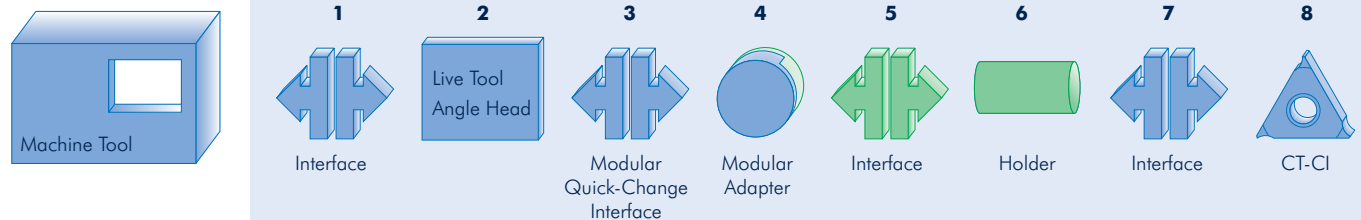
- in the machine
- minimal tool changing time
- no pre-adjustment necessary

#### mi – Chipping Tool

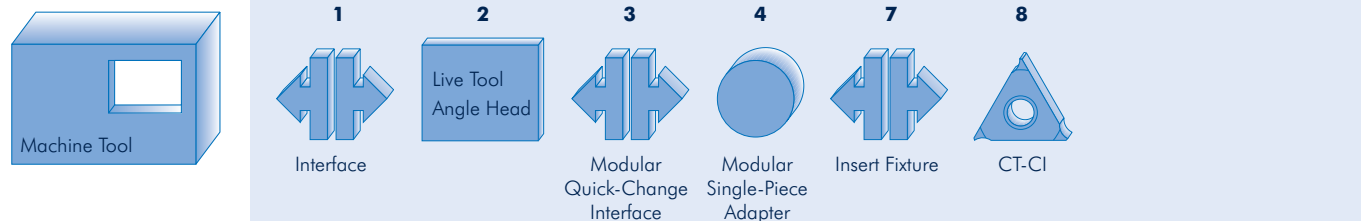
- compact – one-piece design
- milling, counterboring, planing, chamfering
- shells, shaft, ...

## BlueCompetence – Implemented with mimatic mi

### Old = Industrial Standard



### New = mimatic Innovation



# mi System Solutions for Special Production Assignments

**Live Tools with mi quick-change interface must be adapted to the machining task in your dimensioning, and/or take this task into account:**

- as regards the cutting forces and/or torque occurring and
- as regards the precision required » rigidity of the system

It is thus necessary to describe the planned machining processes as exactly as possible, so that the optimal technical and economic suggestion can be worked out. Because then it is ensured that the requirements for precision, efficiency and sustainability are fulfilled.

**Live Tools - mi**  
Straight Unit

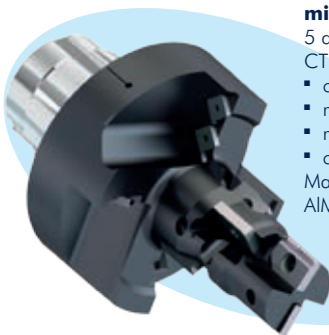


**Live Tools - mi**  
Angle Unit



**mi - Milling Tool**

- 5 different CT plates
- chamfering
- milling threads
- milling planes
- counterboring
- Material: AlMgSi1 (DIN 3.2315)



**mi - Cutting Tool**

- jiggering
- chamfering
- Materials: 1. 20MnVS6 2. X15 CrNiSi20 (DIN 1.4828)



**mi - Cutting Tool**

- twist drill
- jiggering
- planing
- Material: Al-Si7Mg



**mi - Cutting Tool**

- drilling
- planing
- VHM twist drill
- chamfering



**mi - Milling Tool**

- groove milling
- Material: steel



**mi - Milling Tool**

- groove milling
- Material: steel



**mi - Milling Tool**

- contour milling
- Material: 16MnCrS5



**mi - Counterboring Tool**

- (jiggering)
- preturning
- finish-turning
- planing
- chamfering
- Material: Al-Si7Mg



**mi - Milling Tool**

- groove milling
- Material: steel



**mi - Milling Tool**

- groove milling
- Material: steel



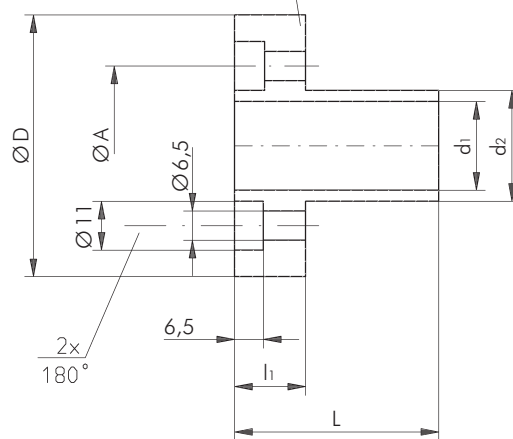
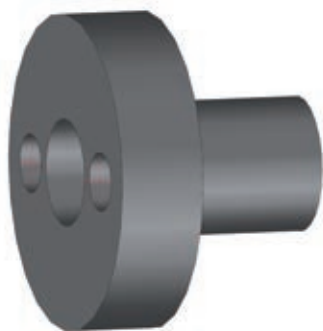
# HydroFLEX

Vibration reduced tool clamping system for all applications  
(reaming, drilling, milling, tapping, ...)

- Concentricity < 0,002 mm
- Holding forces up to 290 Nm
- Usability in our mimatic® driven toolholders



Hydroflex Expansion  
Clamping Sleeve D20



Sleeves see page 516

Order No.	d1 mm	d2 mm	D	L	l1	A	for clamping bolt DIN 6912
113056	20	25	59	46	16	36	M6 x16
113134	25	32	67	50	16	44	M6 x16

### Useful facts about vibrations of boring bars

The result of vibrations many times is a bad surface and wear of the cutting edges ending as a negative production output. The origin of vibrations could be caused by:

- If the boring bar is clamped in a worn-out holder, the result could be that the angle of cut from the boring bar is not correct
- Not enough machine stability
- Flat cutting angle
- High cutting pressure forced by a high feed

### Advantages of the modular hydraulic clamping system

- Same characteristics as „Hydraulic spindles“ – but with less expense!
- Concentricity < 0.002 mm
- Transferable torque > 80 Nm – with 12.000 RPM capabilities
- Unique tool holding system absorbs vibrations during machining: drilling, milling, reaming, threading
- Longer tool-live and a 60% longer tool length is possible
- No concentricity errors regarding the interface
- Tool pre-setting out of the machine is achievable using length adjustable reducing sleeves – Gives you more UP time!
- Reducing sleeves available from 6-20 mm
- Tool live improvement up to 100 %
- Extremely stable and rigid design
- Retention of hydraulic clamping sleeves as high as 290 Nm
- Concentricity is consistent through-out the interface range, unlike many competitive systems
- Tap sleeves are also available

### Exchange of Hydro-Flex sleeve

- Unclamp both axial screws
- Remove the Hydro-Flex in unclamped condition
- Never clamp the spindle outside and/or without a tool!
- Only clamp the sleeve together with tools of cylindrical shank – no Weldon or Whistle Notch!

### Tool pre-setting

Outside of the CNC turning machine or CNC machining center you can preset your cutting tool with the sleeve. With the reduction sleeve you can use a stop (external: M16 x 1,5 / internal: M8) (M8 / L = 16 mm).

With the reduction sleeve you can use a stop (external: M16 x 1,5 / internal: M8) (M8 / L = 16 mm).

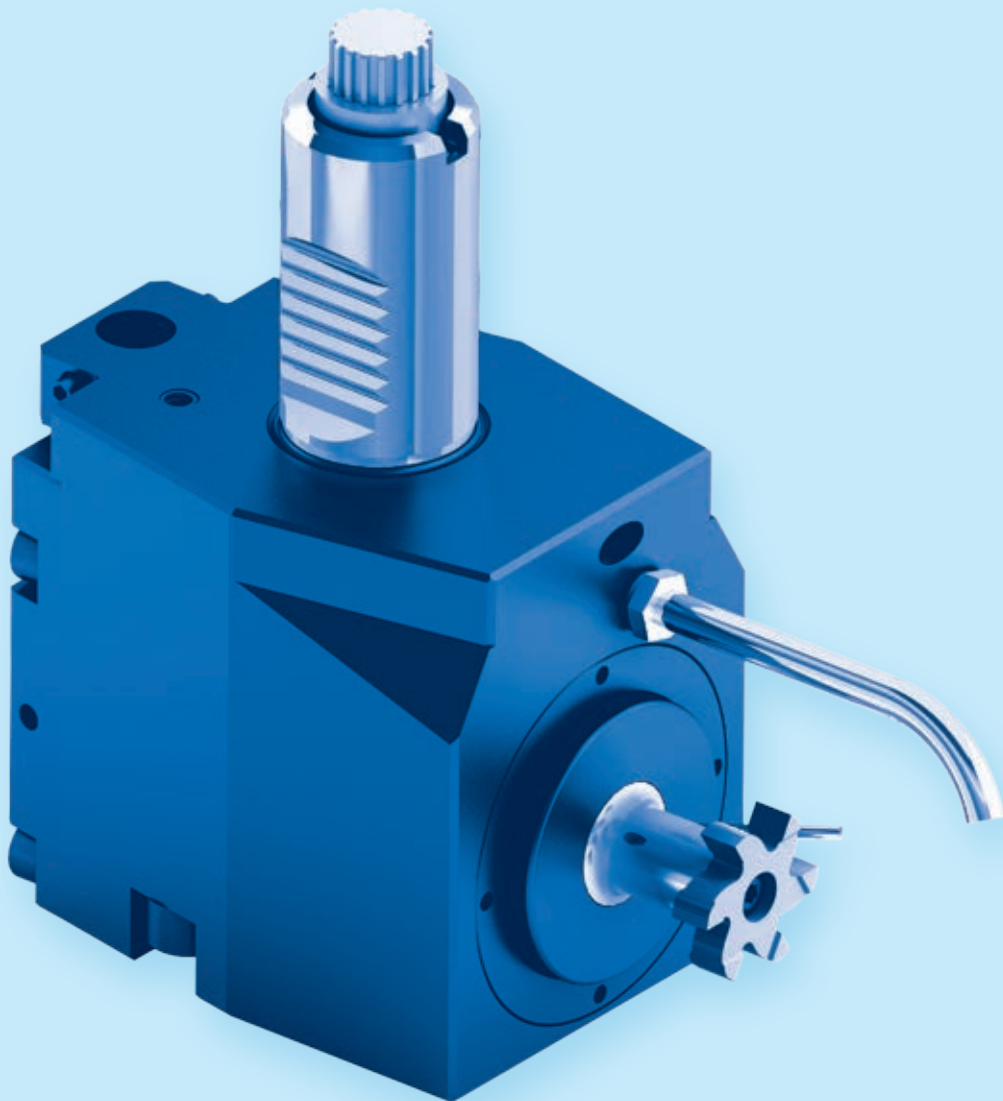
Reduction sleeve sizes:

L = 52 mm, l = 37 mm, D = 20 mm  
d = 6, 7, 8, 10, 12, 14, 16, 18 mm

Tapping sleeve sizes:

Clamping sleeves d = 10, 12 , 16 mm (D = 20 mm)  
Stop SW 5 / 5,5 / 6,2 / 7 / 9  
Hydro-Flex sleeve

**Compact Driven Toolholders  
with Interface for Carbide Inserts**



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

**AGMILL**

Connectable in accordance with  
**BLUECOMPETENCE** » mimatic mi  
» Driven Tool Holders

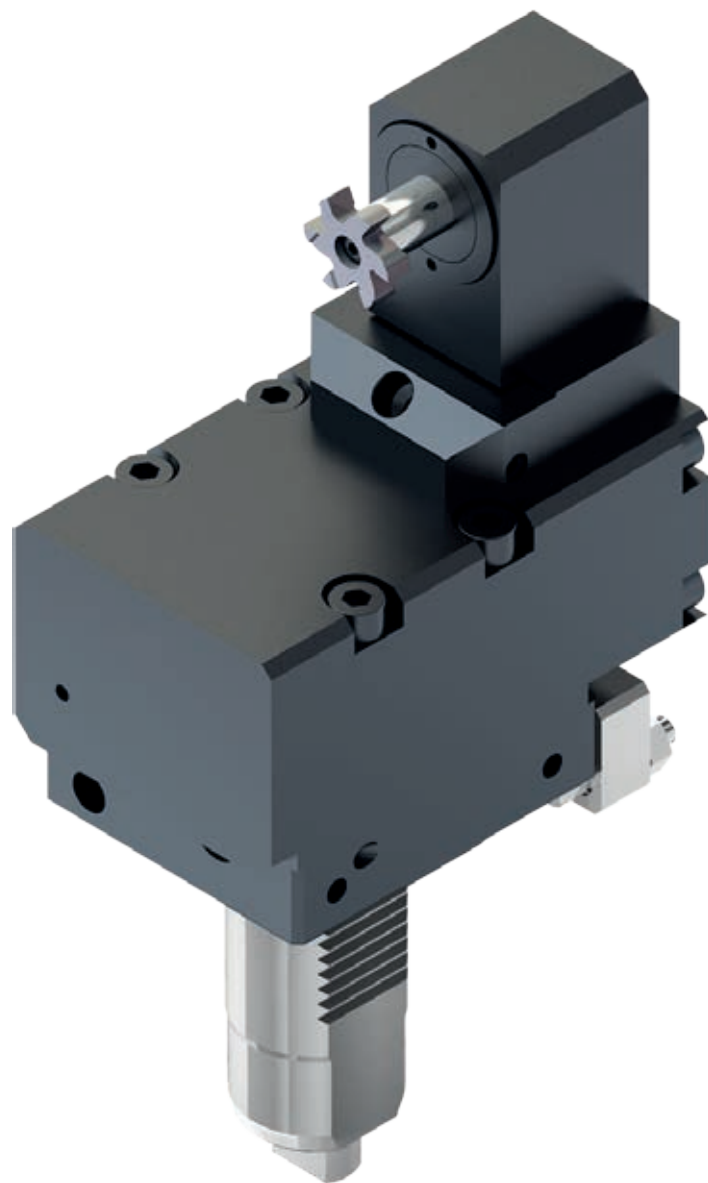
## The Compact and Efficient Cutting Solution

Thanks to mimatic's cross-system expertise in the fields of driven tool holders and precision carbide steel cutting tools, mimatic has developed a compact new cutting solution.

The interfaces and holders that are usually located between the powered tool and circular milling insert are eliminated.

Directly on the main shaft of the powered tool there is now the polygonal insert fixture for the cutting of threads, grooves and cut-ins.

This provides the following advantages: Due to the exclusive use of only one highly-accurate polygonal interface, the true running is improved and the service life is increased. The insert in the machine can be changed using only one screw. Thanks to planar arrangement and self-centring, there is no need for measuring and pre-adjustment! AGMILL thus offers resource efficiency and sustainability.





# AGMILL

## Objective

**„Foresight process“ identifies the future themes in research and technology on behalf of the BMBF**  
(Federal Ministry of Education and Research)  
**„These ‚future fields of new cutting‘ show an intersystemic character!“** (quote)



Bundesministerium  
für Bildung  
und Forschung

### What do we mean by ‚intersystemic innovations‘?

The future will be characterized by cross-system and integrative technologies. Process chains and technologies are combined more closely allowing them to be used in new ways.

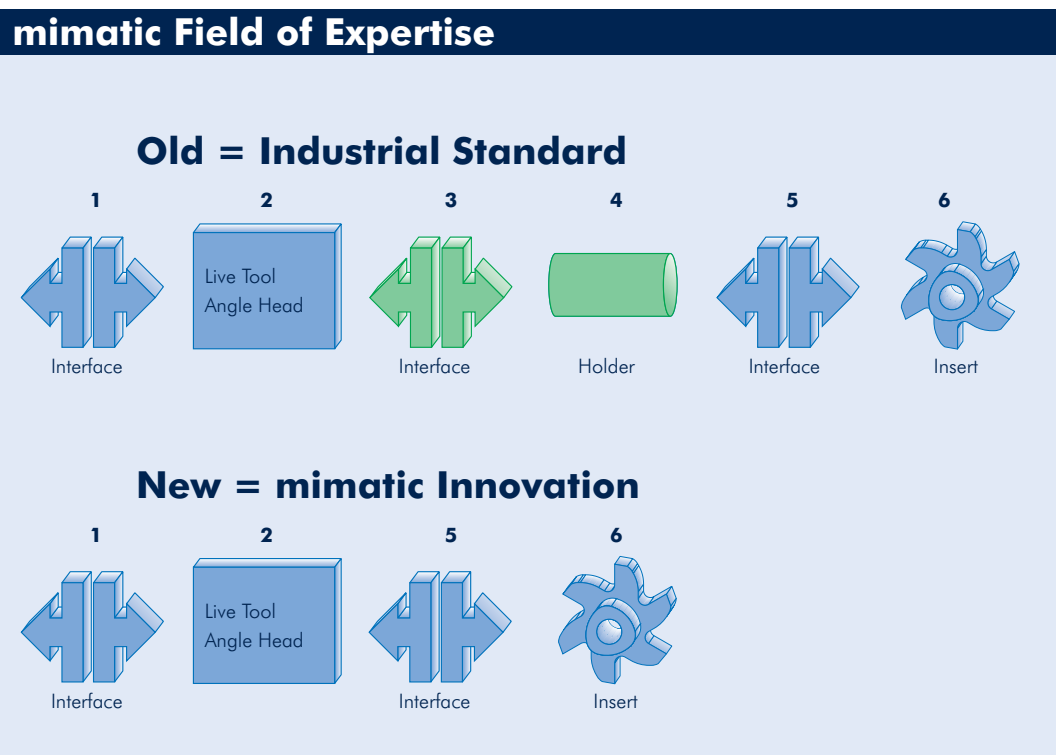
**Example:** The wheel and the thermal expansion motor (steam engine, spark-ignition engine) are brought together on a compact platform: Henry Ford invents the car. The optimal solution is provided for the social and commercial necessities of the times, continuing to affect the world to the present day.

**Live Tool** and carbide tool cutting insert (**CT-CI**) are combined by mimatic to make more compact, efficient and resource-saving solutions. This is possible, because mimatic is the only manufacturer in the world to have combined the cross-system know-how under one roof – expertise in manufacturing, development, construction and advice.

This relates to the following fields:

1. **Machine-Side Interfaces** (VDI, HSK, SK, Capto, ...)
2. **Live Tools** for CNC rotary and tool machines
3. **Tool-Side Interfaces** on the driven tool holder (collet chuck, HSK, in-house developments, ...)
4. **Holder for CT-CI** (shaft, disc, shell-type milling cutter counterbores, ...)
5. **Interface Holder CT-CI** (polygon, ISO, in-house developments, ...)
6. **Carbide Tool Cutting Insert** (milling, turning, counterboring, drilling cutting, ...)

Thanks to the innovative integration process from mimatic, two of the above-named areas can be dispensed with.



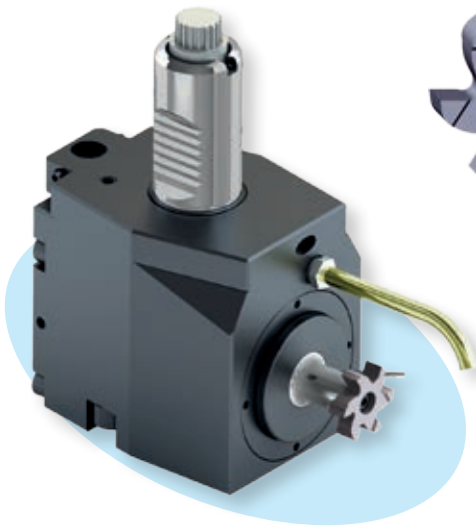
# AGMILL

## The Result

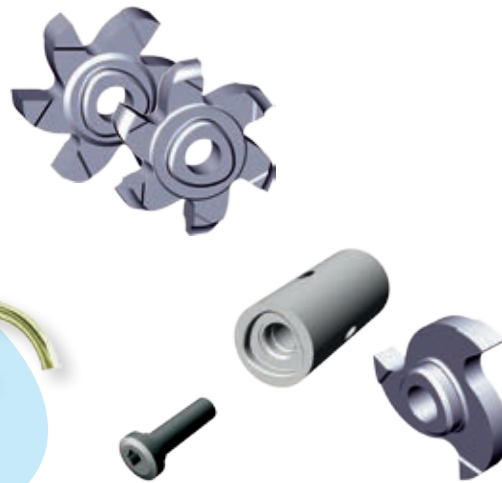
### AGMILL =

Live Tool + Polygon Interface + PolyMILL Insert

#### AGMILL



#### PolyMILL



### Advantages

#### Fewer Interfaces

- lower tolerances
- better true running
- longer operating life
- shorter form of structure

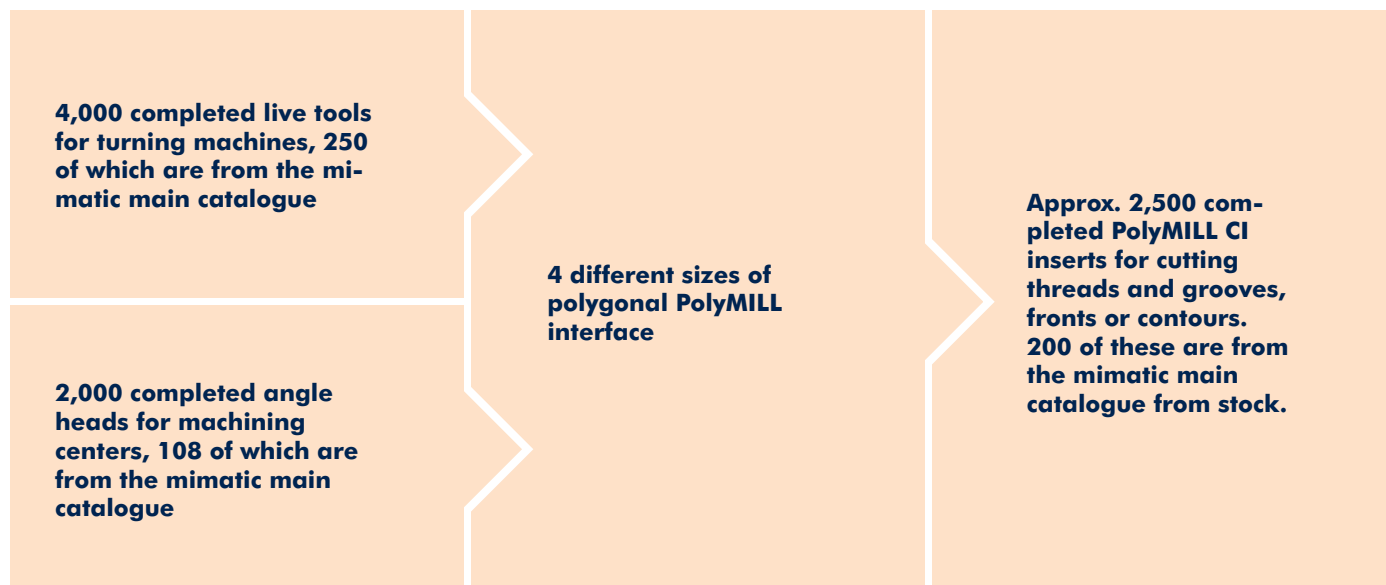
#### Rapid Changing of the CT-CI

- loosen a screw
- planar arrangement
- no pre-adjustment necessary
- self-centring

### The mimatic Modular Set

- ✓ 4,000 Live Tools
- ✓ 2,000 Angle Heads
- ✓ 2,500 PolyMILL Inserts

### Modular Sets Available to mimatic Customers



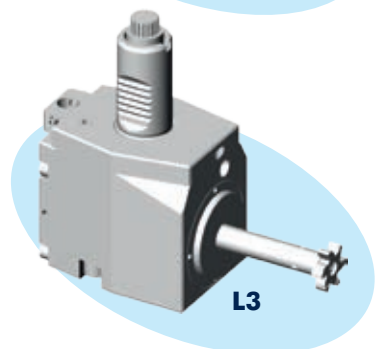
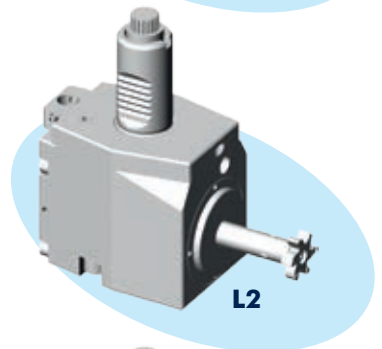
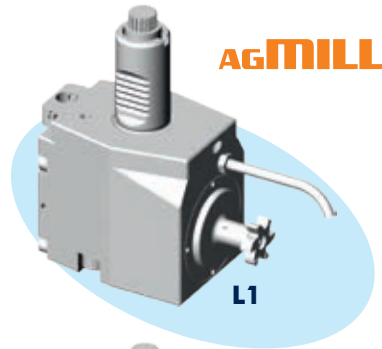
# AGMILL

## Dimensioning According to the Customer's Requirements

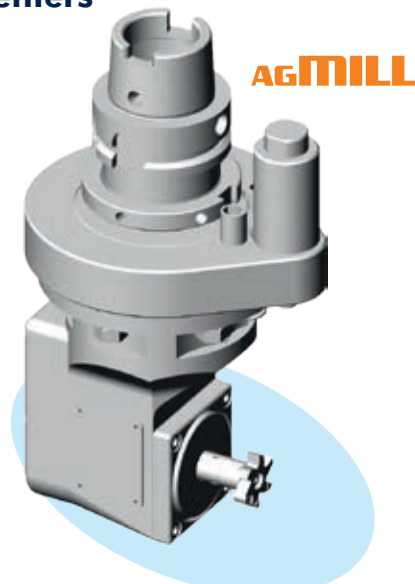
### Live Tools for Turning Machines

3 different lengths of drive spindle are assigned to each specific driven tool holder / angle head. These lengths are determined by the size of the driven tool holder, the rigidity and type of bearing used. The diameter of the drive spindle, among other things, is also dependent on this. These preconditions can also limit the selection of poly-milling interfaces available.

It is thus necessary to describe the planned machining processes as precisely as possible, so that the optimum suggestion can be worked out, from a technical and commercial standpoint. Because it is then ensured that requirements for precision, efficiency and sustainability are fulfilled.



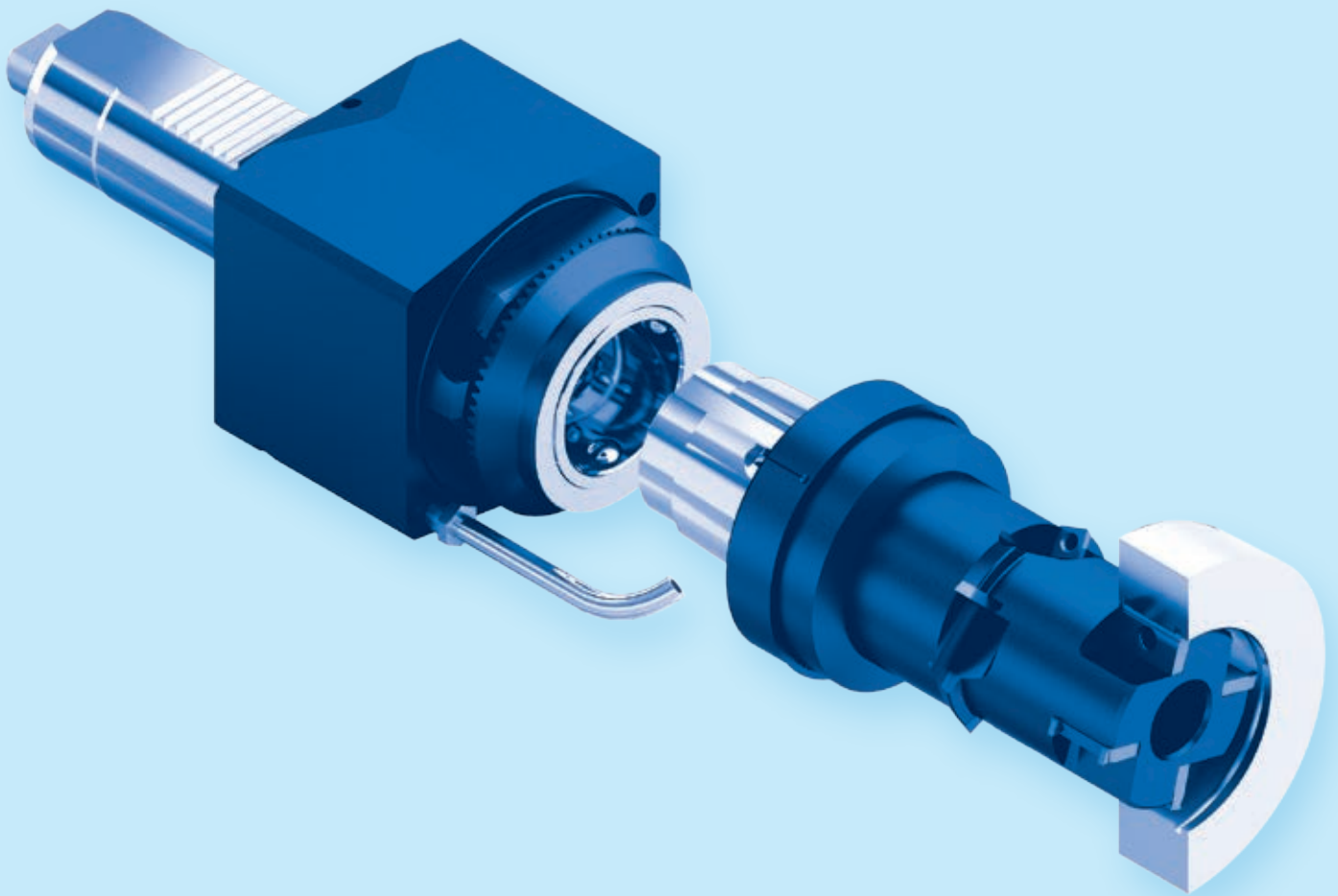
### Angle Heads for Machining Centers



### PolyMILL



**Driven Tool Holders with Modular  
Interface for Machining Solutions**



## CUTTING TOOLS

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# mimaticMi System

Connectable in accordance with  
**BLUECOMPETENCE**

» Driven Tool Holders  
» PolyMILL » TriMILL » TrioCut » PolyREAM

## The Integrated Tool Solution

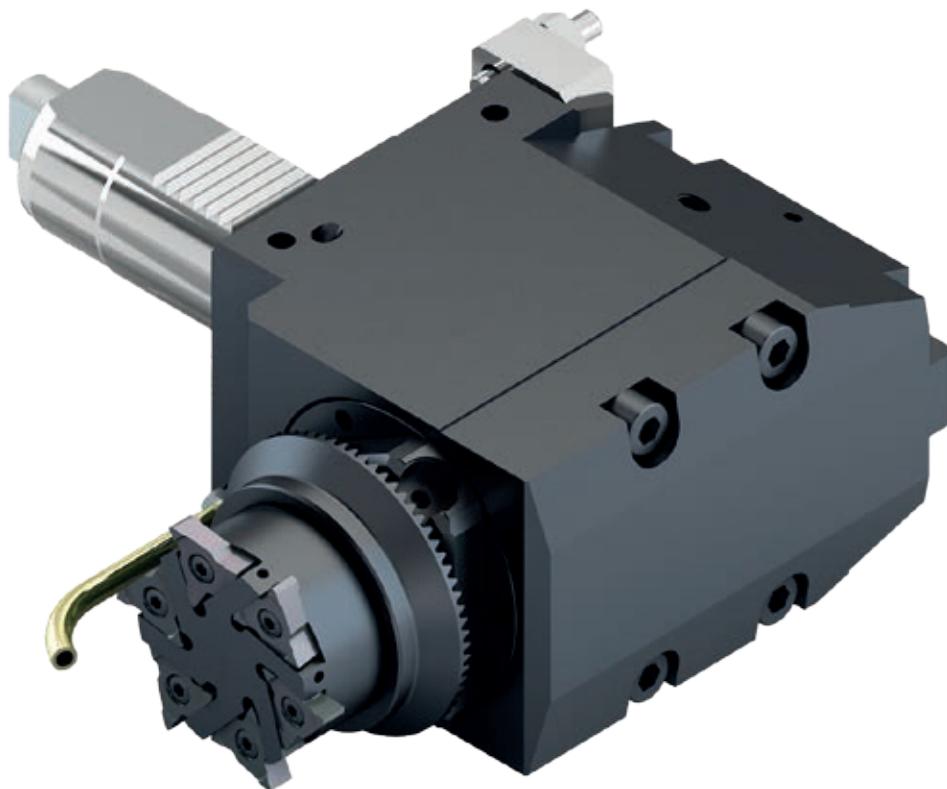
For more efficient machining on turning machines, mimatic applies its expertise in integrated and complex cutting tools and its expertise in driven tool holders. The result is a cross-system tool solution for series production.

The central part of this solution is the modular quick-change interface mi, which connects the driven tool holder directly and without additional work to e.g. shell-type milling tools for combined machining (turning, planing, chamfering).

A minimal tool-changing time is achieved with quick-change single-hand operation in the machine. Planar arrangement, symmetrical 3-point intake and a short taper rule out operation errors! The compact mi cutting tool designed for the interface requires no pre-adjustment.

The mi cutting tool has a solid, one-piece construction with integrated mi quick-change interface and reduces constructed size and true running errors.

mi-System offers increased efficiency, sustainability and the saving of resources.



# mimaticMi System

## Objective

**„Foresight process“ identifies the future themes in research and technology on behalf of the BMBF**  
(Federal Ministry of Education and Research)  
**„These ‚future fields of new cutting‘ show an intersystemic character!“** (quote)



Bundesministerium  
für Bildung  
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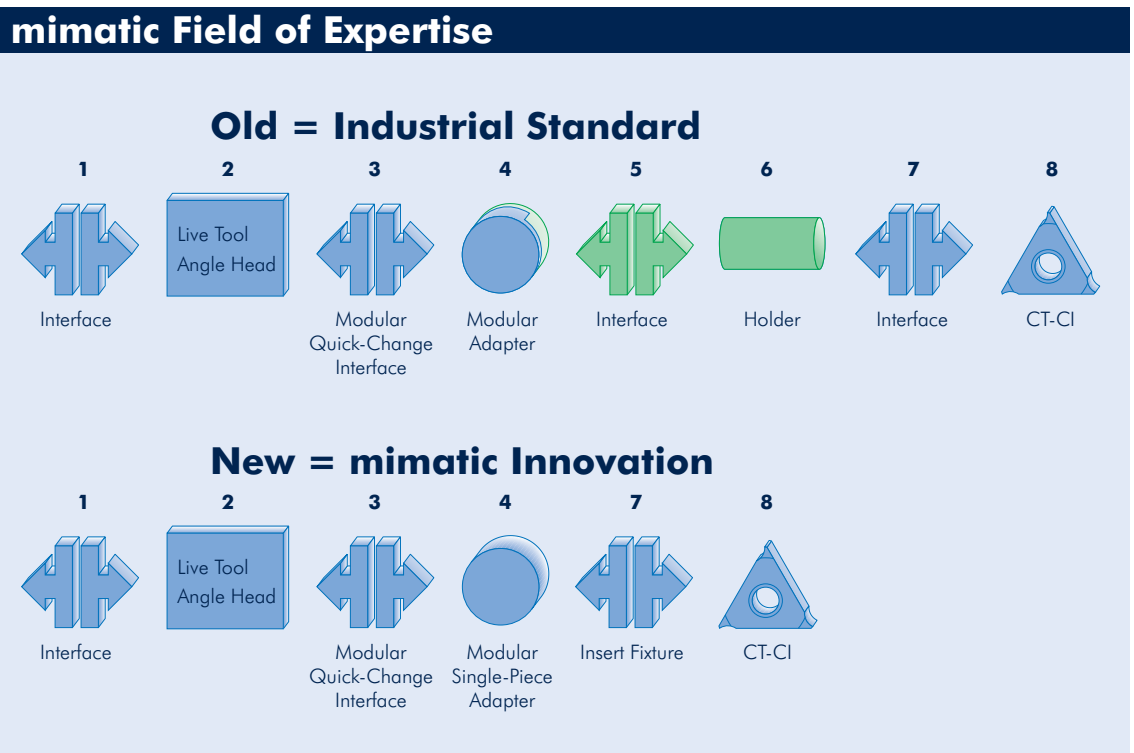
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2. **Live Tools** for CNC rotary and tool machines
3. **Modular Quick-Change Interface**
4. **Modular Adaptor**
5. **Machine-Side Interfaces** on the powered tool (collet chuck, HSK, in-house developments, ...)
6. **Holder for CT-CI** (shaft, disc, shell-type milling tool counterbore, ...)
7. **Interface Holder CT-CI** (polygon, ISO, in-house developments, ...)
8. **Carbide Tool Cutting Insert** (milling, turning, counterboring, drilling cutting, ...)

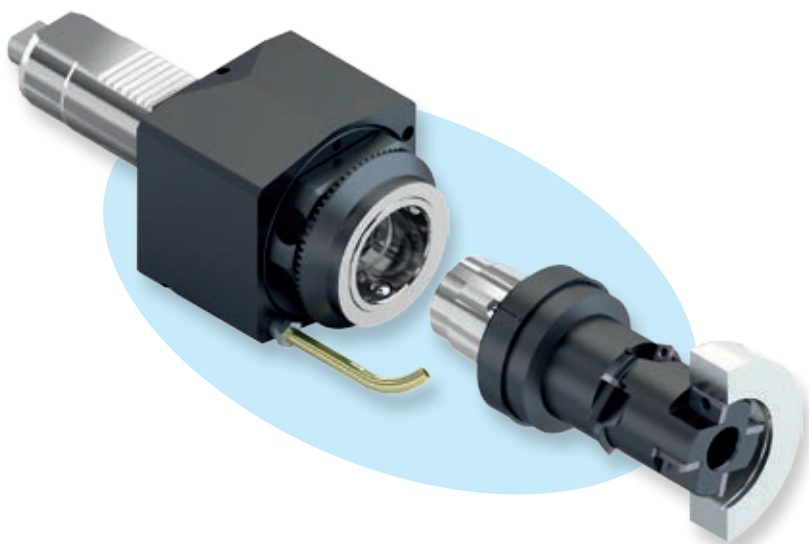
Thanks to the innovative integration process from mimatic, two of the above-named areas can be dispensed with.



# mimaticMi System

## The Result

**mi – The Integrated Tool Solution**  
= **Powered Tool + mi Interface + mi Tool**



### Advantages

**mi – interface, power-tool side**

- short taper + planar arrangement
- shorter construction
- convenient single-hand operation
- symmetrical 3-point intake

**mi – fast change**

- in the machine
- minimal tool changing time
- no pre-adjustment necessary

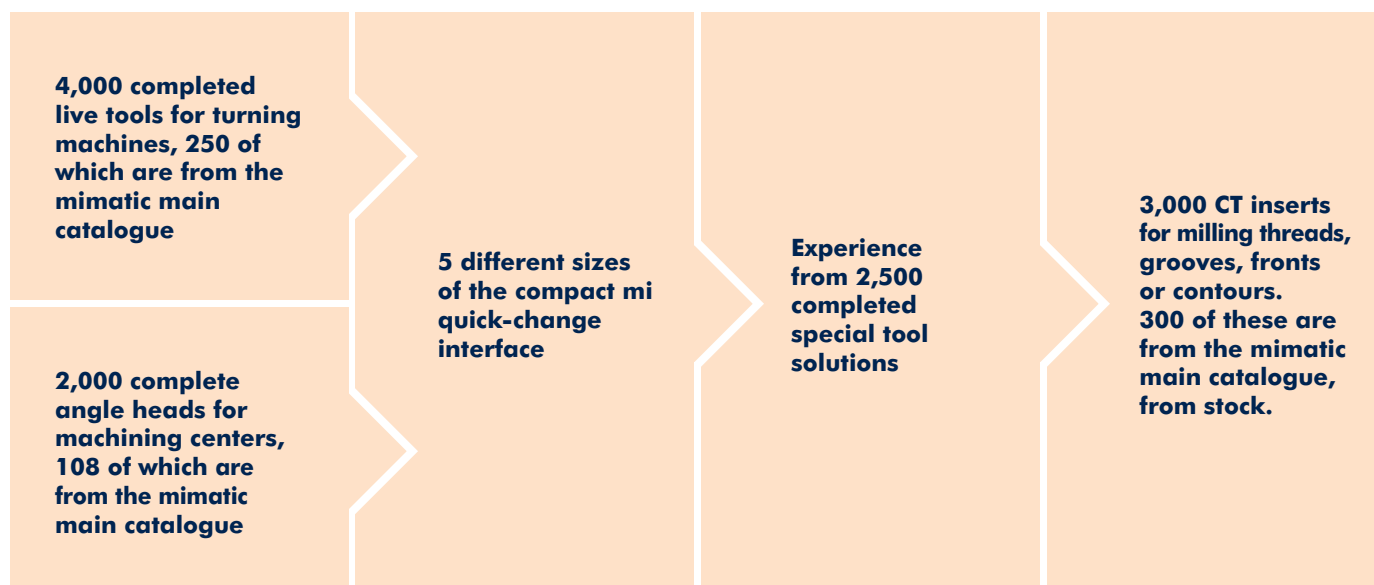
**mi – chipping tool**

- compact – one-piece design
- milling, counterboring, planing, chamfering
- shells, shaft, ...

### The mimatic Modular Set

- ✓ **4,000 Live Tools**
- ✓ **2,000 Angle Heads**
- ✓ **Experience from 2,500 Adapted Tool Solutions (Special Tools)**

### Modular Sets Available to mimatic Customers





# mimaticMi System

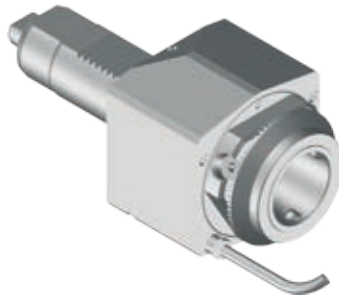
## Unlimited Applications

**Live Tools with mi quick-change interface must be adapted to the machining task in your dimensioning, and/or take this task into account:**

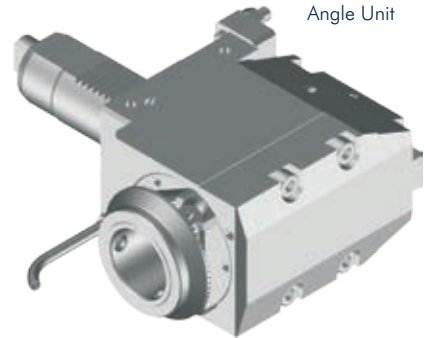
- as regards the cutting forces and/or torque occurring and
- as regards the precision required » rigidity of the system

It is thus necessary to describe the planned machining processes as exactly as possible, so that the optimal technical and economic suggestion can be worked out. Because then it is ensured that the requirements for precision, efficiency and sustainability are fulfilled.

**Live Tool - mi**  
Straight Unit

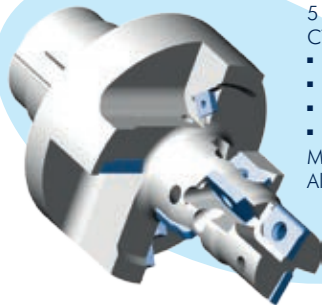


**Live Tool - mi**  
Angle Unit



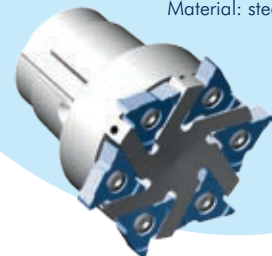
**mi - Milling Tool**

- 5 different CT plates
- chamfering
- milling threads
- milling planes
- counterboring
- Material: AlMgSi1 (DIN 3.2315)



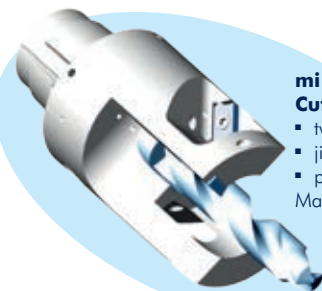
**mi - Milling Tool**

- groove milling
- Material: steel



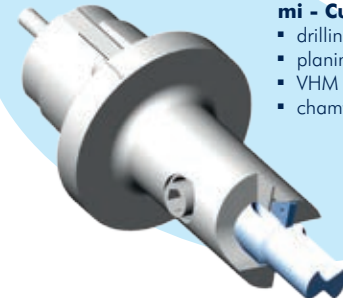
**mi - Cutting Tool**

- twist drill
- jiggering
- planing
- Material: Al-Si7Mg



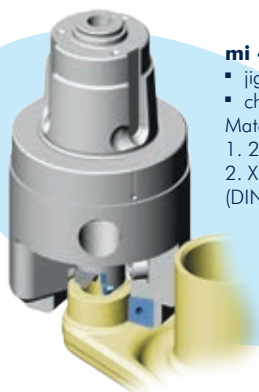
**mi - Cutting Tool**

- drilling
- planing
- VHM twist drill
- chamfering



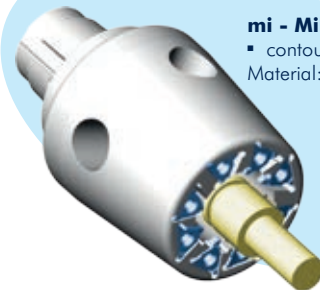
**mi - Cutting Tool**

- jiggering
- chamfering
- Materials: 1. 20MnVS6 2. X15 CrNiSi20 (DIN 1.4828)



**mi - Milling Tool**

- contour milling
- Material: 16MnCrS5



**mi - Milling Tool**

- groove milling
- Material: steel



**mi - Counterboring Tool**

- (jiggering)
- preturning
- finish-turning
- planing
- chamfering
- Material: Al-Si7Mg



**mi - Milling Tool**

- groove milling
- Material: steel

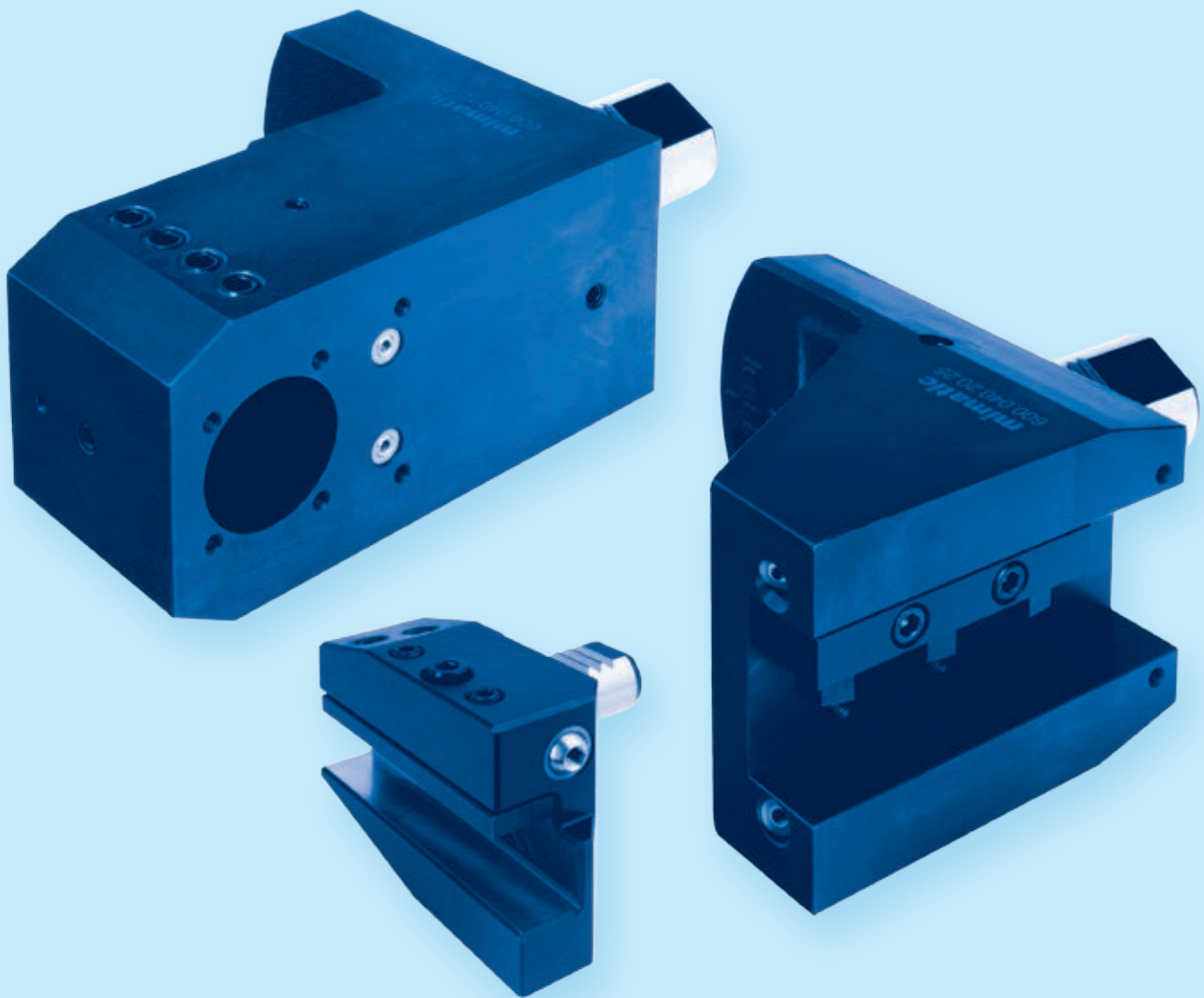


**mi - Milling Tool**

- groove milling
- Material: steel



Static Toolholders for  
CNC Turning Machines



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

## Table of Contents

	Type	Page
  	<b>NEXUS QTNX + SQT</b>	
	Combi Toolholder	499-500
	Boring Bar Holder	500
	Turning Tool Holder	501
	Combi Outer Turning Toolholder	501-502
	Combi Turning Toolholder for facing	503
	<b>QUICK TURN SMART</b>	
	Combi Toolholder	504
	Combi Outer Turning Toolholder	504
	Combi Turning Toolholder for facing	505
	<b>Multiplex MP</b>	
	Boring Bar Holder	506
	Turning Tool Holder	507
	Combi Toolholder	507
	Turning Toolholder, Twin Type	508
	Combi Outer Turning Toolholder	508
	Multi purpose holder	509
Combi Turning Toolholder for facing	509	
Accessories for Combi Toolholders	510-511	
  	90° Adaptor for Turning Tools	511-512
	Boring Bar Holder	512-513
	Double Boring Bar Holder	514
	Cutting Holder for ISCAR inserts	515
	Accessories	516
<b>VDI Toolholders DIN 69880</b>              	<b>Blank</b>	
	A1 rectangular	518
	A2 round	518
	<b>Radial Toolholder</b>	
	B1 right-hand, short	518
	B2 left-hand, short	518
	B3 overhead, right-hand, short	518
	B4 overhead, left-hand, short	519
	B5 right-hand, long	519
	B6 left-hand, long	519
	B7 overhead, right-hand, long	519
	B8 overhead, left-hand, long	519
	<b>Axial Toolholder</b>	
	C1 right-hand	520
	C2 left-hand	520
	C3 overhead, right-hand	520
	C4 overhead, left-hand	520
	D1 Axial Multiple Toolholder	520
	D2 Axial Multiple Toolholder, overhead	520
	U-Drill Holder	521
	Boring Bar Holder	521
	Boring Bar Holder E2	522
	Boring Bar Holder E2 slotted	522
	Universal Chuck	522
	<b>Collet Chuck</b>	
	OZ E3 DIN 6388	523
	ER E4 DIN 6499	523
	Morse Taper Holder	523
	Bar Puller	523
	Quick Change Tapping Chucks	524
	Material Stop	524
	Protection Plug	524
<b>Accessories</b>		
Wrenches	525	
Clamping Nuts	525	
Collets	489-529	
ER Seal Disc	530	
Reducing Sleeve, slotted	531	
Reducing Sleeve	531	

## Combi Toolholder

for manufacturer

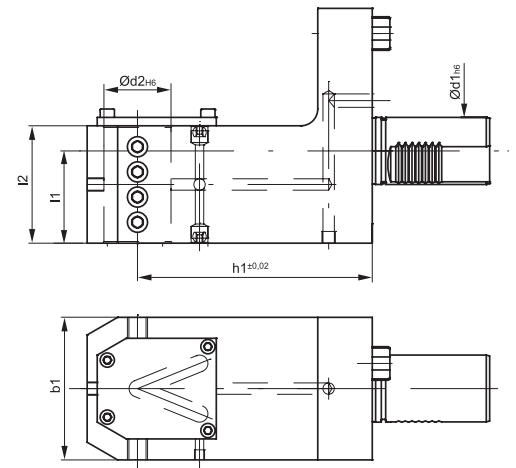
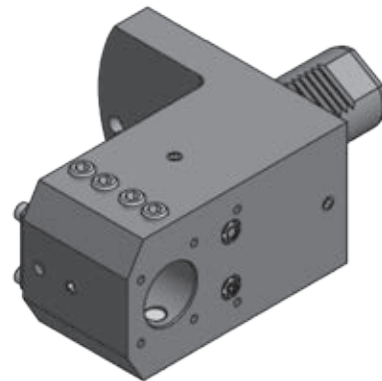
**Mazak**

for machine type

**NEXUS QTNX + SQT**



Internal coolant supply



■ **Reduction Sleeves and Collet inserts see pages 510-511**

Order No.	Size	Machine	d1 mm	d2 mm	l1 mm	l2 mm	b1 mm	h1 mm
117971	VDI 40	QTNX 100 + SQT 10	40	25	55	65	76	110
117972	VDI 40	QTNX 100 + SQT 10	40	32	55	65	76	110
117961	VDI 40	QTNX 100 + SQT 10	40	40	55	65	76	110
152680	VDI 40	QTNX 200/250 + SQT 15	40	25	55	70	85	140
152681	VDI 40	QTNX 200/250 + SQT 15	40	32	55	70	85	140
152682	VDI 40	QTNX 200/250 + SQT 15	40	40	55	70	85	140
118018	VDI 50	QTNX 300/350 + SQT 28/30	50	32	63	90	92	175
118008	VDI 50	QTNX 300/350 + SQT 28/30	50	50	63	90	92	175

## Combi Toolholder, Duo Type

for manufacturer

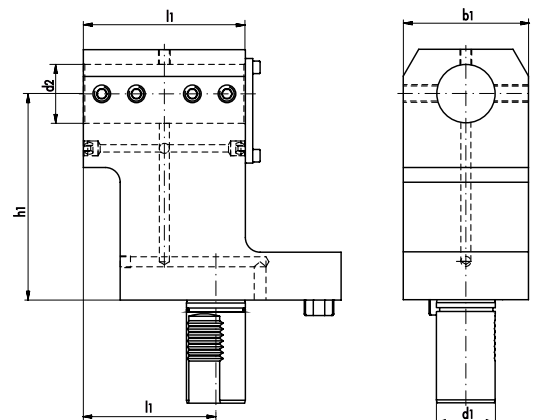
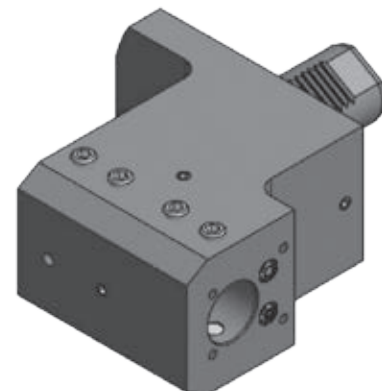
**Mazak**

for machine type

**NEXUS QTNX + SQT**



Internal coolant supply



Order No.	Size	Machine	d1 mm	d2 mm	l1 mm	l2 mm	b1 mm	h1 mm
117976	VDI 40	QTNX 100 + SQT 10	40	32	90	110	76	110
117978	VDI 40	QTNX 200/250 + SQT 15	40	40	90	110	84	140

## Combi Toolholder, Twin Type

for manufacturer

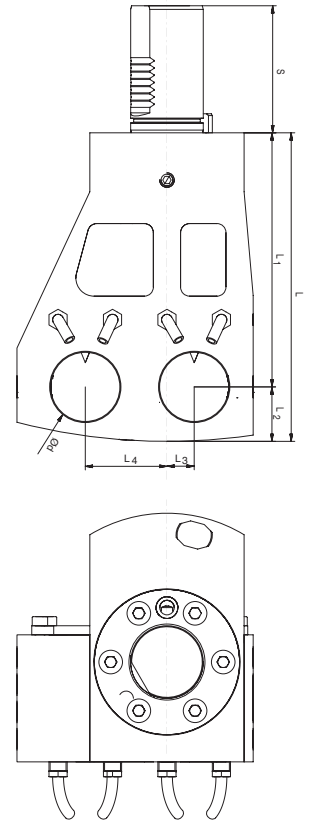
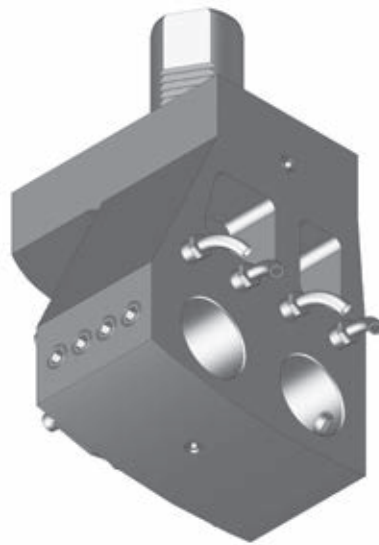
**Mazak**

for machine type

**QUICK TURN NEXUS  
200/250/300/350-II**



Internal coolant supply



Order No.	Size	Machine	d	L mm	L1 mm	L2 mm	L3 mm	L4 mm	S mm
174264	VDI 40	QUICK TURN NEXUS 200/250-II	1½"	170	140	30	15	45	70
162914	VDI 40	QUICK TURN NEXUS 200/250-II	40 mm	170	140	30	15	45	70
162915	VDI 50	QUICK TURN NEXUS 300/350-II	1½"	206	175	31	30	40	75
162916	VDI 50	QUICK TURN NEXUS 300/350-II	40 mm	206	175	31	30	40	75

## Boring Bar Holder

for manufacturer

**Mazak**

for machine type

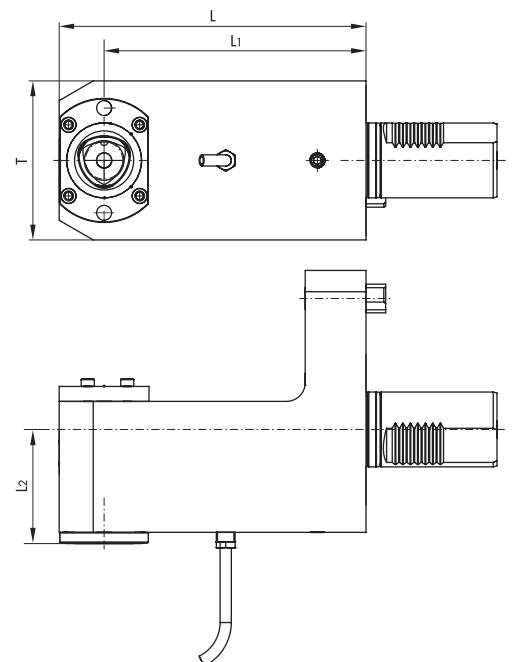
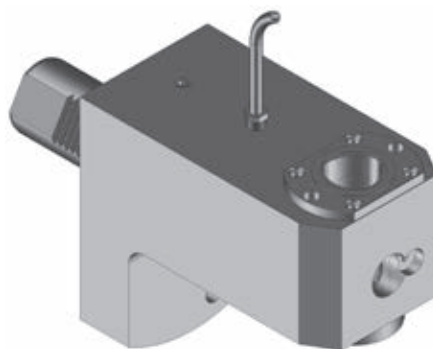
**NEXUS QTNX + SQT  
+ SUPER QUADREX**

Modular interface

**mimatic capto**



Internal coolant supply



Order No.	Size	Machine	Coolant	L mm	L1 mm	L2 mm	T mm
172896	C4	QTNX 200/250 + SQT 15/18 + SQ 200/250	internal + external	164	140	61	85
173607	C5	SQT 300/350/400	internal + external	215	175	61	100

## Turning Toolholder

for manufacturer

**Mazak**

for machine type

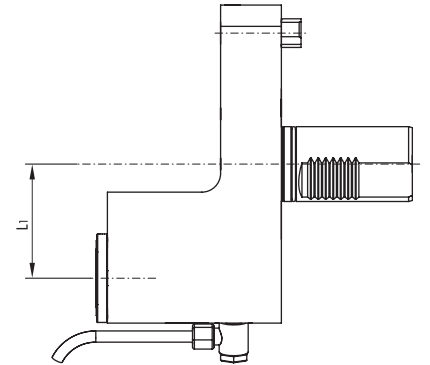
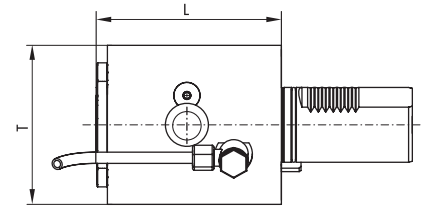
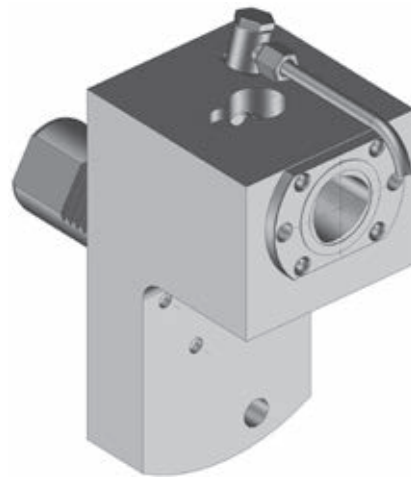
**NEXUS QTNX + SQT  
+ SUPER QUADREX**

Modular interface

**mimatic capto**



Internal coolant supply



Order No.	Size	Machine	Coolant	L mm	L1 mm	L2 mm	T mm
172897	C4	QTNX 200/250 + SQT 15/18 + SQ 200/250	internal + external	99	61	–	85
173584	C5	SQT 300/350/400	internal + external	130	61	–	100

## Combi Outer Turning Toolholder (right-hand/left-hand)

for manufacturer

**Mazak**

for machine type

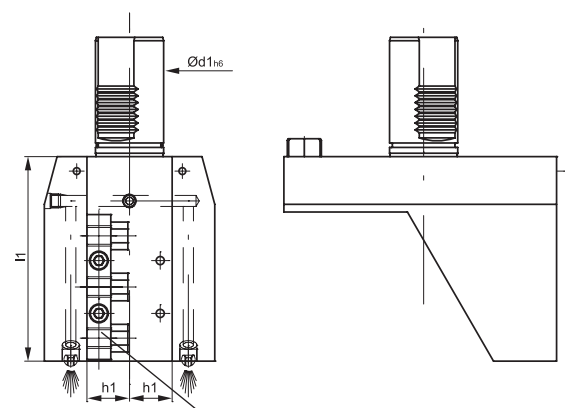
**NEXUS QTNX + SQT**



Internal coolant supply



Illustration show right version



Convertible for right- and left hand motion

Order No.	Size	Machine	d1 mm	l1 mm	h1 mm
117986	VDI 40	QTNX 100 + SQT 10	40	100	20
152683	VDI 40	QTNX 200/250 + SQT 15	40	120	25
118022	VDI 50	QTNX 300/350 + SQT 28/30	50	150	25
Left version:					
104668	VDI 40	QTNX 200/250 + SQT 15	40	120	25

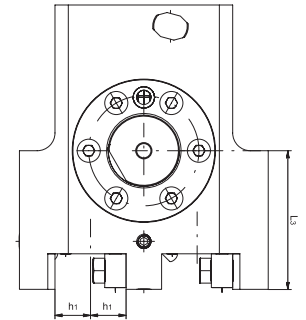
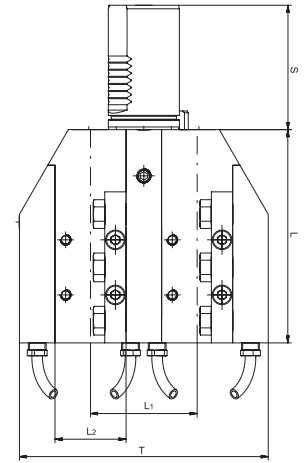
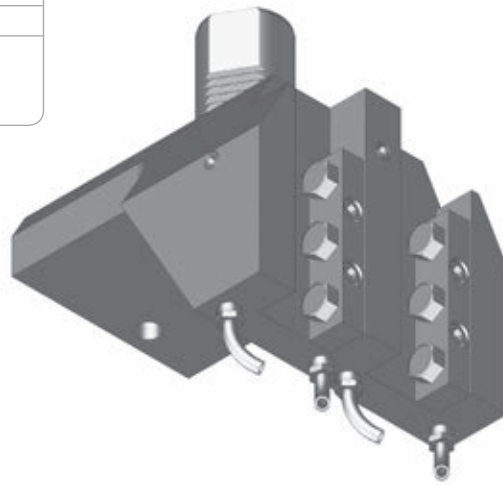
## Combi Outer Turning Toolholder, Twin Type

for manufacturer  
**Mazak**

for machine type  
**QUICK TURN NEXUS  
200/250/300/350-II**



Internal coolant supply



Order No.	Size	Machine	L mm	L1 mm	L2 mm	L3 mm	h1 mm	S mm	T mm
169641	VDI 40	QUICK TURN NEXUS 200/250-II	120	60	40 mm	78	20 mm	70	140
169787	VDI 40	QUICK TURN NEXUS 200/250-II	120	60	1½"	78	¾"	70	140
171044	VDI 50	QUICK TURN NEXUS 300/350-II	150	70	50 mm	86	25 mm	75	160
171087	VDI 50	QUICK TURN NEXUS 300/350-II	150	70	2"	86	1"	75	160

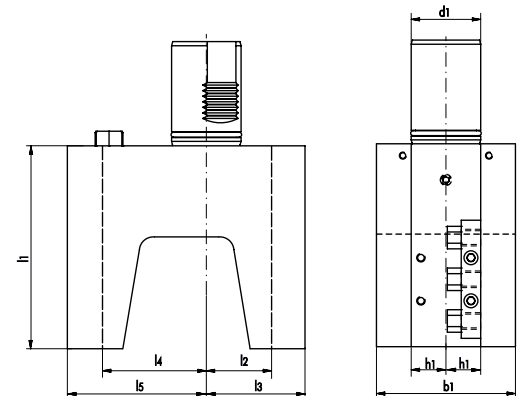
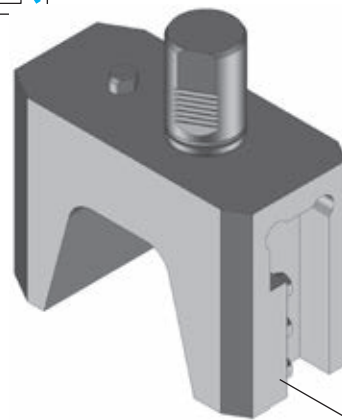
## Combi Outer Turning Toolholder, Duo Type (right-hand/left-hand)

for manufacturer  
**Mazak**

for machine type  
**NEXUS QTNX + SQT**



Internal coolant supply



Convertible for right- and left hand motion

Order No.	Size	Machine	d1 mm	l1 mm	l2 mm	l3 mm	l4 mm	l5 mm	b1 mm	h1 mm
117988	VDI 40	QTNX 100 + SQT 10	40	100	45	65	76	96	76	20
104079	VDI 40	QTNX 200/250 + SQT 15	40	120	53	78	63	88	96	25
118010	VDI 50	QTNX 300/350 + SQT 28/30	50	150	55	80	103	128	100	25



## Combi Turning Toolholder for Facing (right-hand/left-hand)

for manufacturer

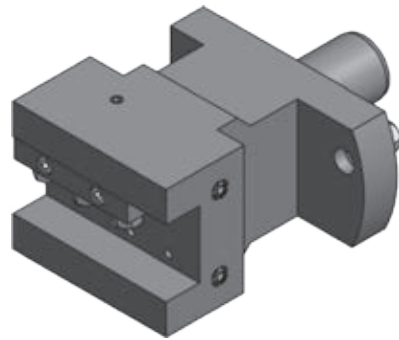
**Mazak**

for machine type

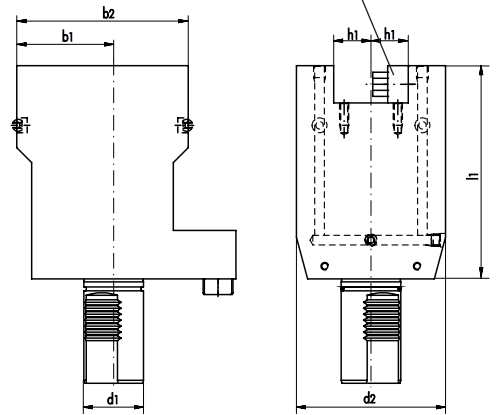
**NEXUS QTNX + SQT**



Internal coolant supply



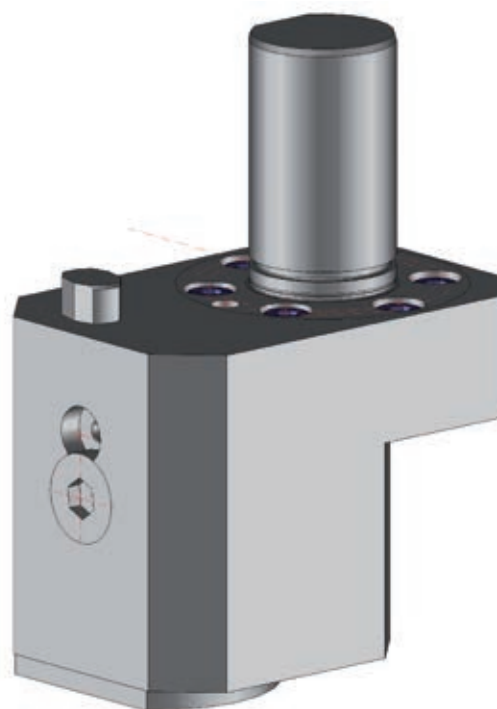
Convertible for right- and left hand motion



Order No.	Size	Machine	d1 mm	h2 mm	l1 mm	b1 mm	b2 mm	h1 mm
118000	VDI 40	QTNX 100 + SQT 10	40	76	110	60	110	20
117990	VDI 40	QTNX 200/250 + SQT 15	40	86	143	65	115	25
118012	VDI 50	QTNX 300/350 + SQT 28/30	50	98	163	57	120	25

We also produce static toolholders with mimatic Capto interface. Please ask for details.

Picture shows a straight static toolholder with mimatic Capto C4 interface for Mazak MP 6200.



## Combi Toolholder

for manufacturer

**Mazak**

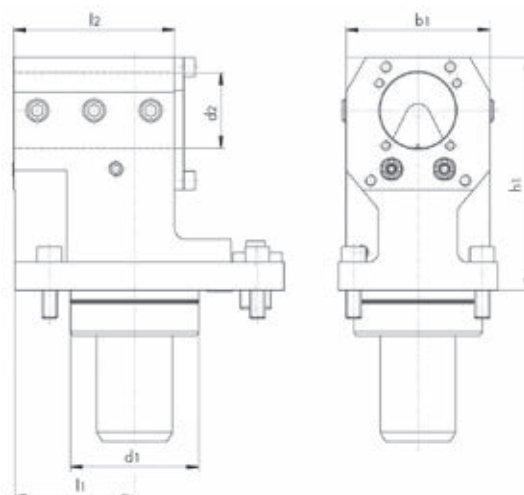
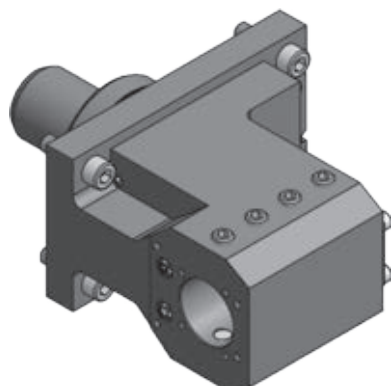
for machine type

**QUICK TURN SMART**

Reduction Sleeves and Collet inserts see pages 510-511



Internal coolant supply



Order No.	Size	Machine	d1 mm	d2 mm	l1 mm	l2 mm	b1 mm	h1 mm
177076	BMT 68	Quick Turn Smart 100M / 200M	68	25	55	65	76	110
178645	BMT 80	Quick Turn Smart 300M / 350M	80	32	55	65	76	110

## Combi Outer Turning Toolholder (right-hand/left-hand)

for manufacturer

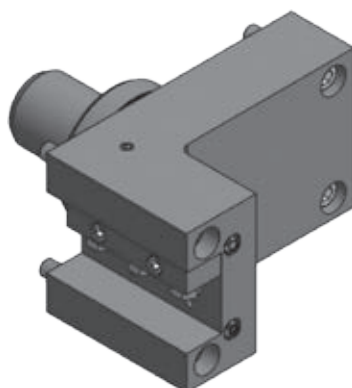
**Mazak**

for machine type

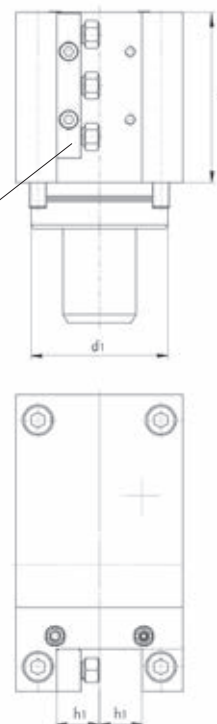
**QUICK TURN SMART**



Internal coolant supply



Convertible for right- and left hand motion



Order No.	Size	Machine	d1 mm	l1 mm	h1 mm
177078	BMT 68	Quick Turn Smart 100M / 200M	68	75	25
178545	BMT 80	Quick Turn Smart 300M / 350M	80	100	25

## Combi Turning Toolholder for Facing (right-hand/left-hand)

for manufacturer

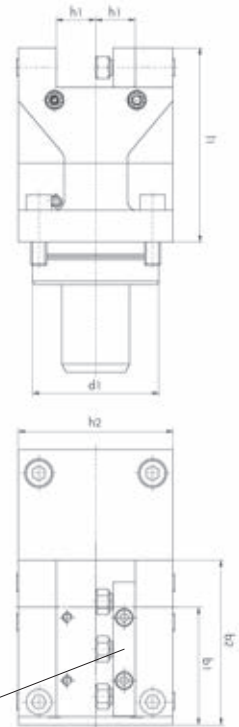
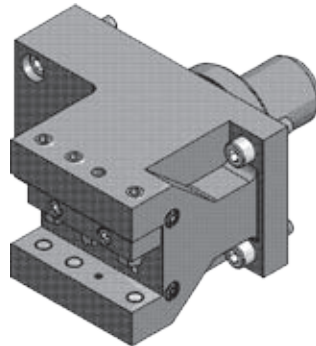
**Mazak**

for machine type

**QUICK TURN SMART**



Internal coolant supply



Convertible for right- and left hand motion

Order No.	Size	Machine	d1 mm	h2 mm	l1 mm	b1 mm	b2 mm	h1 mm
179376	BMT 68	Quick Turn Smart 100M / 200M	68	94	98	64	94	25
178547	BMT 80	Quick Turn Smart 300M / 350M	80	98	123	75	105	25

We also produce static toolholders with mimatic capto interface. Please ask for details.

Picture shows a straight static toolholder with mimatic capto C4 interface for Mazak MP 6200.

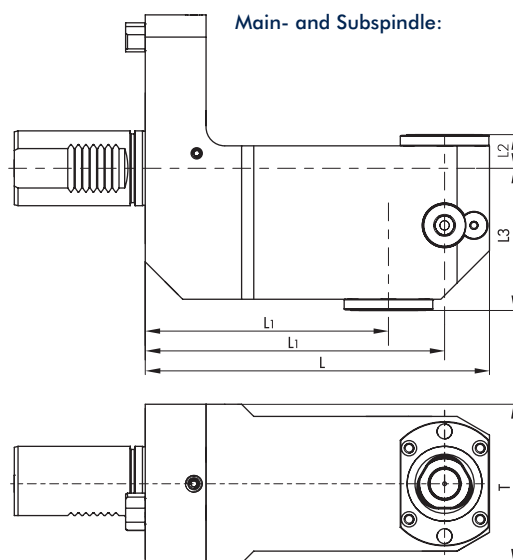
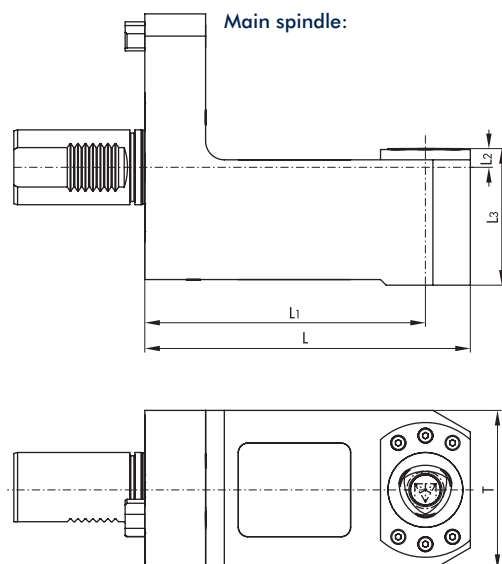
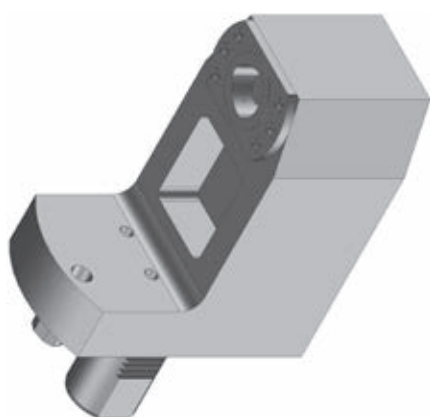


# Boring Bar Holder

for manufacturer
<b>Mazak</b>
for machine type
<b>MULTIPLEX + HYPER QUADREX</b>
Modular interface
<b>mimatic capto</b>



Internal coolant supply



Order No.	Size	Machine	Coolant	L mm	L1 mm	L2 mm	L3 mm	T mm
<b>Main spindle:</b>								
173609	C4	Multiplex 610 (MP 620-16x) + HQ 150	internal + external	154	130	18	60	85
169828	C4	Multiplex 620 (12x) + HQ 200	internal + external	174	150	18	70	85
173608	C5	Multiplex 630	internal + external	230	190	30	80	100
<b>Main- and Subspindle:</b>								
172270	C4 (2x)	Hyper Quadrex 200	internal	184	160/130	18	76	85

## Turning Toolholder

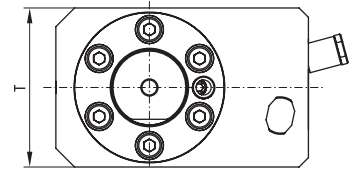
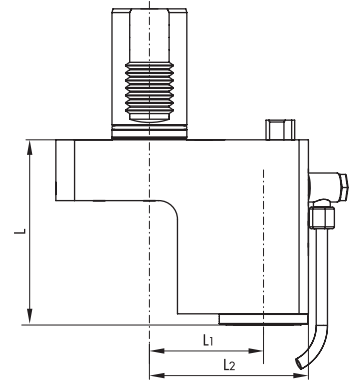
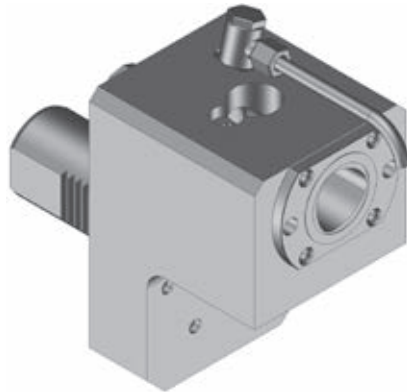
for manufacturer  
**Mazak**

for machine type  
**MULTIPLEX  
+ HYPER QUADREX**

Modular interface  
**mimatic capto**



Internal coolant supply



Order No.	Size	Machine	Coolant	L mm	L1 mm	L2 mm	T mm
<b>Main spindle:</b>							
173578	C4	Multiplex 610 (MP 620-16x) + HQ 150	internal + external	75	61	–	85
173610	C4	Multiplex 620 (12x) + HQ 200	internal + external	100	63	–	85
173611	C5	Multiplex 630	internal + external	120	95	–	100
<b>Main- and Subspindle:</b>							
172269	C4 (2x)	Hyper Quadrex 200	internal	100	63	58	85

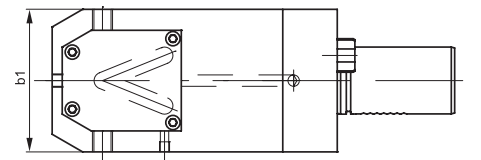
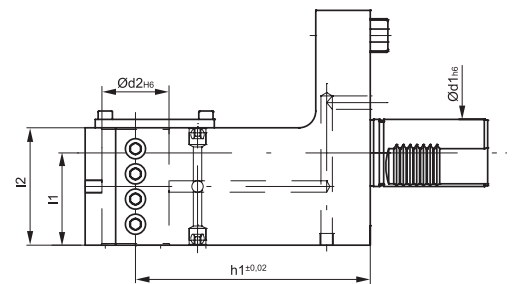
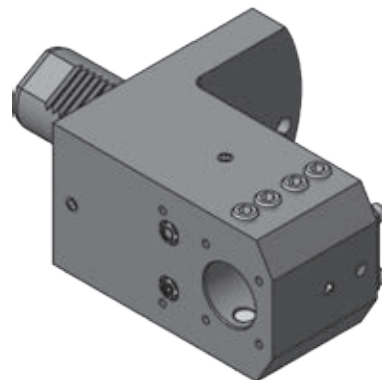
## Combi Toolholder

for manufacturer  
**Mazak**

for machine type  
**MULTIPLEX**



Internal coolant supply



■ **Reduction Sleeves and Collet inserts see pages 510-511**

Order No.	Size	Machine	d1 mm	d2 mm	l1 mm	l2 mm	b1 mm	h1 mm
117979	VDI 40	MP 610	40	25	10	65	76	130
117981	VDI 40	MP 610	40	32	10	65	76	130
117982	VDI 40	MP 610	40	40	10	65	76	130
117983	VDI 40	MP 620	40	25	10	70	76	150
117964	VDI 40	MP 620	40	32	10	70	76	150
117984	VDI 40	MP 620	40	40	10	70	76	150
117985	VDI 40	MP 620	40	50	10	70	76	150

## Turning Toolholder, Twin Type

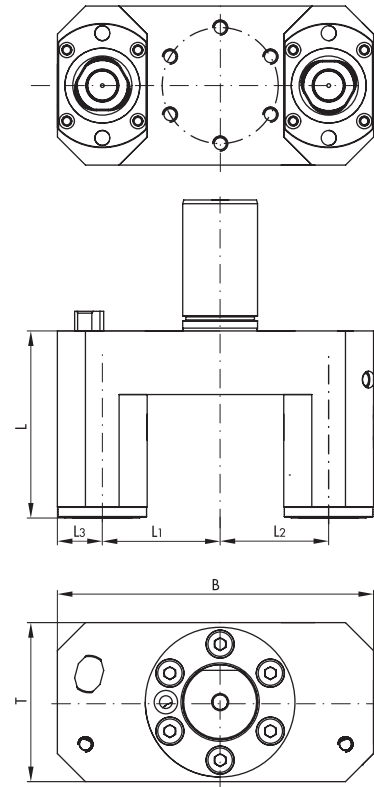
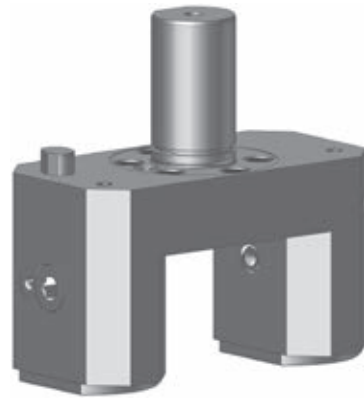
for manufacturer  
**Mazak**

for machine type  
**MULTIPLEX**

Modular interface  
**mimatic capto**



Internal coolant supply



Order No.	Size	Machine	L mm	L1 mm	L2 mm	L3 mm	B mm	T mm
172269	VDI 40	MP 620	100	63	58	24	169	85

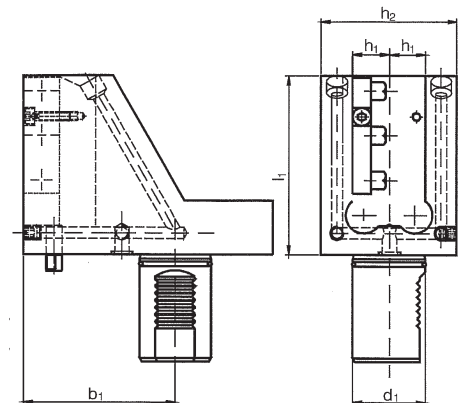
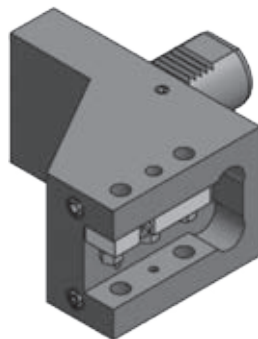
## Combi Outer Turning Toolholder

for manufacturer  
**Mazak**

for machine type  
**MULTIPLEX**



Internal coolant supply



Order No.	Size	Machine	d1 mm	l1 mm	h2 mm	b1 mm	h1 mm
117997	VDI 40	MP 610	40	100	76	85	20
117998	VDI 40	MP 620	40	120	50	83	25

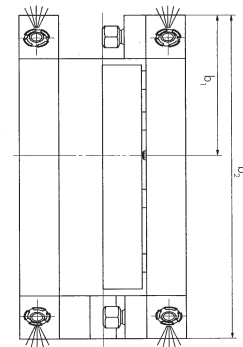
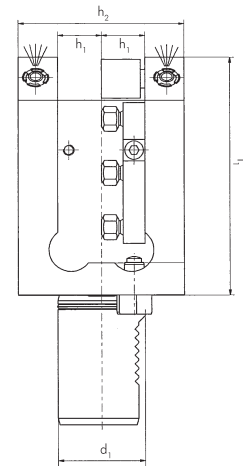
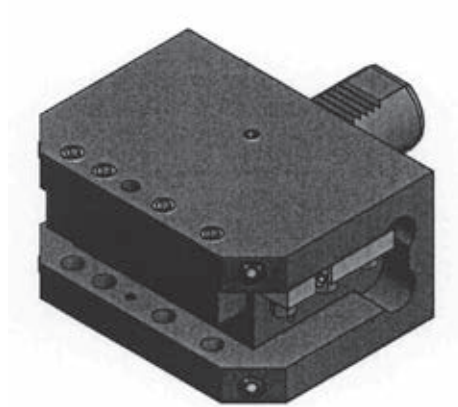
## Multi Purpose Holder

for manufacturer  
**Mazak**

for machine type  
**HYPER QUADREX  
100/150 MSY**



Internal coolant supply



Order No.	Size	Machine	d1 mm	l1 mm	h2 mm	b1 mm	b2 mm	h1 mm
176539	VDI 40	HQ 100	40	110	76	85	65	20

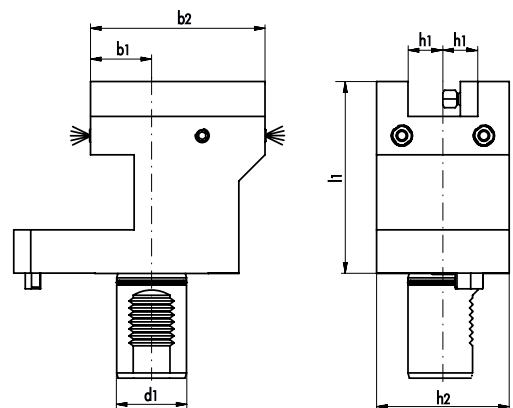
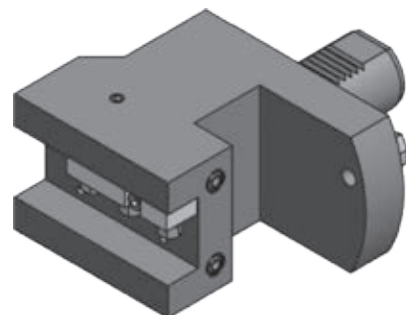
## Combi Turning Toolholder for Facing

for manufacturer  
**Mazak**

for machine type  
**MULTIPLEX**



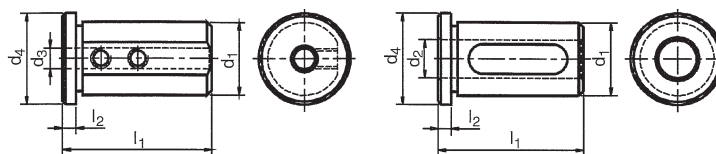
Internal coolant supply



Order No.	Size	Machine	d1 mm	b2 mm	l1 mm	h2 mm	b1 mm	h1 mm
117992	VDI 40	MP 610	40	100	110	76	35	20
117993	VDI 40	MP 620	40	115	143	80	35	25

## Accessories for Mazak Combi Toolholders

### Sleeve



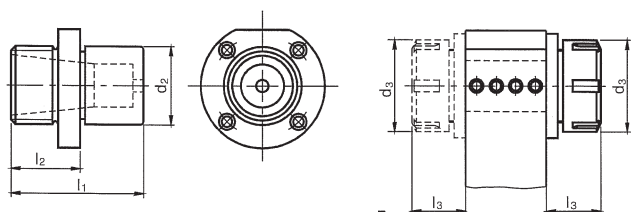
Pict. 1

Pict. 2

Order No.	Pict.	d1 mm	d2 mm	d3 mm	d4 mm	l1 mm	l2 mm
104527	1	25		6	29	50	4
104444	1	25		8	29	50	4
104445	1	25		10	29	50	4
104494	1	25		12	29	50	4
104537	2	25	16		29	50	4
104469	2	25	20		29	50	4
104528	1	32		6	36	58	5
104519	1	32		8	36	58	5
104454	1	32		10	36	58	5
104487	1	32		12	36	58	5
104548	2	32	16		36	58	5
104489	2	32	20		36	58	5
104522	2	32	25		36	58	5
104513	1	40		6	44	58	5
104507	1	40		8	44	58	5

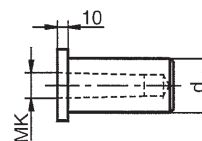
Order No.	Pict.	d1 mm	d2 mm	d3 mm	d4 mm	l1 mm	l2 mm
104549	1	40		10	44	58	5
104531	1	40		12	44	58	5
104514	2	40	16		44	58	5
104555	2	40	20		44	58	5
104551	2	40	25		44	58	5
104609	2	40	32		44	58	5
168951	1	50		6	54	75	5
104585	1	50		8	54	75	5
104552	1	50		10	54	75	5
104558	1	50		12	54	75	5
104525	2	50	16		54	75	5
104586	2	50	20		54	75	5
104587	2	50	25		54	75	5
104588	2	50	32		54	75	5
104559	2	50	40		54	75	5

### Collet Insert



Order No.	d2 mm	Size	Range	d3 mm	l1 mm	l2 mm	l3 mm
135232	32	E 430	2-16	42	49	25	37
135239	32	E 470	3-20	50	52	28	41
135234	40	E 430	2-16	42	49	25	37
135238	40	E 470	3-20	50	52	28	41
135233	50	E 472	4-26	63	52	28	42

### Drill Adapting Sleeve



Order No.	d mm	MK
105152	25	1
105134	25	2
105176	32	1
105191	32	2
105192	32	3
105086	40	1
105125	40	2
105103	40	3
105120	40	4
105068	50	2
105049	50	3
105087	50	4



## Accessories for Combi Toolholders

### Collet Set acc. to DIN 6499, Class 2



Order No.	Pieces	Size	Range
152712	10	ER 16	1-10
152713	15	ER 25	2-16
152715	18	ER 32	3-20
152716	23	ER 40	4-26

### Steel blanking Plug for MAZAK CNC Turning Machines



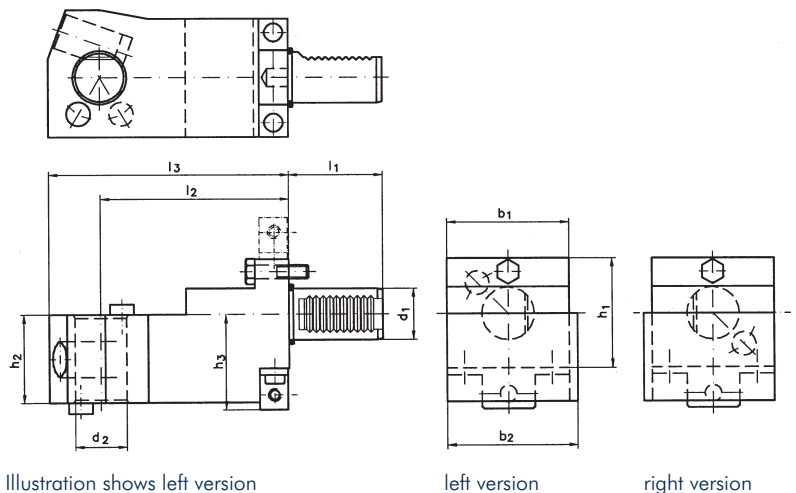
Order No.	Size
118017	VDI 40
118049	VDI 50

## 90° Adaptor for Turning Tools

for manufacturer

for turret type

**Star-type turret**



For ordering please declare your required version (right-hand or left-hand)

Order No.	Size	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	b1 mm	b2 mm	h1 mm	h2 mm	h3 mm
121243 (L) / 121218 (R)	VDI 20	20	20	40	75	100	54	59	54	44	42,0
121244 (L) / 121228 (R)	VDI 25	25	20	48	75	100	54	60	60	44	48,0
121201 (L) / 121266 (R)	VDI 25	25	25	48	75	100	54	63	60	44	48,0
121275 (L) / 121211 (R)	VDI 30	30	30	55	85	115	70	75	70	52	56,0
121239 (L) / 121214 (R)	VDI 30	30	30	55	100	130	70	75	70	52	56,0
121212 (L) / 121219 (R)	VDI 40	40	40	63	100	138	85	93	85	60	67,5
121223 (L) / 121229 (R)	VDI 40	40	40	63	120	158	85	93	85	60	67,5
121220 (L) / 121284 (R)	VDI 50	50	50	78	120	165	90	109	100	72	73,5

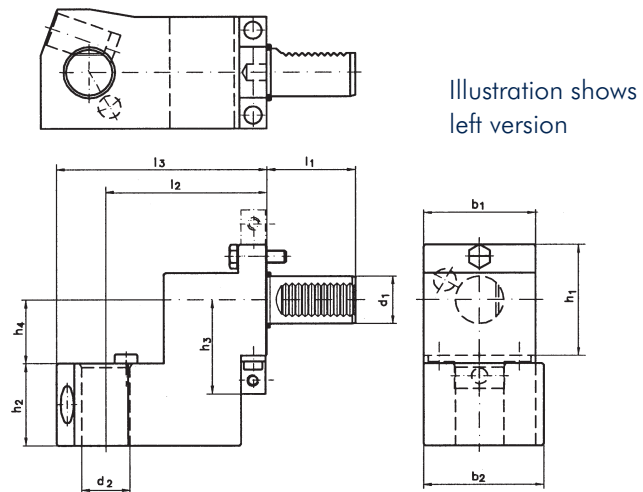
## 90° Adaptor for Turning Tools, Offset-Type

for manufacturer

**SAUTER**

for turret type

**Star-type turret**



For ordering please declare your required version (right-hand or left-hand)

Order No.	Size	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	b1 mm	b2 mm	h1 mm	h2 mm	h3 mm	h4 mm
121215 (L) / 121254 (R)	VDI 20	20	20	40	75	100	54	59	54	44	42,0	30
121230 (L) / 121255 (R)	VDI 25	20	20	48	75	100	54	60	60	44	48,0	30
121293 (L) / 121256 (R)	VDI 25	25	25	48	75	100	54	63	60	44	48,0	30
121224 (L) / 121300 (R)	VDI 30	30	30	55	85	115	70	75	70	52	56,0	40
121231 (L) / 121232 (R)	VDI 30	30	30	55	100	130	70	75	70	52	56,0	40
121276 (L) / 121309 (R)	VDI 40	40	40	63	100	139	85	93	85	60	67,5	50
121301 (L) / 121225 (R)	VDI 40	40	40	63	120	159	85	93	85	60	67,5	50

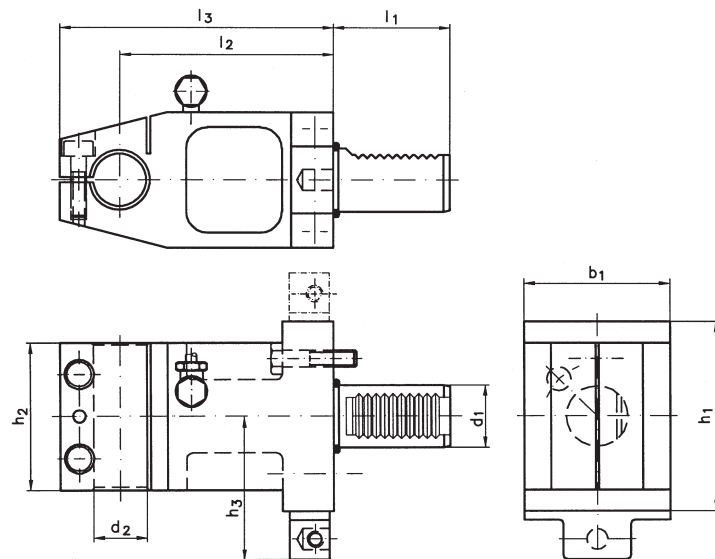
## Boring Bar Holder with Clamping

for manufacturer

**SAUTER**

for turret type

**Star-type turret**



Order No.	Size	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	b1 mm	h1 mm	h2 mm	h3 mm
121302	VDI 20	20	25	40	75	99,5	54	54	48	42,0
121245	VDI 25	25	25	48	75	99,5	54	60	48	48,0
121294	VDI 30	30	25	55	85	113,0	64	70	70	56,0
121310	VDI 30	30	32	55	85	113,0	64	70	70	56,0
121216	VDI 30	30	25	55	100	128,0	64	70	70	56,0
121246	VDI 30	30	32	55	100	128,0	64	70	70	56,0
121318	VDI 40	40	32	63	100	132,0	76	85	85	67,5
121258	VDI 40	40	32	63	120	132,0	76	85	85	67,5

## Boring Bar Holder

for manufacturer

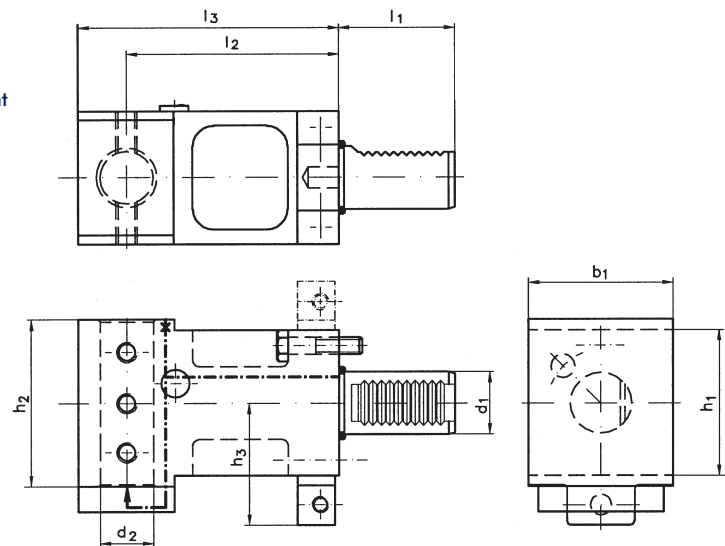
**SAUTER**

for turret type

**Star-type turret**



Internal coolant supply



Order No.	Size	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	b1 mm	h1 mm	h2 mm	h3 mm
121267	VDI 20	20	25	40	75	97,5	54	54	60	42,0
121304	VDI 25	25	25	48	75	97,5	54	60	60	48,0
121327	VDI 30	30	32	55	85	108,0	64	70	70	56,0
121217	VDI 30	30	32	55	100	123,0	64	70	70	56,0
121247	VDI 40	40	40	63	100	132,0	76	85	85	67,5
121268	VDI 40	40	40	63	120	152,0	76	85	85	67,5
121328	VDI 50	50	50	78	120	160,0	85	100	100	73,5

## Boring Bar Holder, Offset-Type

for manufacturer

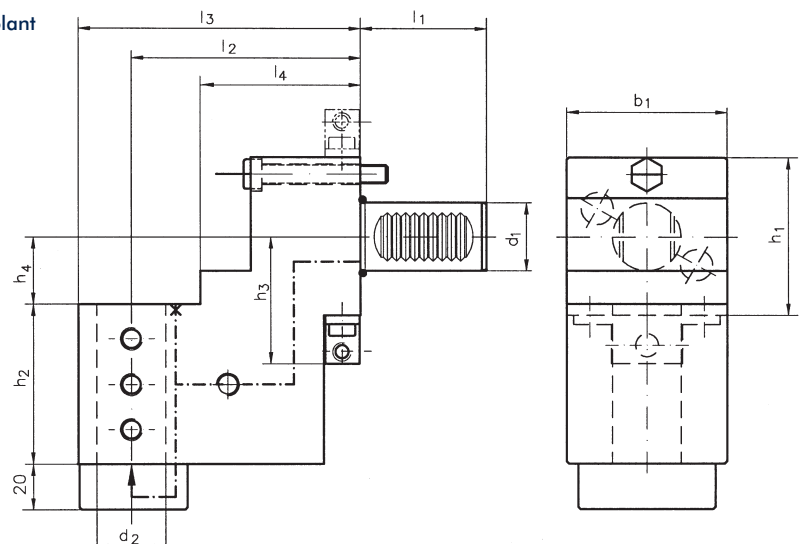
**SAUTER**

for turret type

**Star-type turret**



Internal coolant supply



Order No.	Size	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	l4 mm	b1 mm	h1 mm	h2 mm	h3 mm	h4 mm
121334	VDI 25	25	25	48	75	97,5	48	54	60	60	48,0	20
121279	VDI 30	30	32	55	100	123,0	70	64	70	70	56,0	30
121259	VDI 40	40	40	63	100	132,0	63	85	85	85	67,5	40

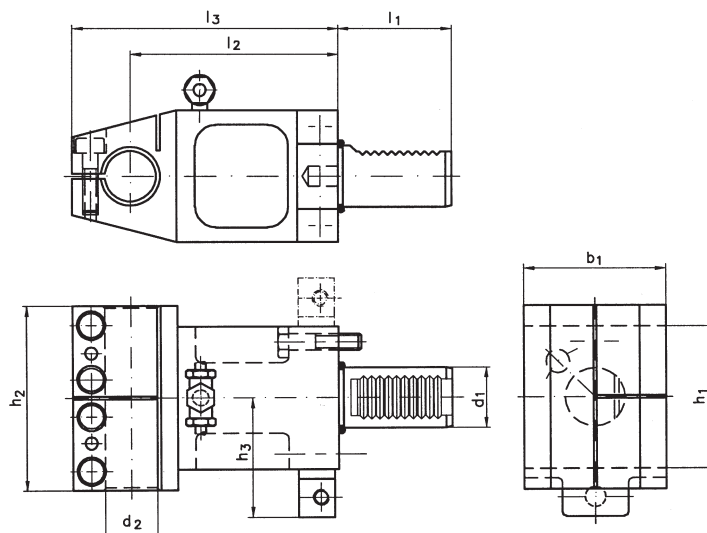
## Double Boring Bar Holder with Clamping

for manufacturer

**SAUTER**

for turret type

**Star-type turret**



Order No.	Size	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	b1 mm	h1 mm	h2 mm	h3 mm
121277	VDI 20	20	25	40	75	99,5	54	54	75	42
121326	VDI 25	25	25	48	75	99,5	54	60	75	48
121278	VDI 30	30	32	55	85	113,0	64	70	94	56
121303	VDI 30	30	32	55	100	128,0	64	70	94	56

## Double Boring Bar Holder

for manufacturer

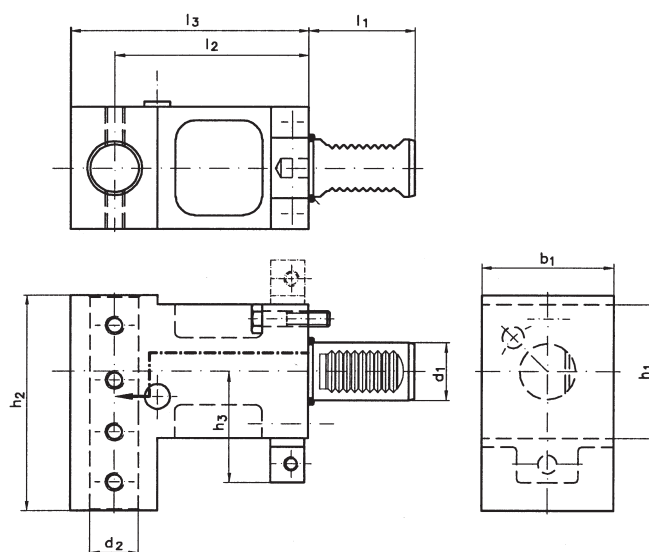
**SAUTER**

for turret type

**Star-type turret**



Internal coolant supply



For ordering please declare your required version (right-hand or left-hand)

Order No.	Size	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	b1 mm	h1 mm	h2 mm	h3 mm
121305 (L) / 121329 (R)	VDI 20	20	25	40	75	97,5	54	54	96	42,0
121260	VDI 20	20	25	40	75	97,5	54	54	96	42,0
121280 (L) / 121330 (R)	VDI 25	25	25	48	75	97,5	54	60	96	48,0
121281	VDI 25	25	25	48	75	97,5	54	60	96	48,0
121261 (L) / 121262 (R)	VDI 30	30	32	55	85	108,0	64	70	120	56,0
121312	VDI 30	30	32	55	85	108,0	64	70	120	56,0
121263 (L) / 121313 (R)	VDI 30	30	32	55	100	123,0	64	70	120	56,0
121269	VDI 30	30	32	55	100	123,0	64	70	120	56,0
121270	VDI 40	40	40	63	120	152,0	76	85	120	67,5

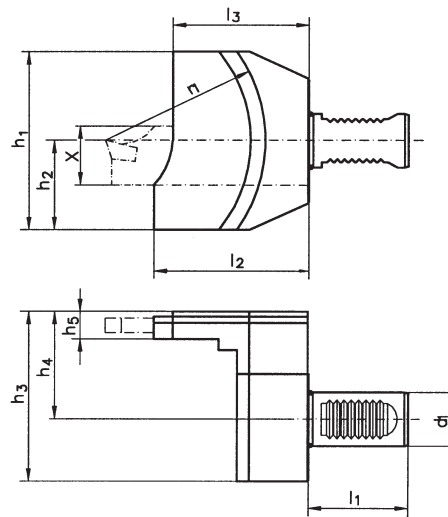
## Cutting Holder for „ISCAR“ Inserts

for manufacturer

**SAUTER**

for turret type

**Star-type turret**



Order No.	Size	d1 mm	l1 mm	l2 mm	l3 mm	h1 mm	h2 mm	h3 mm	h4 mm	h5 mm	r1 mm	X mm
121306	VDI 20	20	40	85,5	75	94	47	95	60	15,5	88	26
121285	VDI 25	25	48	85,0	75	73	39	72	43	15,5	88	26
121331	VDI 25	25	48	85,0	75	73	39	72	43	15,5	88	32
121332	VDI 30	30	55	85,5	75	100	50	95	60	15,5	88	26
121271	VDI 30	30	55	85,5	75	100	50	95	60	15,5	88	32
121282	VDI 40	40	63	85,5	75	100	50	95	60	15,5	88	26
121307	VDI 40	40	63	88,5	78	100	50	95	60	15,5	88	32

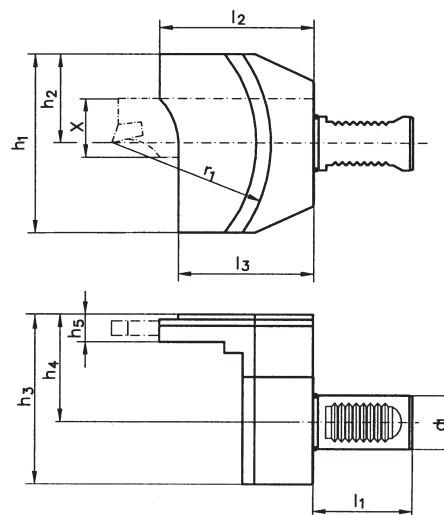
## Cutting Holder for „ISCAR“ Inserts, Overhead

for manufacturer

**SAUTER**

for turret type

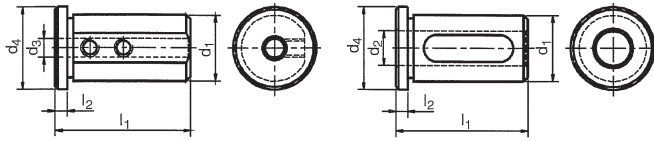
**Star-type turret**



Order No.	Size	d1 mm	l1 mm	l2 mm	l3 mm	h1 mm	h2 mm	h3 mm	h4 mm	h5 mm	r1 mm	X mm
121335	VDI 20	20	40	85,5	75	94	47	95	60	15,5	88	26
121339	VDI 25	25	48	85,0	75	73	39	72	43	15,5	88	26
121336	VDI 25	25	48	85,0	75	73	39	72	43	15,5	88	32
121264	VDI 30	30	55	85,5	75	100	50	95	60	15,5	88	26
121286	VDI 30	30	55	85,5	75	100	50	95	60	15,5	88	32
121314	VDI 40	40	63	85,5	75	100	50	95	60	15,5	88	26
121272	VDI 40	40	63	88,5	78	100	50	95	60	15,5	88	32

## Accessories for Sauter Boring Bar Holders

### Sleeve

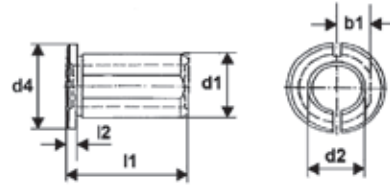


Pict. 1

Pict. 2

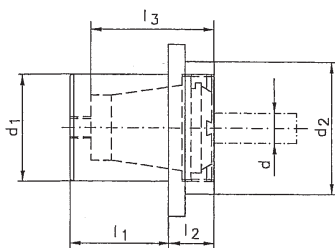
Order No.	Pict.	d1 mm	d2 mm	d3 mm	d4 mm	l1 mm	l2 mm
104527	1	25		6	29	50	4
104444	1	25		8	29	50	4
104445	1	25		10	29	50	4
104494	1	25		12	29	50	4
104537	2	25	16		29	50	4
104469	2	25	20		29	50	4
104528	1	32		6	36	58	5
104519	1	32		8	36	58	5
104454	1	32		10	36	58	5
104487	1	32		12	36	58	5
104548	2	32	16		36	58	5
104489	2	32	20		36	58	5
104522	2	32	25		36	58	5
104513	1	40		6	44	58	5
104507	1	40		8	44	58	5
104549	1	40		10	44	58	5
104531	1	40		12	44	58	5
104514	2	40	16		44	58	5
104555	2	40	20		44	58	5
104551	2	40	25		44	58	5
104609	2	40	32		44	58	5
104558	1	50		12	54	75	5
168951	1	50		6	54	75	5
104585	1	50		8	54	75	5
104552	1	50		10	54	75	5
104525	2	50	16		54	75	5
104586	2	50	20		54	75	5
104587	2	50	25		54	75	5
104588	2	50	32		54	75	5
104559	2	50	40		54	75	5

### Bushing, slottet



Order No.	d1 mm	d2 mm	d4 mm	l1 mm	l2 mm
104510	20	6	24	30	4
104492	20	8	24	30	4
104481	20	10	24	30	4
104461	20	12	24	30	4
104462	20	14	24	30	4
104501	20	15	24	30	4
104451	20	16	24	30	4
104418	25	6	29	40	4
104536	25	8	29	40	4
104493	25	10	29	40	4
104484	25	12	29	40	4
104504	25	14	29	40	4
104463	25	15	29	40	4
104545	25	16	29	40	4
104485	25	18	29	40	4
104511	25	20	29	40	4
104495	30	8	34	50	4
104496	30	10	34	50	4
104452	30	12	34	50	4
104470	30	15	34	50	4
104538	30	16	34	50	4
104539	30	20	34	50	4
104540	30	25	34	50	4
104453	32	8	36	50	4
104529	32	10	36	50	4
104486	32	12	36	50	4
104563	32	14	36	50	4
104497	32	15	36	50	4
104547	32	16	36	50	4
104488	32	18	36	50	4
104498	32	20	36	50	4
104543	32	25	36	50	4

### Collet Chuck for Boring Bar Holders



Order No.	d1 mm	d mm	d2 mm	l1 mm	l2 mm
121308	25	1-13	35	29	18
121315	32	1-16	40	32	20
121287	40	2-20	50	38	20

## VDI Toolholders

Our toolholders for CNC lathes feature cylindrical shanks acc. to DIN 69880/VDI 3425. They are made from case hardened steel, the hardness of the wearing surfaces is  $58 \pm 2$  HRC.

All functional surfaces are ground and browned. The tooling on the shank is ground.

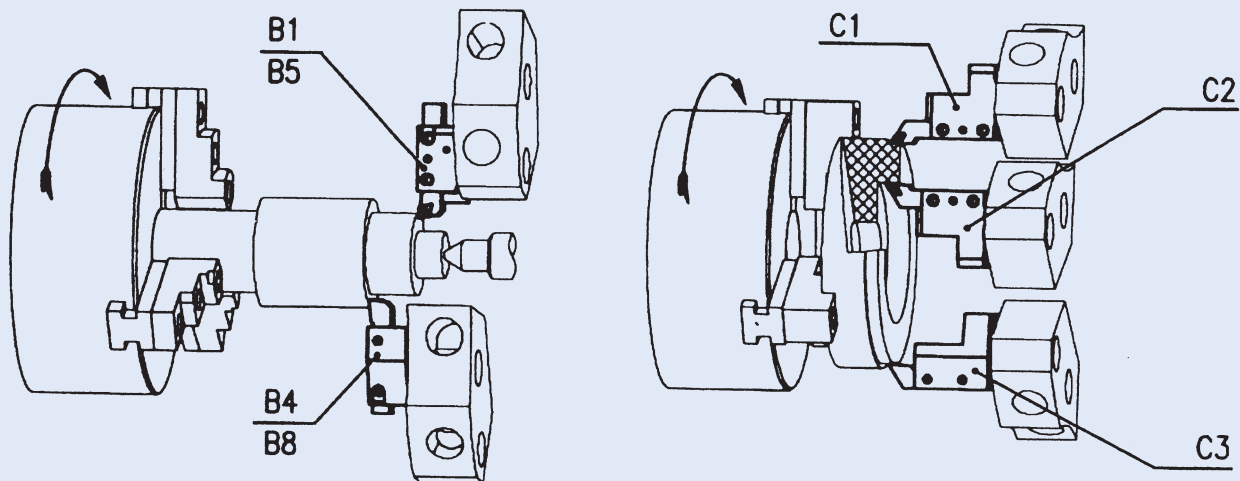
As far as technically possible, all tool holders are provided with internal coolant supply and adjustable ball-type nozzles.

They are fitted with a spring-loaded pressure plate.

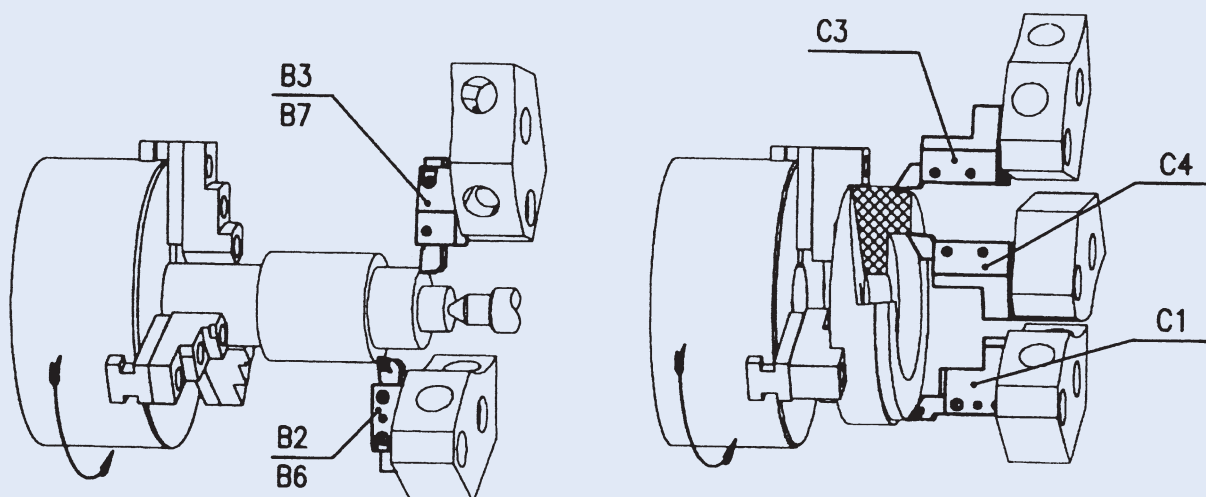
Further designs on request.



### Operation with Toolholders in Anti-clockwise Rotation

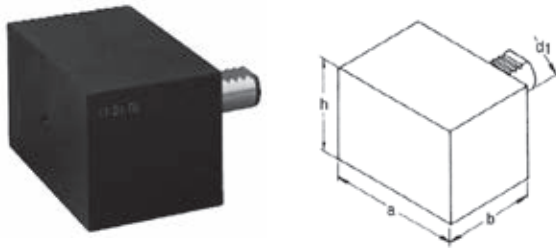


### Operation with Toolholders in Clockwise Rotation



## VDI Toolholders

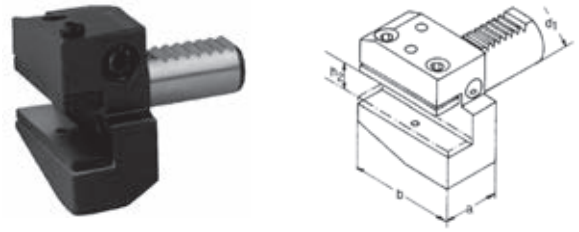
### Blanks



#### A1 rectangular

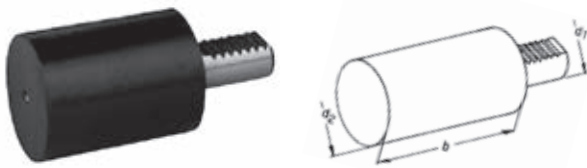
Order No.	d1 mm	a mm	h mm	b mm
105111	16	78	44	44
105163	20	100	60	65
105136	30	130	76	85
105154	40	151	96	100
105143	50	160	120	125
105171	60	165	125	160

### Radial Toolholders



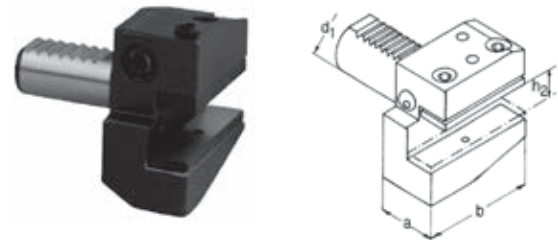
#### B1 right-hand, short

Order No.	d1 mm	h2 mm	a mm	b mm
104930	16	12/10	24	42
104900	20	16/12	30	55
104938	30	20/16	40	70
104939	40	25/20	44	85
104908	50	32/25	55	100
104909	60	32/25	60	125



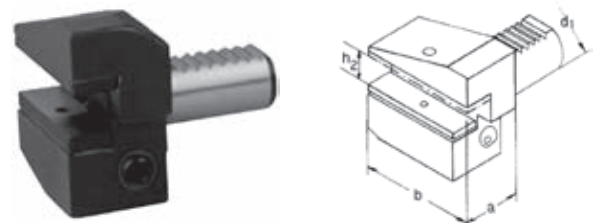
#### A2 round

Order No.	d1 mm	d2 mm	b mm
105161	16	40	60
105135	20	50	70
105092	30	68	100
105169	30	68	240
105137	40	83	120
105156	40	83	320
105157	50	98	135
105093	50	98	400
105170	60	123	150
105177	60	123	480



#### B2 left-hand, short

Order No.	d1 mm	h2 mm	a mm	b mm
104981	16	12/10	24	42
104958	20	16/12	30	55
104960	30	20/16	40	70
104988	40	25/20	44	85
104965	50	32/25	55	100
105025	60	32/25	60	125



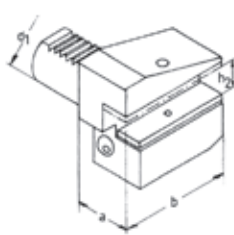
#### B3 overhead, right-hand, short

Order No.	d1 mm	h2 mm	a mm	b mm
104910	16	12/10	24	42
104904	20	16/12	30	55
104924	30	20/16	40	70
104949	40	25/20	44	85
104943	50	32/25	55	100
104970	60	32/25	60	125



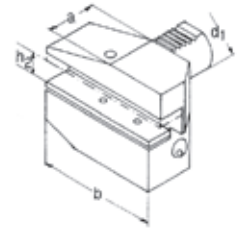
## VDI Toolholders

### Radial Toolholders



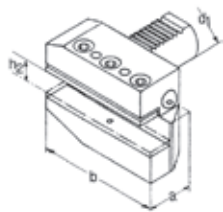
**B4 overhead, left-hand, short**

Order No.	d1 mm	h2 mm	a mm	b mm
104912	16	12/10	24	42
104927	20	16/12	30	55
104964	30	20/16	40	70
104956	40	25/20	44	85
104973	50	32/25	55	100
104935	60	32/25	60	125



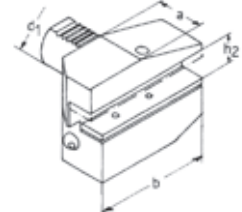
**B7 overhead, right-hand, long**

Order No.	d1 mm	h2 mm	a mm	b mm
104001	16	12/10	24	58
104025	20	16/12	30	75
104042	30	20/16	40	100
103985	40	25/20	44	118
104033	50	32/25	55	130
104008	60	32/25	60	145



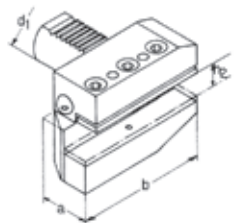
**B5 right-hand, long**

Order No.	d1 mm	h2 mm	a mm	b mm
104024	16	12/10	24	58
104032	20	16/12	30	75
103983	30	20/16	40	100
104007	40	25/20	44	118
103994	50	32/25	55	130
104050	60	32/25	60	145



**B8 overhead, left-hand, long**

Order No.	d1 mm	h2 mm	a mm	b mm
104060	16	12/10	24	58
103986	20	16/12	30	75
104061	30	20/16	40	100
104062	40	25/20	44	118
104034	50	32/25	55	130
104054	60	32/25	60	145

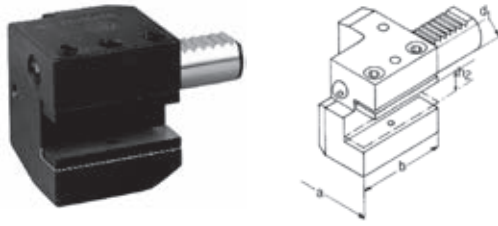


**B6 left-hand, long**

Order No.	d1 mm	h2 mm	a mm	b mm
104036	16	12/10	24	58
104003	20	16/12	30	75
104009	30	20/16	40	100
104043	40	25/20	44	118
104063	50	32/25	55	130
104077	60	32/25	60	145

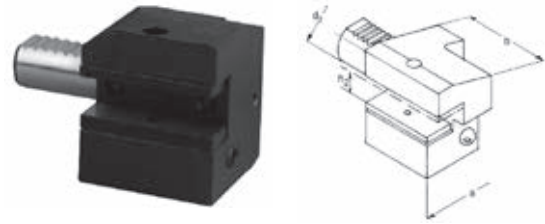
## VDI Toolholders

### Axial Toolholders



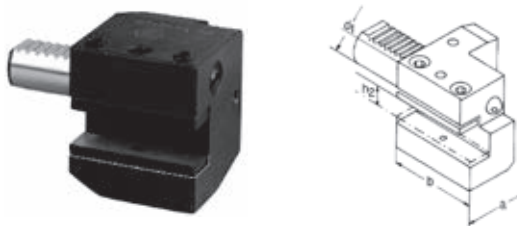
**C1 right-hand**

Order No.	d1 mm	h2 mm	b mm	a mm
103999	16	12/10	44	43
103928	20	16/12	50	52
103971	30	20/16	70	76
103992	40	25/20	85	85
103993	50	32/25	100	100
103982	60	32/25	125	125



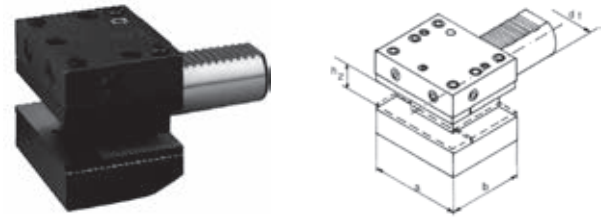
**C4 overhead, left-hand**

Order No.	d1 mm	h2 mm	b mm	a mm
104613	16	12/10	44	43
104569	20	16/12	50	52
104605	30	20/16	70	76
104606	40	25/20	85	85
104644	50	32/25	100	100
104570	60	32/25	125	125



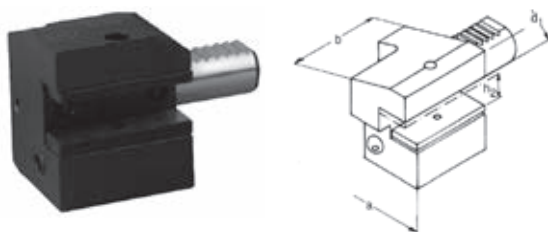
**C2 left-hand**

Order No.	d1 mm	h2 mm	b mm	a mm
104651	16	12/10	44	43
104715	20	16/12	50	52
104761	30	20/16	70	76
104661	40	25/20	85	85
104669	50	32/25	100	100
104753	60	32/25	125	125



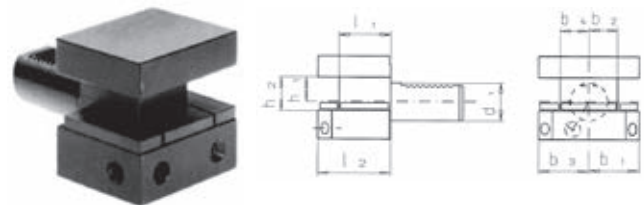
**D1 Axial multiple Toolholder**

Order No.	d1 mm	h2 mm	b mm	a mm
104064	30	20/16	60	76
104069	40	25/20	72	90
104056	50	32/25	85	105



**C3 overhead, right-hand**

Order No.	d1 mm	h2 mm	b mm	a mm
104184	16	12/10	44	43
104199	20	16/12	50	52
104209	30	20/16	70	76
104240	40	25/20	85	85
104201	50	32/25	100	100
104211	60	32/25	125	125



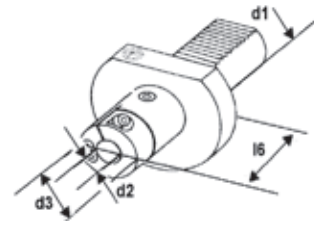
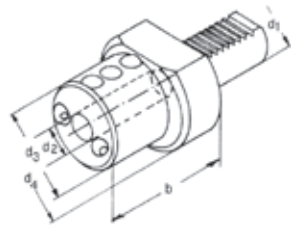
**D2 Axial multiple Toolholder, overhead**

Order No.	d1 mm	h2 mm	a mm	b mm
104086	30	20/16	60	76
104087	40	25/20	72	90
104013	50	32/25	85	105



## VDI Toolholders

### Boring Bar Holder



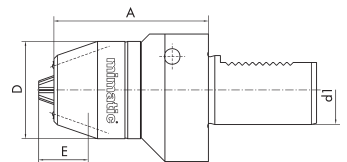
#### E2

Order No.	d1 mm	d2 mm	d4 mm	b mm
104139	16	6	40	44
104084	16	8	40	44
104085	16	10	40	44
104125	16	12	40	44
104149	16	16	40	44
104158	20	8	50	50
104126	20	10	50	50
104115	20	12	50	50
104159	20	16	50	50
104167	20	20	50	50
104150	20	25	50	60
104142	30	8	68	60
104195	30	10	68	60
104108	30	12	68	60
104130	30	16	68	60
104186	30	20	68	60
104178	30	25	68	60
104179	30	32	68	75
104153	40	8	83	75
104187	40	10	83	75
104109	40	12	83	75
104110	40	16	83	75
104155	40	20	83	75
104145	40	25	83	75
104119	40	32	83	75
104189	40	40	83	90
104168	50	12	98	90
104206	50	16	98	90
104182	50	20	98	90
104148	50	25	98	90
104207	50	32	98	90
104198	50	40	98	90
104157	50	50	98	100
104221	60	12	123	90
104192	60	16	123	90
104169	60	20	123	90
104164	60	25	123	90
104222	60	32	123	90
104165	60	40	123	90
104166	60	50	123	100

#### E2S slotted

Order No.	d1 mm	d2 mm	d3 mm	l6 mm
104194	30	6	30	57
104129	30	8	30	57
104107	30	10	36	57
104143	30	12	36	57
104203	30	16	40	57
104160	30	20	44	57
104204	30	25	49	72
104196	30	32	56	72
104144	40	10	36	62
104188	40	12	36	62
104111	40	16	40	62
104181	40	20	44	62
104118	40	25	49	77
104146	40	32	56	77
104163	40	40	64	77

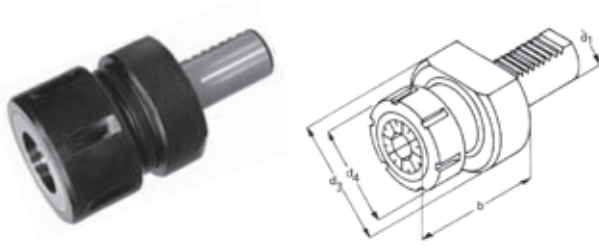
### Universal Chuck



Order No.	d1 mm	Range	A mm	D mm	E mm
131983	20	0,5-10	40	48,5	27
132019	30	0,5-13	90	56,5	29
132046	30	3,0-16	90	56,5	29
132006	40	0,5-13	90	56,5	29
132047	40	3,0-16	90	56,5	29
132033	50	0,5-13	90	56,5	29
132039	50	3,0-16	90	56,5	29

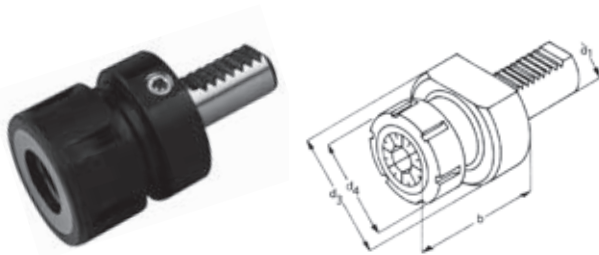
## VDI Toolholders

### Collet Chuck



#### OZ E3 DIN 6388

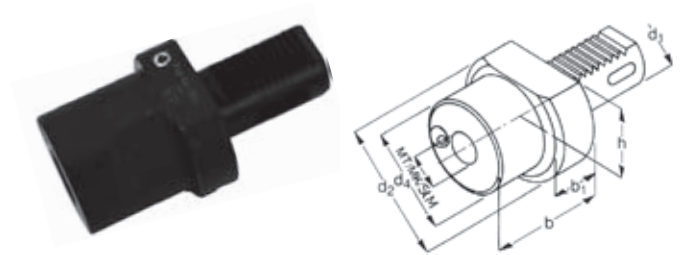
Order No.	d1 mm	Range	OZ	d3 mm	b mm
104653	16	1,5-16	415 E	40	65
104662	20	1,5-16	415 E	50	57
104579	30	1,5-25	462 E	68	75
104655	40	1,5-25	462 E	83	75
104673	40	3,5-32	467 E	83	90
104631	50	1,5-25	462 E	98	75
104656	50	3,5-32	467 E	98	90
104642	60	3,5-32	467 E	123	90



#### ER E4 DIN 6499

Order No.	d1 mm	Range	ER	d3 mm	b mm
104614	16	0,5-10	ER 16	40	40
104533	16	0,5-13	ER 20	40	44
104576	20	0,5-10	ER 16	50	40
104628	20	0,5-16	ER 25	50	54
104571	30	0,5-16	ER 25	68	57
104629	30	1,0-20	ER 32	68	74
104645	30	2,0-30	ER 40	68	74
104646	40	0,5-16	ER 25	83	70
104615	40	1,0-20	ER 32	83	84
104594	40	2,0-30	ER 40	83	75
104616	50	2,0-30	ER 40	98	90
104619	60	2,0-30	ER 40	123	75

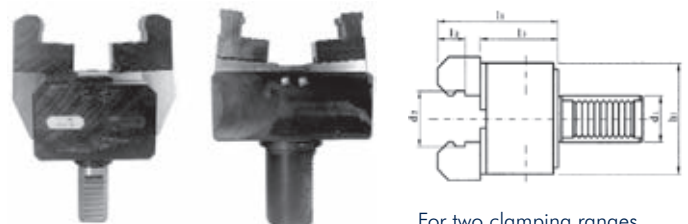
### Morse Taper Holder



#### F

Order No.	d1 mm	MK	h mm	d2 mm	b mm
104347	20	1	23,0	50	22
104265	30	1	28,0	68	27
104297	30	2	28,0	68	36
104350	30	3	28,0	68	66
104352	40	2	32,5	83	36
104307	40	3	32,5	83	50
104299	40	4	32,5	83	80
104319	50	2	35,0	98	36
104383	50	3	35,0	98	45
104332	50	4	35,0	98	55
104328	50	5	35,0	98	68
104335	60	3	42,5	123	36
104393	60	4	42,5	123	50
104394	60	5	42,5	123	81

### Bar Puller



For two clamping ranges with reverse jaws

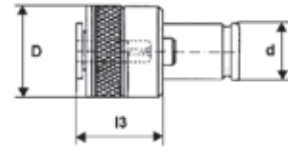
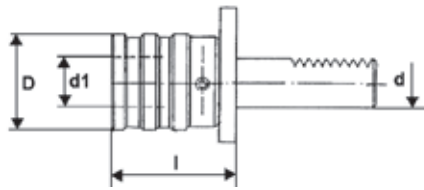
#### KH

Order No.	d1 mm	Range #1	Range #2	b1 mm	h1 mm	l1 mm	l2 mm	l3 mm
104757	20	6-45	45-100	50	72	46	4	51
104806	30	6-56	54-100	50	72	46	4	51
104798	40*	6-60	54-110	60	110	48	4	53
104789	50	6,75	62-110	65	130	67	5	73

\* With reversible clamping jaws

## VDI Toolholders

### Quick Change Tapping Chucks



#### With length compensation on traction and pressure

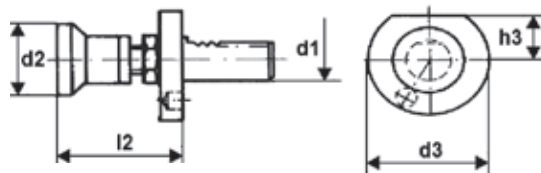
Order No.	d mm	Size	D mm	d1 mm	l mm
104815	20	SES 1	36	19	52,2
104800	30	SES 1	38	19	55,0
104739	30	SES 2	54	31	77,0
104758	40	SES 1	38	19	55,0
104780	40	SES 2	54	31	77,0
104807	40	SES 3	78	48	122,0
104759	50	SES 1	36	19	52,2
104781	50	SES 2	53	31	76,0
104740	50	SES 3	78	48	108,0
104801	50	SES 4	96	60	122,0
104802	60	SES 4	96	60	119,0

#### Quick change insert with safety coupling

Order No.	Range	Size	d mm	D mm	l3 mm
104819	M10	SES 1	19	32,6	25
12.4605Mxx	M8 -M20	SES 2	31	50,5	31
12.4606Mxx	M14-M33	SES 3	48	72,0	45
12.4608Mxx	M22-M48	SES 4	60	95,0	68

Please specify the thread or the dimension of the tap. Represents new order numbers from 104767 to 104860.

### Material Stop



#### MW travelling, adjustable

Order No.	d1 mm	d2 mm	d3 mm	l2 mm	h3 mm
104308	20	26	50	50-70	23,0
104341	20	32	50	50-70	23,0
104377	20	42	50	50-70	23,0
104326	30	32	68	62-95	28,0
104309	30	42	68	62-95	28,0
104358	30	58	68	62-95	28,0
104334	40	32	83	62-95	32,5
104283	40	42	83	62-95	32,5
104301	40	58	83	62-95	32,5

### Protection Plug



#### Z2 Steel/Plastic

Order No.	d1 mm	Material	D mm	l mm
104611	16	steel	40	13
104561	16	plastic	40	13
104567	20	steel	50	16
104601	20	plastic	50	16
104602	30	steel	68	16
104532	30	plastic	68	16
104603	40	steel	83	20
104612	40	plastic	83	20
104562	50	steel	98	20
104575	50	plastic	98	20
104604	60	steel	123	20
104635	60	plastic	123	20

## Accessories

### Wrenches and Clamping Nuts



#### Wrench for ER Clamping Nuts

Order No.	Size	Type
112912	ER 11	inlying
112954	ER 16	inlying
112929	ER 20	inlying
112913	ER 25	inlying
112900	ER 32	inlying
112867	ER 40	inlying
107628	ER 40	outlying

#### ER Clamping Nuts

Order No.	Size	Type	Internal coolant
112953	ER 11	inlying	
112860	ER 16	inlying	
112938	ER 20	inlying	
112961	ER 25	inlying	
112977	ER 32	inlying	
112946	ER 40	inlying	
112962	ER 16	inlying	✓
112940	ER 20	inlying	✓
112901	ER 25	inlying	✓
112963	ER 32	inlying	✓
112978	ER 40	inlying	✓
112513	ER 40	outlying	
117744	ER 40	outlying	✓

### Hook wrench to hold against

**DIN 1810 A**  
(with nose)



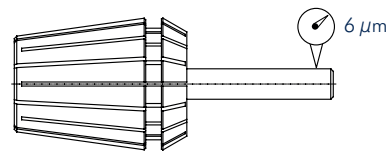
**DIN 1810 B**  
(with pivot)



Order No.	Size	Type	DIN
107557	ER 16	inlying	1810-B
107608	ER 20	inlying	1810-B
107446	ER 25	inlying	1810-B
107558	ER 25	outlying	1810-A
107642	ER 32	inlying	1810-B
107607	ER 32	outlying	1810-B
107566	ER 40	inlying	1810-A
107628	ER 40	outlying	1810-A
107605		Sawblade holder	1810-A
107447		Milling arbor 22	1810-B

## Collets DIN 6499-B

Concentricity 6  $\mu\text{m}$

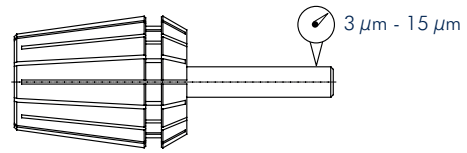


D mm	Order No.					
	ER 11	ER 16	ER 20	ER 25	ER 32	ER 40
1,0	120006	120055				
1,5	119994	120084				
2,0	119995	120068	120166	120187		
2,5	120031	120078	120182	120161		
3,0	120013	120071	120175	120223	120431	120586
3,5	120022	120096	120191	120224	120465	120600
4,0	120000	120097	120168	120245	120473	120581
4,5	120023	120074	120209	120253	120475	120565
5,0	120002	120099	120176	120271	120491	120628
5,5	120004	120083	120145	120229	120523	120616
6,0	120015	120112	120210	120281	120448	120637
6,5	120008	120115	120192	120264	120449	120638
7,0	120048	120108	120193	120238	120540	120655
7,5		120119	120203	120298	120467	120673
8,0		120120	120205	120255	120514	120582
8,5		120122	120178	120299	120496	120682
9,0		120124	120151	120291	120532	120621
9,5		120125	120152	120217	120567	120649
10,0		120130	120218	120300	120568	120676
10,5			120211	120292	120515	120630
11,0			120212	120274	120517	120631
11,5			120207	120277	120518	120679
12,0			120208	120270	120571	120641
12,5			120196	120316	120572	120650
13,0			120180	120279	120544	120684
13,5				120317	120552	120667
14,0				120287	120545	120653
14,5				120353	120536	120642
15,0				120318	120508	120608
15,5				120355	120583	120658
16,0				120261	120546	120643
16,5					120592	120624
17,0					120561	120681
17,5					120562	120635
18,0					120528	120644
18,5					120595	120718
19,0					120584	120693
19,5					120585	120694
20,0					120578	120669
20,5						120695
21,0						120705
21,5						120727
22,0						120662
22,5						120715
23,0						120707
23,5						120670
24,0						120671
24,5						120745
25,0						120756
25,5						120738
26,0						120672
Collet sets	120049	120131	120154	120349	120612	120730



## Collets DIN 6499-B

Class 2

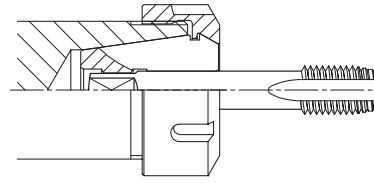


D mm	Order No.					
	ER 11	ER 16	ER 20	ER 25	ER 32	ER 40
Collet sets	–	152712	120174	152713	152715	152716

## Tap Shank Dimensions

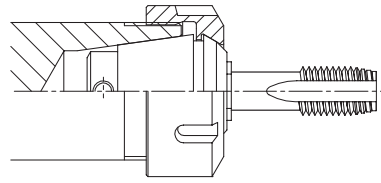
Thread		ISO 529		ISO 2283		DIN 371		DIN 357/376		DIN 352		JIS B 4430 1998		ASME B 94.9 1999	
mm	inch	∅ mm	□ mm	∅ mm	□ mm	∅ mm	□ mm	∅ mm	□ mm	∅ mm	□ mm	∅ mm	□ mm	∅ mm	□ mm
M 1,0		2,50	2,00			2,50	2,10			2,50	2,10	3,00	2,50		
M 1,1		2,50	2,00			2,50	2,10			2,50	2,10	3,00	2,50		
M 1,2		2,50	2,00			2,50	2,10			2,50	2,10	3,00	2,50		
M 1,4		2,50	2,00			2,50	2,10			2,50	2,10	3,00	2,50		
M 1,6	1/16	2,50	2,00			2,50	2,10			2,50	2,10	3,00	2,50	0,141	0,110
M 1,7						2,50	2,10			2,50	2,10	3,00	2,50		
M 1,8		2,50	2,00			2,50	2,10			2,50	2,10	3,00	2,50	0,141	0,110
M 2,0		2,50	2,00			2,80	2,10			2,80	2,10	3,00	2,50	0,141	0,110
M 2,2		2,80	2,24			2,80	2,10			2,80	2,10	3,00	2,50	0,141	0,110
M 2,3						2,80	2,10			2,80	2,10	3,00	2,50		
M 2,5	3/32	2,80	2,24			2,80	2,10			2,80	2,10	3,00	2,50	0,141	0,110
M 2,6						2,80	2,10			2,80	2,10	3,00	2,50		
M 3,0	1/8	3,15	2,50	2,24	1,80	3,50	2,70	2,20		3,50	2,70	4,00	3,20	0,141	0,110
M 3,5		3,55	2,80	2,50	2,00	4,00	3,00	2,50	2,10	4,00	3,00	4,00	3,20	0,141	0,110
M 4,0	5/32	4,00	3,15	3,15	2,50	4,50	3,40	2,80	2,10	4,50	3,40	5,00	4,00	0,168	0,131
M 4,5	3/16	4,50	3,55	3,55	2,80	6,00	4,90	3,50	2,70	6,00	4,90	5,00	4,00	0,194	0,152
M 5,0		5,00	4,00	4,00	3,15	6,00	4,90	3,50	2,70	6,00	4,90	5,50	4,50	0,194	0,152
M 6,0	1/4	6,30	5,00	4,50	3,55	6,00	4,90	4,50	3,40	6,00	4,90	6,00	4,50	0,255	0,191
M 7,0	5/16	7,10	5,60	5,60	4,50	7,00	5,50	5,50	4,30	6,00	4,90	6,20	5,00	0,318	0,238
M 8,0		8,00	6,30	6,30	5,00	8,00	6,20	6,00	4,90	6,00	4,90	6,20	5,00	0,318	0,238
M 9,0		9,00	7,10	7,10	5,60	9,00	7,00	7,00	5,50	7,00	5,50	7,00	5,50		
M 10,0	3/8	10,00	8,00	8,00	6,30	10,00	8,00	7,00	5,50	7,00	5,50	7,00	5,50	0,387	0,286
M 11,0		8,00	6,30	8,00	6,30			8,00	6,20	8,00	6,20	8,00	6,00		
M 12,0	1/2	9,00	7,10	9,00	7,10			9,00	7,00	9,00	7,00	8,50	6,50	0,367	0,275
M 14,0	9/16	11,20	9,00	11,20	9,00			11,00	9,00	11,00	9,00	10,50	8,00	0,429	0,322
M 16,0	5/8	12,50	10,00	12,50	10,00			12,00	9,00	12,00	9,00	12,50	10,00	0,480	0,360
M 18,0	11/16	14,00	11,20	14,00	11,20			14,00	11,00	14,00	11,00	14,00	11,00	0,542	0,406
M 20,0	15/16	14,00	11,20	14,00	11,20			16,00	12,00	16,00	12,00	15,00	12,00	0,652	0,489
M 22,0	7/8	16,00	12,50	16,00	12,50			18,00	14,50	18,00	14,50	17,00	13,00	0,697	0,523
M 24,0	15/16	18,00	14,00	18,00	14,00			18,00	14,50	18,00	14,50	19,00	15,00	0,760	0,570
M 27,0	11/16	20,00	16,00					20,00	16,00	20,00	16,00	20,00	15,00	0,896	0,672
M 30,0	13/16	20,00	16,00					22,00	18,00	22,00	18,00	23,00	17,00	1,021	0,766

## Threading Collets Type BG without Length Compensation



D mm	Square mm	Norm	Order No.						
			ER 11	ER 16	ER 20	ER 25	ER 32	ER 40	ER 50
2,8	2,1	DIN	120753						
3,5	2,7	DIN	120807						
4,0	3,0	DIN	120842						
4,0	3,15/3,2	ISO,JIS	161023	120822	120858	120830	120874		
4,5	3,4	DIN	120878	120823	120824	120903	120917		
5,0	4,0	ISO,JIS	161024	120879	120891	120911	120899		
5,5	4,3	DIN		120884	120897	120866	120919		
6,0	4,9	DIN	120821	120815	120902	120872	120918	161025	
6,3	5,0	ISO		120885	120849	120873	120913	161026	
7,0	5,5	DIN,JIS		120886	120859	120898	120875	161027	
7,1	5,6	ISO		120857	120828	120880	120876	161028	
8,0	6,2/6,3	DIN,ISO		120887	120850	120910	120867	161029	
9,0	7,0/7,1	DIN,ISO		120888	120871	120916	120892	161030	
10,0	8,0	DIN,ISO			120829	120831	120893	161031	
11,0	9,0	DIN			120909	120832	120868	161032	
11,2	9,0	ISO			120889	120904	120882	161033	
12,0	9,0	DIN			176418	120833	120877	161034	
12,5	10,0	ISO,JIS				120905	120900	178573	
14,0	11,0/11,2	DIN,ISO,JIS				120881	120901	161035	
16,0	12,0/12,5	DIN,ISO				120890	120894	169450	
18,0	14,0/14,5	DIN,ISO					120895	173480	
20,0	16,0	DIN,ISO					120906	161036	
22,0	18,0	DIN						161037	161038
25,0	20,0	DIN							161039
28,0	22,0	DIN							161040
32,0	24,0	DIN							161041

## Threading Collets Type ET with Length Compensation



D mm	Norm	Order No.					
		ER 11	ER 16	ER 20	ER 25	ER 32	ER 40
1,4	DIN	120801	120724*				
1,6	DIN	120735	120786*				
1,8	DIN	120825	120818*				
2,0	ISO	161000	120802				
2,2	DIN	120817	120776*	120788			
2,24	ISO	161001	120834	161006			
2,5	DIN,ISO	120785	120747*	120726	120851		
2,8	DIN,ISO	120775	120797*	120778	120837*		
3,0	JIS		120725		120780		
3,15	ISO	161002	120787	161007	120811		
3,5	DIN	120723	120771*	120803	120804*		
3,55	ISO	161003	120748	161008	120844		
4,0	DIN,ISO,JIS		120810*	120779	120826*		
4,5	DIN,ISO		120798*	120789	120838*	120839*	
5,0	ISO,JIS		120835	161009	120805	161013	
5,5	DIN,ISO		120777	161010	120860	161014	
5,6	ISO		161004	161011	120869	161015	
6,0	DIN,JIS		120843	120836	120749*	120846*	120814*
6,2	JIS				120852		
6,3	ISO		161005	161012	120870	161016	161019
7,0	DIN,JIS			120819	120812*	120863*	120848*
7,1	ISO				120861	161017	161020
8,0	DIN,ISO,JIS				120853*	120864*	120752*
8,5	JIS				120845		
9,0	DIN,ISO				120750*	120865*	120856*
10,0	DIN,ISO				120820	120854*	120751*
11,0	DIN					120862*	120855*
11,2	ISO					161018	161021
12,0	DIN					120813*	120806*
12,5	ISO,JIS					166987	161022
14,0	JIS						120840*
16,0	DIN,ISO						120841*
Collet sets*			152717		152718	120847	120827

\* Collet sets include the star\* marked collets

## Accessories

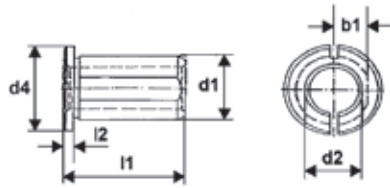
### ER Seal Disc



Tightness range mm	Order No.				
	ER 16	ER 20	ER 25	ER 32	ER 40
3,0 - 2,5	172713	163519	112863	112704	112910
3,5 - 3,0	163517	160220	112838	112830	112927
4,0 - 3,5	173372	163518	112833	112705	112951
4,5 - 4,0	160212	160221	112888	112743	112883
5,0 - 4,5	163515	163520	112753	112726	112884
5,5 - 5,0	160214	160222	112707	112734	112899
6,0 - 5,5	112891	112744	112871	112831	112959
6,5 - 6,0	160215	160223	112889	112810	112936
7,0 - 6,5	163516	112855	112839	112832	112846
7,5 - 7,0	160216	160224	112814	112760	112919
8,0 - 7,5	112897	112865	112817	112834	112911
8,5 - 8,0	160217	160225	112864	112780	112960
9,0 - 8,5	178391	163521	112890	112835	112952
9,5 - 9,0	160218	160227	112708	112706	112945
10,0 - 9,5	172458	112844	112811	112725	112821
10,5 - 10,0		160228	112843	112732	112908
11,0 - 10,5		163522	112752	112779	112916
11,5 - 11,0		160230	112852	112803	112841
12,0 - 11,5		112892	112861	112733	112924
12,5 - 12,0		160231	112812	112825	112925
13,0 - 12,5		160232	112870	112804	112894
13,5 - 13,0			112836	112826	112909
14,0 - 13,5			112798	112827	112881
14,5 - 14,0			112813	112699	112933
15,0 - 14,5			112862	112688	112942
15,5 - 15,0			112879	112805	112856
16,0 - 15,5			112837	112806	112822
16,5 - 16,0				112828	112943
17,0 - 16,5				112809	112770
17,5 - 17,0				112716	112842
18,0 - 17,5				112769	112762
18,5 - 18,0				112807	112917
19,0 - 18,5				112797	112882
19,5 - 19,0				112689	112895
20,0 - 19,5				112829	112845
20,5 - 20,0					112857
21,0 - 20,5					112823
21,5 - 21,0					112896
22,0 - 21,5					112934
22,5 - 22,0					112918
23,0 - 22,5					112944
23,5 - 23,0					112926
24,0 - 23,5					112858
24,5 - 24,0					112935
25,0 - 24,5					112771
25,5 - 25,0					112950
26,0 - 26,5					112824
Set of seal discs	167490	112907	112735	112715	166918

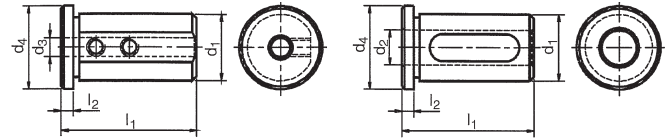
## Accessories for Toolholder VDI 3425

### Reducing Sleeve, Slotted



Order No.	d1 mm	d2 mm	d4 mm	l1 mm	l2 mm
104510	20	6	24	30	4
104492	20	8	24	30	4
104481	20	10	24	30	4
104461	20	12	24	30	4
104462	20	14	24	30	4
104501	20	15	24	30	4
104451	20	16	24	30	4
104418	25	6	29	40	4
104536	25	8	29	40	4
104493	25	10	29	40	4
104484	25	12	29	40	4
104504	25	14	29	40	4
104463	25	15	29	40	4
104545	25	16	29	40	4
104485	25	18	29	40	4
104511	25	20	29	40	4
104453	32	8	36	50	4
104529	32	10	36	50	4
104486	32	12	36	50	4
104563	32	14	36	50	4
104497	32	15	36	50	4
104547	32	16	36	50	4
104488	32	18	36	50	4
104498	32	20	36	50	4
104543	32	25	36	50	4
104508	40	10	44	78	4
104565	40	12	44	78	4
104550	40	14	44	78	4
104523	40	15	44	78	4
104582	40	16	44	78	4
104524	40	18	44	78	4
104591	40	20	44	78	4
104584	40	25	44	78	4
104608	40	32	44	78	4

### Reducing Sleeve



Pict. 1

Pict. 2

Order No.	Pict.	d1 mm	d2 mm	d3 mm	d4 mm	l1 mm	l2 mm
104527	1	25		6	29	50	4
104444	1	25		8	29	50	4
104445	1	25		10	29	50	4
104494	1	25		12	29	50	4
104537	2	25	16		29	50	4
104469	2	25	20		29	50	4
104528	1	32		6	36	58	5
104519	1	32		8	36	58	5
104454	1	32		10	36	58	5
104487	1	32		12	36	58	5
104548	2	32	16		36	58	5
104489	2	32	20		36	58	5
104522	2	32	25		36	58	5
104513	1	40		6	44	58	5
104507	1	40		8	44	58	5
104549	1	40		10	44	58	5
104531	1	40		12	44	58	5
104514	2	40	16		44	58	5
104555	2	40	20		44	58	5
104551	2	40	25		44	58	5
104609	2	40	32		44	58	5
168951	1	50		6	54	75	5
104585	1	50		8	54	75	5
104552	1	50		10	54	75	5
104558	1	50		12	54	75	5
104525	2	50	16		54	75	5
104586	2	50	20		54	75	5
104587	2	50	25		54	75	5
104588	2	50	32		54	75	5
104559	2	50	40		54	75	5

## Precision Chucks



## CUTTING TOOLS

<b>Milling</b>	Thread Milling	18-49	1
	Large Thread Milling	50-85	2
	Gear Milling	86-91	3
	Slot Milling	92-123	4
	Contour and Radius Milling Chamfering, Deburring	124-131	5
<b>Sawing, Slitting</b>	Sawing, Cutting, Slitting	132-141	6
<b>Bore Machining</b>	Drill Milling, Counterboring	142-157	7
	Reaming	158-165	8
<b>Axial Grooving</b>	Axial Grooving, adjustable	166-171	9
<b>Special Tools</b>	Special- and Combination Tools	172-175	10
<b>General</b>	Technical Cutting Data	176-187	11

## DRIVEN TOOLS

<b>Driven Toolholders</b>	Angle Heads - Monoblock and Modular for CNC Machining Centers	188-259	12
	Live Tools for CNC Turning Machines	260-461	13
	Multi-Spindle Technology	462-467	14
	Modular Quick Change Systems mi and Hydroflex	468-483	15
<b>Complete Solutions</b>	Compact Driven Toolholders with Interface for Carbide Inserts	484-489	16
	Driven Tool Holders with Modular Interface for Machining Solutions	490-495	17

## TOOL CLAMPING

<b>Clamping Technology</b>	Static Toolholders for CNC Turning Machines	496-531	18
	Precision Chucks	532-543	19

# mimatic<sup>®</sup> Makes Machine Tools Complete!

## Precision

mimatic<sup>®</sup> Universal Chucks guarantee maximum concentricity, reliability and tool life.

## Force

Because of the particularly high clamping forces, mimatic<sup>®</sup> Universal Chucks securely lock tool in the chuck.

## Flexibility

mimatic<sup>®</sup> Universal Chucks can be used flexibly for drilling, reaming, countersinking and milling.

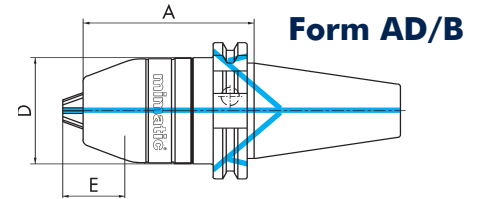
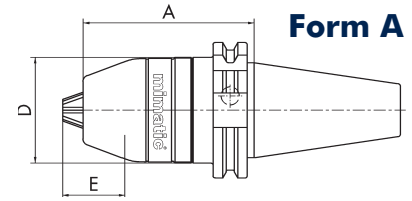


	High Performance Precision Chucks			Standard Chucks		
Clamping range (mm)	0,5-10	0,5-13	2,5-16	0,5-10	0,5-13	2,5-16
Concentricity within clamping range (mm)	3-10	3-13	5-16	3-10	3-13	5-16
Max. tool shank diameter (mm)	10	13	16	10	13	16
Max. Revolutions per minute (min <sup>-1</sup> )	10000 (fine balanced up to 30000 r.p.m. *)					
Concentricity (mm)	< 0.015			< 0.03		
Torque (Nm)	45	70	80	30	70	80
Clamping method	Laterally with worm drive, torque 12 Nm					
Coolant supply	No	Central or nozzles	Nozzles	Nozzles	Central or nozzles	



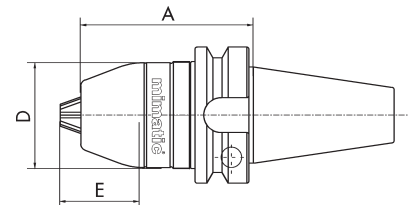
## Precision Chucks

### DIN 69871 A/AD/B

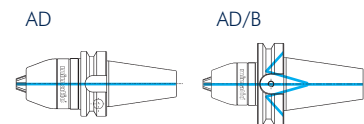


Order No. High Performance Precision Chucks	Standard Chucks	SK	A mm	D mm	Clamping Range	E mm	Internal coolant
132208	102880	30	80	43,0	0,5-10	29	
132192	131990	40	80	43,0	0,5-10	29	
132242	131986	40	80	48,5	0,5-13	29	
132394	132015	40	80	51,0	2,5-16	29	
132227	131997	40	80	48,5	0,5-13	29	AD/B
132396	132017	40	80	51,0	2,5-16	29	AD/B
132231	131961	50	110	48,5	0,5-13	29	
132420	132024	50	110	51,0	2,5-16	29	
132246	131987	50	110	48,5	0,5-13	29	AD/B
132415	132032	50	110	51,0	2,5-16	29	AD/B

### JIS B6339 (MAS 403 BT)



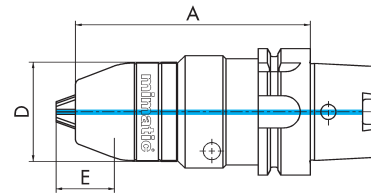
Internal coolant:



Order No. High Performance Precision Chucks	Standard Chucks	BT	A mm	D mm	Clamping Range	E mm	Internal coolant
132198	131985	30	91	43,0	0,5-10	29	
132265	132002	40	80	48,5	0,5-13	29	
132455	132044	40	80	51,0	2,5-16	29	
132273	132003	40	80	48,5	0,5-13	29	AD
132445	132036	40	80	51,0	2,5-16	29	AD
132277	132005	50	120	48,5	0,5-13	29	
132449	132045	50	120	51,0	2,5-16	29	
132285	131989	50	120	48,5	0,5-13	29	AD/B
132450	132037	50	120	51,0	2,5-16	29	AD/B

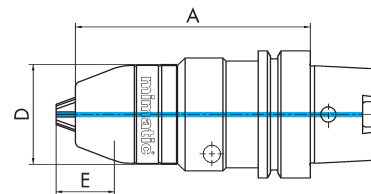
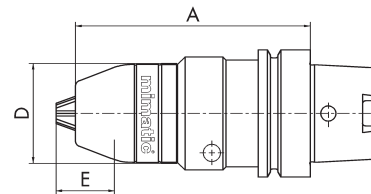
## Precision Chucks

### HSK DIN 69893-1 Form A



Order No. High Performance Precision Chucks	HSK	A mm	D mm	Clamping Range	E mm	Internal coolant
132342	50	117	48,5	0,5-13	29	✓
132517	50	117	51,0	2,5-16	29	✓
132340	63	117	48,5	0,5-13	29	✓
132513	63	117	51,0	2,5-16	29	✓
132323	100	125	48,5	0,5-13	29	✓
132516	100	125	51,0	2,5-16	29	✓

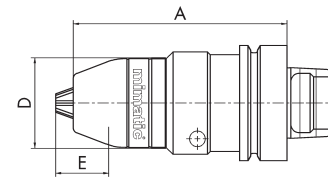
### HSK DIN 69893-5 Form E



Order No. High Performance Precision Chucks	HSK	A mm	D mm	Clamping Range	E mm	Internal coolant
132352	50	117	48,5	0,5-13	29	
132555	50	117	48,5	2,5-16	29	
132366	50	117	48,5	0,5-13	29	✓
132569	50	117	48,5	2,5-16	29	✓
132367	63	117	48,5	0,5-13	29	
132524	63	117	48,5	2,5-16	29	
102956	63	117	48,5	0,5-13	29	✓
102996	63	117	48,5	2,5-16	29	✓

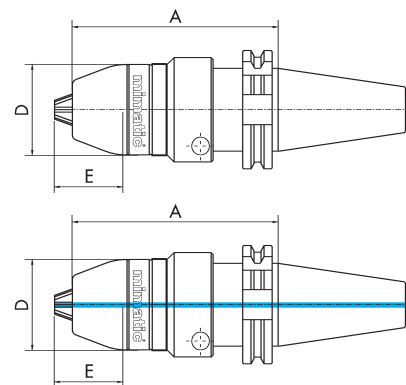
## Precision Chucks

### HSK DIN 69893-1 Form F



Order No. High Performance Precision Chucks	HSK	A mm	D mm	Clamping Range	E mm
102960	50	117	48,5	0,5-13	29
132562	50	117	48,5	2,5-16	29
132371	63	117	48,5	0,5-13	29
132525	63	117	48,5	2,5-16	29

### ANSI-CAT metrical/UNC

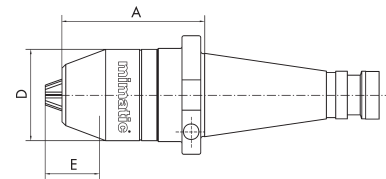


Order No. High Performance Precision Chucks	Standard Chucks	CAT	A mm	D mm	Clamping Range	E mm	Internal coolant
<b>metrical thread</b>							
132250	131995	40	110	48,5	0,5-13	29	
132432	102894	40	110	51,0	2,5-16	29	
132251	131999	40	110	48,5	0,5-13	29	AD
132426	102895	40	110	51,0	2,5-16	29	AD
<b>UNC thread</b>							
132252	132000	40	110	48,5	0,5-13	29	
132434	132034	40	110	51,0	2,5-16	29	
132255	132011	40	110	48,5	0,5-13	29	AD
132429	132041	40	110	51,0	2,5-16	29	AD

- **HSK chucks:** Coolant bridging tubes are not included in delivery
- **Accessories and spare parts on request**

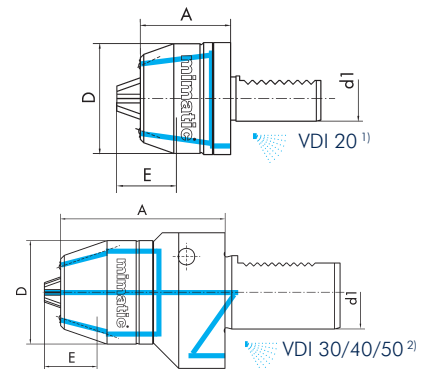
## Precision Chucks

### DIN 2080



Order No.	SK	A mm	D mm	Clamping Range	E mm
Standard Chucks					
132001	40	75,5	48,5	0,5-13	29
132035	40	75,5	51,0	2,5-16	29
132013	50	110,0	48,5	0,5-13	29
132043	50	110,0	51,0	2,5-16	29

### DIN 69880 (VDI)

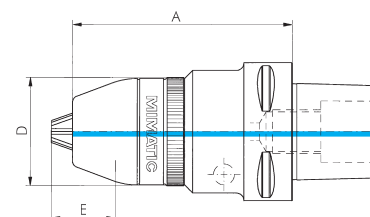


Order No.	VDI	A mm	D mm	Clamping Range	E mm	Internal coolant
Standard Chucks						
131983	20	40	48,5	0,5-10	27	✓
132019	30	90	56,5	0,5-13	29	✓
132046	30	90	56,5	2,5-16	29	✓
132006	40	90	56,5	0,5-13	29	✓
132047	40	90	56,5	2,5-16	29	✓
132033	50	90	56,5	0,5-13	29	✓
132039	50	90	56,5	2,5-16	29	✓

- 1) Coolant supply over Index hole, exit over nozzles.
- 2) Coolant supply over Index hole, exit over centerline and/or nozzles.

### ISO 26623-1

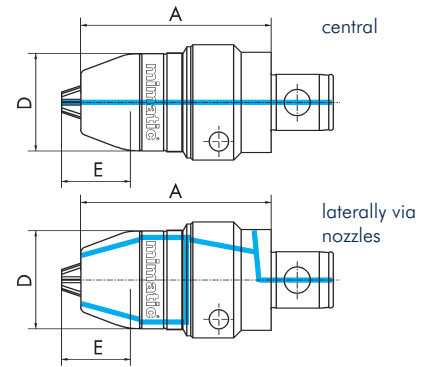
**mimatic capto**



Order No.	Size	A mm	D mm	Clamping Range	E mm	Internal coolant
High Performance Precision Chucks						
175672	63	100	49,5	0,5-13	29	✓
175725	63	100	56,5	2,5-16	29	✓

## Precision Chucks

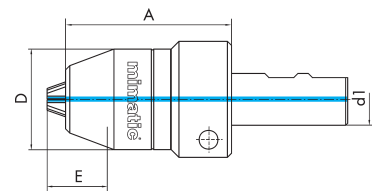
### Komet® ABS



Order No. High Performance Precision Chucks	ABS	A mm	D mm	Clamping Range	E mm	Internal coolant	
						central	lateral
132294	50	95	48,5	0,5-13	29	✓	
132484	50	95	51,0	2,5-16	29	✓	
132469	63	95	51,0	2,5-16	29	✓	
132304	50	95	56,5	0,5-13	29		✓
132468	50	95	56,5	2,5-16	29		✓

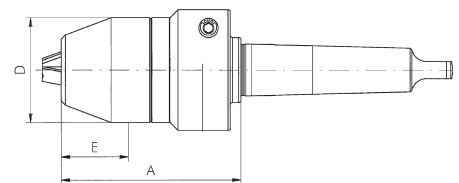
ABS Chucks will be supplied with coupling element.

### DIN 1835 B (Weldon)



Order No. Standard Chucks	d1 mm	A mm	D mm	Clamping Range	E mm	Internal coolant	
						central	lateral
132027	25	80	48,5	0,5-13	29	✓	
132060	25	80	51,0	2,5-16	29	✓	
132028	32	80	48,5	0,5-13	29	✓	
132069	32	80	51,0	2,5-16	29	✓	

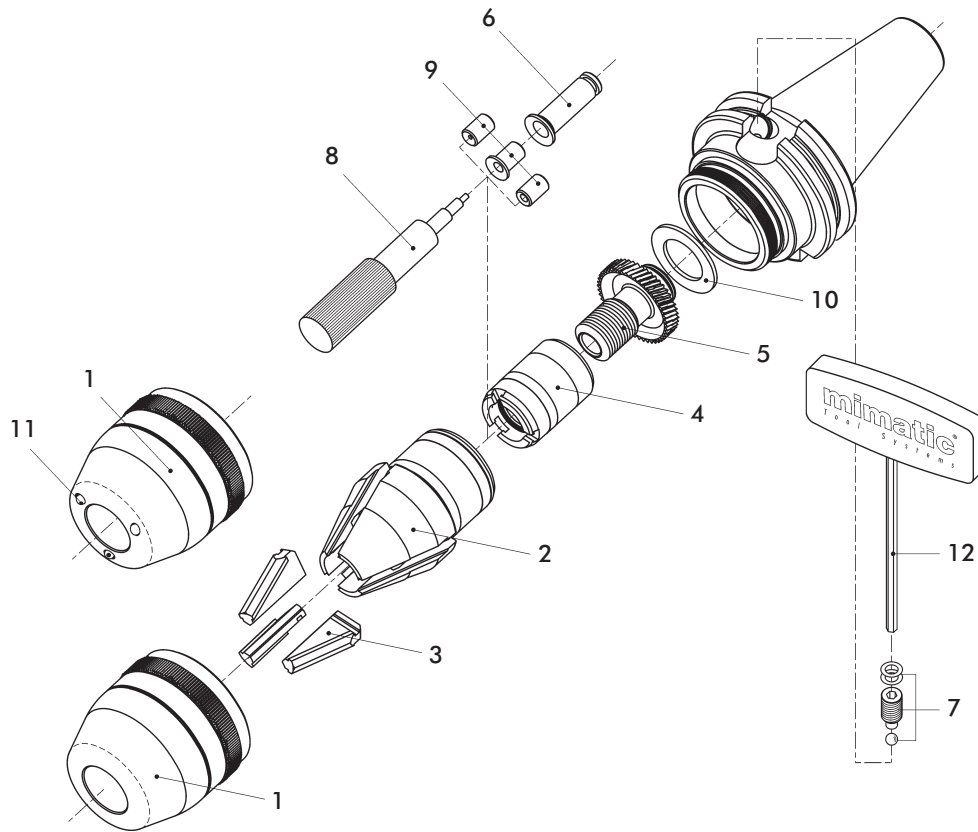
### DIN 228 Form B



Order No. Standard Chucks	MK	A mm	D mm	Clamping Range	Internal coolant	
					central	lateral
102891	3	84	48,5	0,5-13	29	
163523	3	84	51,0	2,5-16	29	
163524	4	84	48,5	0,5-13	29	
163525	4	84	51,0	2,5-16	29	

## Spare Parts for High-Performance Chucks

**Note:**  
The warranted concentricity can only be guaranteed if the chuck is overhauled here in our shop.

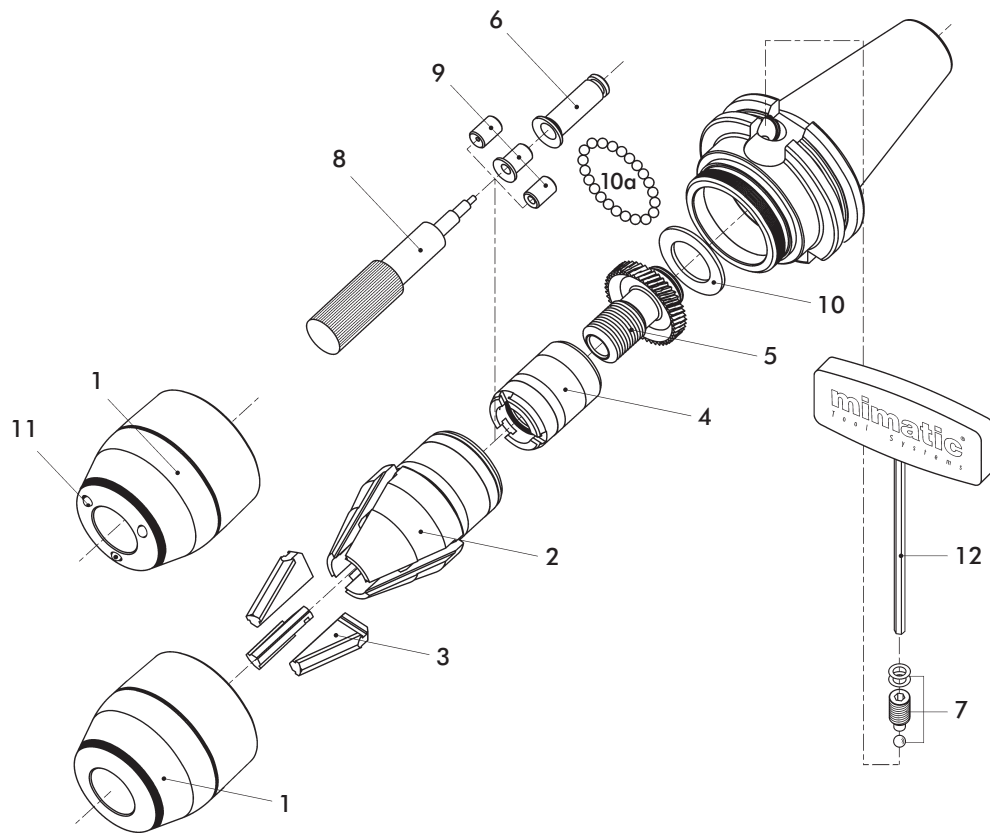


Spare Part Description	0,5 - 10 without coolant	0,5 - 13 without coolant	0,5 - 13 central coolant	0,5 - 13 coolant nozzles	2,5 - 16 without coolant	2,5 - 16 central coolant	2,5 - 16 coolant nozzles
1 Shutter Case	132790	132782	132782	132794	132808	132808	132855
2 Expanding Cone	132830	132793	132793	132793	132809	132809	132809
3 Set of Clamping Jaws	132559	132559	132559	132559	132559	132559	132559
4 Slide Sleeve	132780	132780	132780	132780	132832	132832	132832
5 Spindle	132884	132858	132858	132858	132858	132858	132858
6 Seal	132814	132814	132831	132814	132822	132868	132822
7 Worm, complete	132595	132560	132560	132560	132560	132560	132560
8 Seal Key	-	-	133276	-	-	133276	-
9 Seal Sleeves (Set) <sup>1</sup>	-	-	132541	-	-	132541	-
10 Spacer	132821	112070	112070	112070	112070	112070	112070
11 Nozzle (Piece)	-	-	-	112408	-	-	112408
12 Wrench	107445	107445	107445	107445	107445	107445	107445

1) Set contains three different sleeves for tools with Ø 2,0-4,9; Ø 5,0-9,9; Ø 10,0-16

## Spare Parts for Standard Chucks

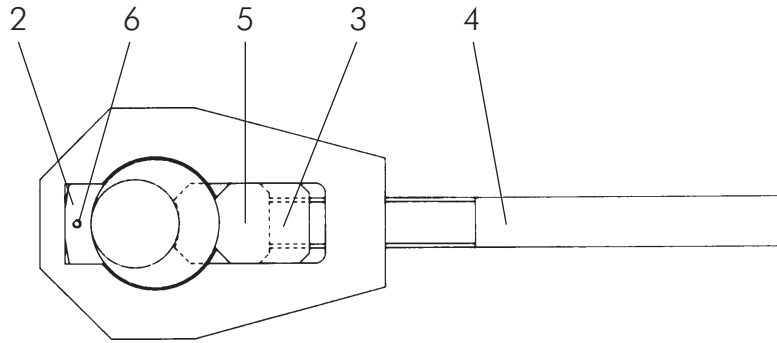
**Note:**  
The warranted concentricity can only be guaranteed if the chuck is overhauled here in our shop.



Series	10			07					
	0,5 - 10 without coolant	0,5 - 10 coolant nozzles	0,5 - 13 without coolant	0,5 - 13 central coolant	0,5 - 13 central coo- lant/nozzles	2,5 - 16 without coolant	2,5 - 16 central coolant	2,5 - 16 central coo- lant/nozzles	
1 Shutter Case	133252	132050	132029	132029	132008	132049	132049	132077	
2 Expanding Cone	133282	133229	132793	132793	132793	132809	132809	132809	
3 Set of Clamping Jaws	133251	133259	132559	132559	132559	132559	132559	132559	
4 Slide Sleeve, Slide Key	133578	133250	132780	132780	132780	132832	132832	132832	
5 Spindle	133506	—	132858	132858	132858	132858	132858	132858	
6 Seal	—	—	132814	132831	132831	132822	132868	132831	
7 Worm, complete	133313	—	132560	132560	132560	132560	132560	132560	
8 Seal Key	—	—	—	133276	133276	—	133276	133276	
9 Seal Sleeves (Set) <sup>1</sup>	—	—	—	132541	132541	—	132541	132541	
10 Spacer	—	—	112070	112070	112070	112070	112070	112070	
10a Ball Bearing Set	133288	133268	—	—	—	—	—	—	
11 Nozzle (Piece)	—	112408	—	—	112408	—	—	112408	
12 Wrench	107445	107574	107445	107445	107445	107445	107445	107445	

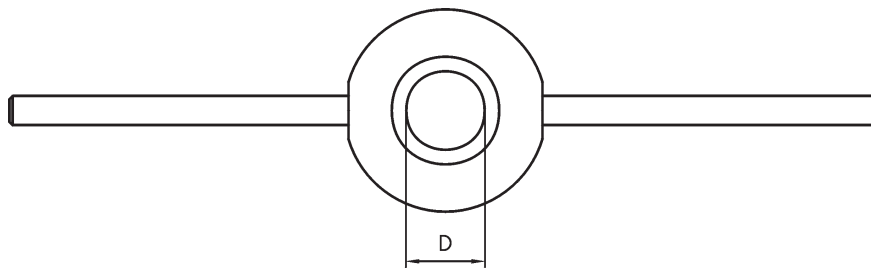
1) Set contains three different sleeves for tools with Ø 2,0-4,9; Ø 5,0-9,9; Ø 10,0-16

## Accessories



### Universal Assembly Tool for Series 10

Order No.	Number	Description
152947		Locking key, complete excl.
154178	2	Jaws, steady
154249	3	Jaws, mobile
154257	4	Shaft
114333	5	Straight pin
114570	6	Flat head screw

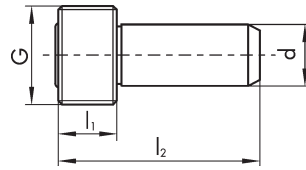


### Special Assembly Tool for Series 07 and 09

Order No.	for clamping range	D mm
132661	0,5-10 mm without coolant sleeve	43,0
132660	0,5-10 mm with coolant sleeve and 1-13 mm without coolant sleeve	48,5
132640	2,5-16 mm without coolant sleeve	51,0
132599	1-13 mm and 2,5-16 mm with coolant sleeve	56,5



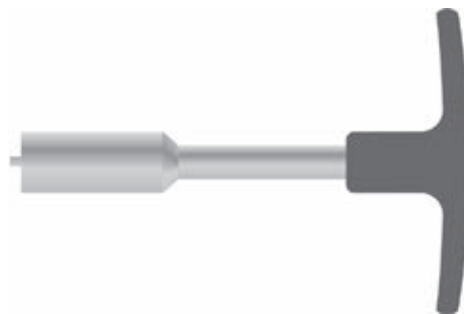
## Accessories



### Coolant bridging tube with cap-nut and two O-rings.

Order No.	HSK size	d mm	G mm	l <sub>1</sub> mm	l <sub>2</sub> mm
112095	50	10	16 x 1	9,5	32,7
112028	63	12	18 x 1	11,5	36,2
112022	100	16	24 x 1,5	15,0	43,6

### Wrench for the Coolant bridging tube



Order No.	HSK size	d mm	L mm
111643	50	14,5	117
111689	63	16,5	122
111597	100	22,0	141

### Assembly of coolant bridging tube



# Terms of Sale and Delivery

## § 1 Scope

1. Our terms of sale and delivery apply exclusively. We do not recognize customer conditions opposing or deviating from our terms of sale and delivery unless expressly validated in writing. Our terms of sale and delivery apply, even if the delivery goes ahead with knowledge of opposing or deviating terms of sale and delivery made by the customer. Our terms of sale and delivery also apply to all present and future business transactions with the customer.
2. All agreements made between us and the customer for the implementation of the present contract are made in writing in this contract.
3. Our terms of sale and delivery only apply to contractors, as per Para. 310 of the Federal Law (BGB – Bundesgesetzbuch).

## § 2 Offer and Contract Conclusion

1. Our offers are non-binding and noncommittal in every aspect if not agreed otherwise.
2. An order is only considered accepted once it has been confirmed by us in writing. The same applies to additions, changes or special agreements.
3. Drawings, illustrations, weight and measurement data or other performance data are only binding if these have been expressly agreed upon in writing. In particular, illustrations in catalogues and flyers might not always correspond to the latest version due to further developments and improvements.
4. The contract conclusion presumes proper and timely supply from our suppliers. This applies only if failure to deliver is out of our control, particularly in the case of a congruent transaction with our supplier. The customer will be informed immediately in the case of a service being unavailable. A refund will be issued immediately.

## § 3 Special Productions

1. Special productions require a written purchase order with detailed material and measurement information from the customer.
2. If we supply special productions according to the furnished designs, models, samples or other documents or using tools or components of the customer, he will ensure that patent rights of a third party are not infringed upon. The documents supplied by the customer are taken as standard; the customer is liable for accuracy of the content, technical feasibility and comprehensiveness. The customer is responsible for any additional costs resulting from changes to the order after our confirmation has been sent, or from additional services required due to unsuitable or incomplete data. Should a third party contest our production and for copyright reasons, we will, without obligation to examine the circumstantial and legal situation, be entitled to cease any further activity and demand compensation from the customer. The customer is to immediately exempt us from all respective third party liabilities.
3. For all special productions, we reserve a  $\pm$  margin of up to 10 %, but a minimum of 2 pieces. Special productions can only be exchanged if errors in workmanship are detected.

## § 4 Prices

1. If our order confirmation does not state otherwise, our prices quoted in EUROs, are „from factory“ including loading in the plant. They do not include packaging, freight, insurance, duty or other expenses. These are invoiced separately.
2. Tax as required by law (value added tax) is not included in our prices. The lawful amount as of the day of invoicing will be listed separately on the invoice.
3. We reserve the right to change our prices accordingly if changes of costs occur after conclusion of the contract, in particular changes in wages or material prices. These will be provided to the customer by request.
4. If certain prices are not agreed upon, then the prices valid at the time of the delivery apply.

## § 5 Payment Terms

1. If not stated otherwise, payment is to be made in cash, without any deduction, to us namely for
  - a) Tools, within 14 days after the invoice date minus 2 % discount or within 30 days after invoice date net.
  - b) Amounts of under Euro 30,00 immediately upon receipt of the invoice net without any deduction.
2. Bills and cheques are only accepted as settlement of a specific agreement. Their acceptance is not to be regarded as deferment of payment of the debt. They must be valid for no less than ten days and no more than two months. Credit notes for bills and cheques are subject to receipt and apply on the day when the funds become available. There is no liability on our part as to collection, protesting, notification or returning during non-redemption. The customer bears the cost of the bouncing fee.
3. If a payment is not made according to the date agreed on the order confirmation, we are entitled without further reminder to charge an interest rate of 10 % p. a. over and above the respective base interest rate (Para. 247 BGB). If we are able to prove a higher interest rate, we are entitled to apply this. The customer has the right to prove that the delay in payment did not result in significant losses. This does not affect the right to make large claims for damages.

## Terms of Sale and Delivery

4. If the customer delays his payment obligation based on a refusal of a bill, a substantial reduction in his financial assets or we receive unfavourable information on the customer (for example delay of payment, cheque and letter of credit refusal), we are then entitled to request further collateral for all current debts or to withdraw from the contract. In these cases we are further entitled to demand cash payment in advance for any outstanding deliveries, and withdraw and demand payment for all further circulating invoices, cheques and letters of credit.
5. The customer is only entitled to compensation if his counterclaims are recognized by us, lawfully determined or undisputed. He is also able to take exercise the right of retention as long as his counterclaim is based on the same contract.

### § 6 Delivery Time, Delivery Delay

1. The indicated delivery time begins with the dispatch of the order confirmation, but not before all technical questions have been clarified and the customer has provided all documents, permits, releases, and the agreed deposit has been paid.
2. The delivery time is agreed between the Contracting Parties. It assumes that all commercial and technical questions between the Contracting Parties have been clarified and the customer has fulfilled all his obligations such as providing the necessary official certificates or permits or a deposit. If this is not the case, then the delivery time will be extended accordingly. This does not apply if the delay is caused by the supplier.
3. The delivery time is dictated by a correct and timely delivery from the supplier. Foreseeable delays will be communicated by the supplier as soon as possible.
4. The delivery time is deemed as kept if the product has left the plant or if it is ready for dispatch by the deadline. As far as an acceptance has to take place, with the exception of a justified refusal of acceptance, the date of acceptance or, if necessary, the notice of acceptance applies.
5. If the dispatch and/or the acceptance of the delivery item are delayed through circumstances arising from the customer, then any costs incurred will be charged, beginning one month after the dispatch or acceptance notice. If the dispatch is delayed on the customer's request, then the supplier is entitled, after setting a reasonable deadline, to use the items as he sees fit and deliver the merchandise within a reasonable newly set time frame.
6. If the delivery time is not kept due to a "Force Majeure" (Act of God), labour disputes or other circumstances beyond the control of the supplier, then the delivery time will be delayed accordingly. The supplier will communicate to the customer the beginning and the end of such an event as soon as possible.
7. The customer can withdraw from the contract without notice, if the supplier is unable complete the full service. The customer can withdraw from the contract if a part of the order cannot be delivered and he has a justified cause for refusing a partial delivery. If this is not the case, then the customer is to pay the contract price due for the partial delivery. The same applies in the case of the supplier's insolvency. In all other respects Para. 10.2. applies. If the impossibility or insolvency occurs during the course of acceptance or if the customer is solely or predominantly responsible for these events, payment remains obligatory.
8. If the supplier is delayed, resulting in costs for the customer, then he is entitled to demand compensation. This amounts to 0.5% for each full week of the delay, but a maximum of 5% of the value of the items which can not be used in time as set out in the contract. If the customer sets an appropriate delivery period after the due date - taking into account any legal exceptions -, and the deadline is not kept, the customer is lawfully entitled to cancel the order. Further requirements of these conditions deriving from failure to deliver are set out in Para. 10,2.

### § 7 Transfer of Risk

1. The risk is transferred to the customer once the delivery object has left the factory, including any partial deliveries or where the supplier has offered additional services such as delivery costs or delivery and installation. Where an acceptance is to take place, it is authoritative for the transfer of risk. It must be completed on the acceptance date, or immediately after the supplier's acceptance notice. The customer cannot reject the acceptance in case of an insignificant defect.
2. If the delivery or acceptance is delayed due to circumstances not attributable to the supplier, the risk goes to the customer, from the date of delivery or acceptance. The supplier is obliged to arrange, at the expense of the customer, any insurance which the latter demands.
3. Partial shipments are allowed, as long as they are realistic for the customer.

### § 8 Reservation of Proprietary Rights

1. The supplier holds the property rights on the delivery object until all the debts of the customer from the deal are settled, including any future debts and any contracts signed in conjunction or at a later date. This also applies if one or all of the supplier's debts are accommodated in a continuous bill and if the balance is drawn and recognised. In case of customer actions in breach of the contract, particularly non-payment, the supplier is entitled to withdraw the delivery object following a reminder and the customer is obliged to return it. Because of the reservation of proprietary rights, the supplier can reclaim the delivery object only if he or she has rescinded the contract. In case of confiscation or any other intervention by third parties, the customer has to inform the supplier immediately.
2. The customer is entitled to alienate the delivery object in the proper way of conducting business. He or she, however, surrenders to the supplier all debts arising from the further alienation (resale) to the acceptor or to third parties. The customer is also empowered to collect these debts after the concession. The authorisation for the supplier to collect the debts by him or herself remains unaffected by this. However, the supplier agrees not to collect these debts as long as the customer complies with all of his or her payment duties or if the authorisation to collect debts is not suspended or if no request to file charges of insolvency has been made. The supplier may otherwise request the customer to declare to him or her the relinquished debts and their debtors, to make all declarations necessary for the collection, to hand in all the respective documentation and to inform the debtors of the transfers, as long as it hasn't already been made by the supplier. If the delivery object is resold along with other goods which do not belong to the supplier, the customer's debt toward the acceptor, amounting to the delivery price agreed upon between the supplier and the customer, is considered cancelled.

## Terms of Sale and Delivery

3. The supplier can neither confiscate the delivery object nor repossess it for collateral security.
4. The supplier is entitled to insure the delivery object at the expense of the customer against theft, damage, fire, water and any other damages that may occur, as long as it has been proven that the customer has not taken out similar insurance.
5. If, in connection with the payment of the purchase price by the customer, an alternate liability of the supplier is constituted, then the reservation of proprietary rights, including any agreed special forms, or any other agreed payment securities are not cancelled until the bill is paid off by the customer as drawee.
6. The request for the opening of an insolvency process entitles the supplier to rescind the contract and to demand the immediate returning of the delivery object.

### § 9 Claims for Defects

In case of material or legal defects in the delivery, the supplier offers guarantee, disqualifying all other claims, subjected to § 10.2, as follows:

#### Material Defects

1. All parts found to be flawed as a result of circumstances prior to the transfer of risks, are to be fixed or replaced without charge by parts free of defects as chosen by the supplier. The ascertainment of such defects is to be informed immediately in writing to the supplier. Replaced parts become property of the supplier.
2. To carry out all the improvements and replacement deliveries necessary for the supplier, the customer has to provide the necessary time and opportunity as per agreement with the supplier; otherwise the supplier is free from the resulting responsibilities for the consequences. Only in urgent cases of endangering operating safety or for the protection against disproportionately large damages, where the supplier is to be notified immediately, the customer has the right to repair the defect by him or herself or to have it repaired by third parties and may demand compensation for the resulting expenses.
3. Of the costs arising from the repairs and replacement deliveries, the supplier bears the immediate costs of the replacement part including the cost of delivery - as long as the complaint is proven to be justifiable. The place for repair of the material defect on the delivery object is the factory of the manufacturer.
4. The supplier has a right, in the framework of the legal regulations, to withdraw from the contract, if the supplier – under consideration of the legal exceptions – allows the deadlines, imposed on him or her for repairs or replacement delivery caused by material defect, to expire fruitlessly. If there is only an insignificant defect, the customer has merely the right to a reduction in the contractual price. The right to a reduction in the contractual price is otherwise excluded. Other claims are defined according to § 10.2 of these terms and conditions.
5. There is no guarantee in the following cases: Inappropriate or inadequate use, incorrect assembly or activation by the customer or by a third party, natural wear, incorrect or negligent handling, improper maintenance, inappropriate operative materials, incorrect construction works, inadequate construction foundation, chemical, electrochemical or electric interferences – as long as the supplier is not responsible for these. The supplier is only responsible for defects in the material delivered by the customer if he or she should have recognised the defects as expected from a professional. For preparations according to the drawing of the customer, the supplier is responsible only for the execution according to the drawings.
6. If the customer or a third party makes alterations, the supplier is not responsible for their consequences. The same applies to alterations of the delivery object made without the consent of the supplier.

#### Legal Problems

7. If the utilisation of the delivery object leads to the infringement of commercial protection rights or patent rights in this country, the supplier will either provide the customer, at the expense of the former, the basic rights to a continued utilisation, or he or she will modify the delivery object in a way which is reasonable to the customer, so that the infringement of the protection right no longer exists. If this is not possible under the economically appropriate conditions or in the appropriate deadline, the customer is entitled to withdraw from the contract. Among the requisites mentioned is also supplier's right to withdraw from the contract. Furthermore, the supplier will set the customer free from indisputable or legally enforced claims made by the respective holders of the protection rights.
8. The obligations set out in § 10.2 for the supplier, subject to § 10.2, are conclusive for the case of infringement of protection or patent rights. They only apply if
  - The customer instructs the supplier about infringements of effective protection or patent rights .
  - The customer either supports the supplier in suitable measure in the protection of the effective claims or if he enables the supplier to carry out the modification measures according to § 10.2.
  - All the protection measures including those of extrajudicial regulations are reserved to the supplier.
  - The legal problem is not based upon a directive from the customer.
  - The rights infringement has not been caused by the customer's alteration or improper utilisation of the delivery object.
9. The customer takes on all responsibilities for the documentation to be presented by him or her, such as drawings, instructions, samples etc. The customer has to ensure that the instruction drawings presented by him or her do not infringe the copyright laws of third parties. The supplier is not obliged to prove to the customer whether the protection rights of third parties are infringed by the submission of offers due to a presentation made by him or her. If a liability of the supplier arises from facts based on claims, the customer must indemnify the supplier.

# Terms of Sale and Delivery

## § 10 Liability

1. If the delivery object cannot be used by the customer by fault of the supplier as a result of negligent or incorrect compliance with suggestions and advice given before or after the closing of the contract or the infringement of other minor contractual obligations – especially operation instructions and maintenance of the delivery object, then the regulations of § 10.2 apply, disqualifying further claims by the customer.
2. For damages not arising in the delivery object itself, the supplier is held accountable – whatever the legal motives may be - only
  - a) in case of malice,
  - b) in case of gross negligence of the proprietor / the organs or leading employee,
  - c) in case of culpable imperilment of life, body or health,
  - d) in case of defects which he or she fraudulently occulted or whose absence he or she guaranteed.
  - e) in case of defects in the delivery object, as long as according to product liability laws for personal or material damages, responsibility falls upon privately used objects.

In case of culpable infringement of essential contractual obligations, the supplier is held accountable also for gross negligence of non-leading employees in for light negligence, in the latter case limited to sensibly predictable damage typical in the contract. Further claims are excluded.

## § 11 Expiration

All claims by the customer – whatever the legal reasons may be – expire after 12 months. For compensation claims according to § 10.2, the legal deadlines apply. They also apply to defects of a construction work or to delivery objects causing faults in construction work after normal use.

## § 12 Returns and Refunds

For returns and refunds, an administration fee of up to 20% of the value of the item applies, unless the reason for return or refund is a circumstance for which we are accountable.

## § 13 Practicable Right, Competent Court, Partial Nullity

1. For every legal relationship between the supplier and the customer, only the laws of the Federal Republic of Germany, authoritative for the legal relations between national parties, apply.
2. The Competent Court is the court corresponding to the domicile of the supplier. The supplier is, however, entitled to file complaints in the main domicile of the customer.
3. If an article of these conditions is to become void or ineffective wholly or partly, the remaining sections remain unaffected. The ineffective article is replaced by the corresponding legal regulation.
4. These sales and delivery conditions are accessible from our homepage [www.mimatic-zettl.de](http://www.mimatic-zettl.de) and can also be saved and reproduced.

## § 14 Special Conditions for Processing Contracts

Special conditions for processing contracts (completion of proceedings, reconditioning, reform or reassembly of tools). Complementing or deviating from the delivery conditions, the following applies to processing contracts:

1. For the behaviour of the material sent to the processor, the processor is not held accountable. His or her claims of reimbursement stands.
2. If the material is unusable for the processing at fault of the processor, his or her right to reimbursement ceases to exist. The damage reparation claim by the customer follows § 10.2 of the Delivery Conditions.

## § 15 Supply Chain Security

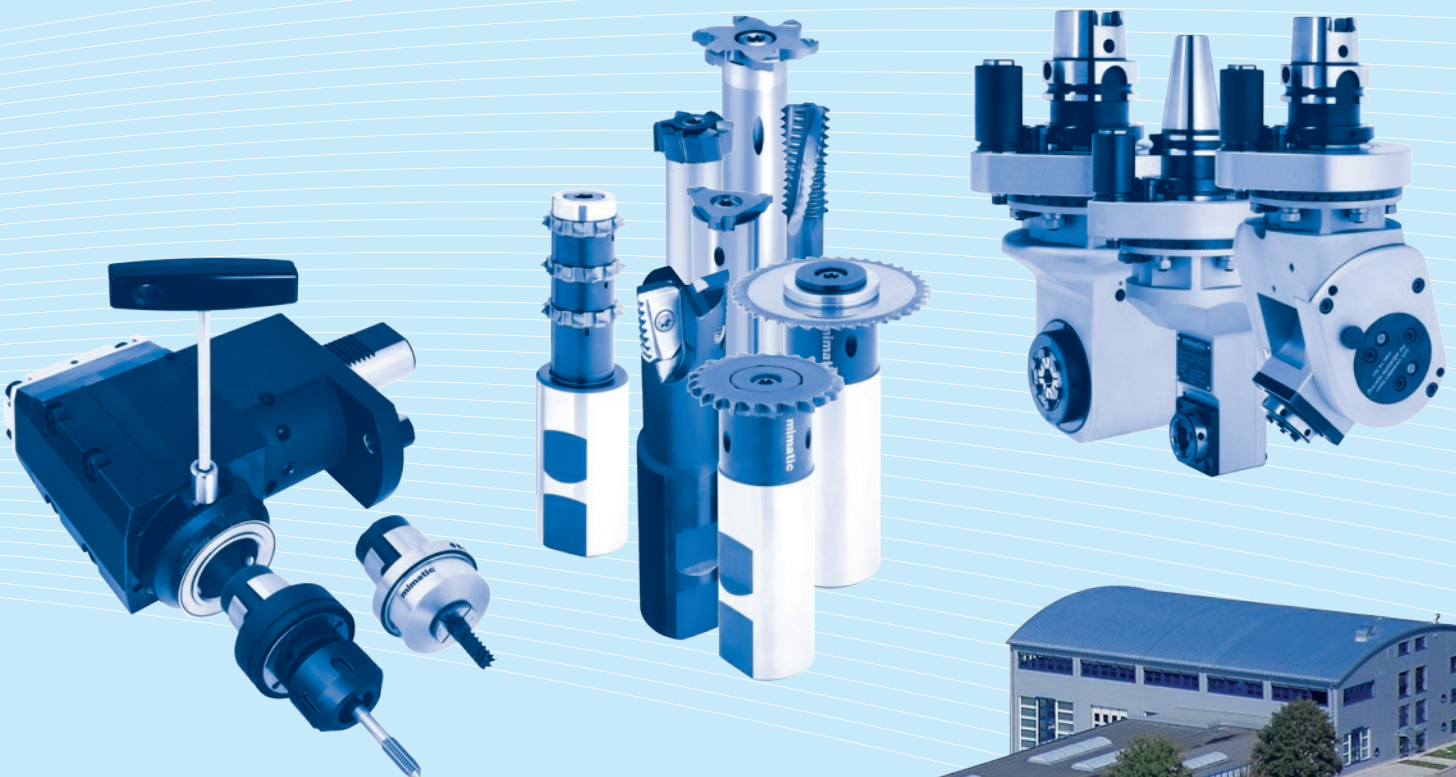
As an authorised economic operator (AEO-F), mimatic GmbH is committed to ensuring the security of the entire international supply chain. This applies to compliance with the valid customs regulations and safe movement of goods. On conclusion of the contract, this obligation is transferred also to the buyer.

The buyer declares that

- all goods purchased, stored, transported, delivered to the buyer or transferred to the buyer by mimatic GmbH,
  - are stored and loaded in secure operating and transshipment locations,
  - during storage, transport and transfer such goods are protected from unauthorised access.
- the personnel deployed for the storage, transport and transfer of such goods is reliable.
- business partners who act on behalf of the buyer have been instructed that they must also take measures to secure the supply chain.

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