

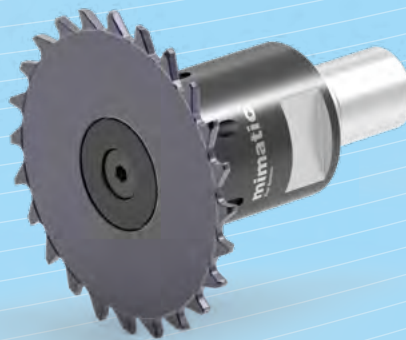
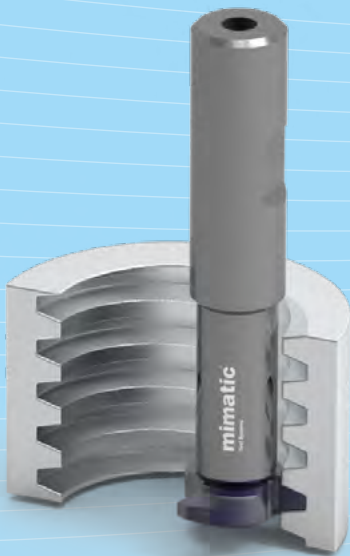
# mimatic®

**Tool Systems**

*Your Partner For Clever Tooling*

## Cutting Tools

- Thread milling
- Groove milling
- Gear milling
- Contour and radius milling
- Dovetail milling
- Sawing, cutting, slitting
- etc.



Manufacturer of Precision Tools Since 1974

## Thread Milling



# Systems for Circular Thread Milling

## PolyMILL

**Our bestseller system** allows **threading** and/or **circlip grooving** in high precision.

The polygonal connection of insert and milling body improves the efficiency and precision of the process significantly:

- **Longer tool life**
- **Higher machining volume**
- **Higher feed rates**
- **Shorter processing times**
- **High stability**
- **High security at interrupted cutting**



## TriMILL

**Affordable and flexible system** for short processing times and long tool lives.

- **Deep, true to gauge threads**
- **Accurate free-form contours**
- **Accurate grooving**

Bottom threads can be cut almost to the bottom without undercuts.

By using the same pitches, the storage and acquisition costs decrease also.



## TrioCUT

**Smooth cutting** and **low cutting pressure** results in high surface quality and long tool lives. 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.

The optimum application area are fine threads and/or very short thread lengths.

- **Thread milling with undercut**
- **Thread milling**
- **Drill thread milling**



## SolidCUT

Extensive range of solid carbide thread milling cutters.

- **Spiral-grooved grooves**
- **Soft cut**
- **Excellent surface qualities**
- **Also for thin-walled workpieces**
- **A tool for right- and left-hand threads**
- **Unbeatable in price / performance**



**14,5 15 21 26**

Multi tooth thread milling cutters, ideal for short thread, small gradient lengths and very rigid clamping of workpiece and cutter.



## mimaticSTC

**Sectional thread milling for high-quality large threads from M24.**

**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.



## Symbols

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

## Short Descriptions

Alpha ( $\alpha$ )	Point angle of milling insert	F	Width of trailing chamfer
A	Groove width	H <sub>P</sub>	Insert height
A <sub>1</sub>	Basic width in the Groove	H <sub>S</sub>	Slider height (Axial grooving tool)
B <sub>f6</sub>	Insert holder width of axial grooving tool	L	Length of milling tool
B <sub>H7</sub>	Groove width of axial grooving tool	L <sub>1</sub>	Clamping length of milling tool
B <sub>w</sub>	Tool width of axial grooving tool	L <sub>2</sub>	Length of step milling head
C	Chamfer width	L <sub>G</sub>	Usable thread length at the multi-tooth thread milling
D	Cutting diameter	L <sub>HA</sub>	Holder length
d <sub>1</sub>	Milling body diameter (front)	L <sub>P1</sub>	Insert height of milling body – edge
d <sub>2</sub>	Large diameter of milling body	L <sub>P2</sub>	Insert height of edge – interfering contour
d <sub>g6</sub>	Fitting face diameter of threaded milling tool	L <sub>PF</sub>	Length of fitting face
D <sub>t6</sub>	Shaft diameter of milling body (Arbor)	L <sub>S</sub>	Shaft length – clamping length (Depth)
D <sub>P</sub>	Flight circle of insert	M	Thread size
D <sub>R</sub>	Nominal diameter of concave radius insert	P	Pitch
E	Width blank insert	R	Radius (general/common)

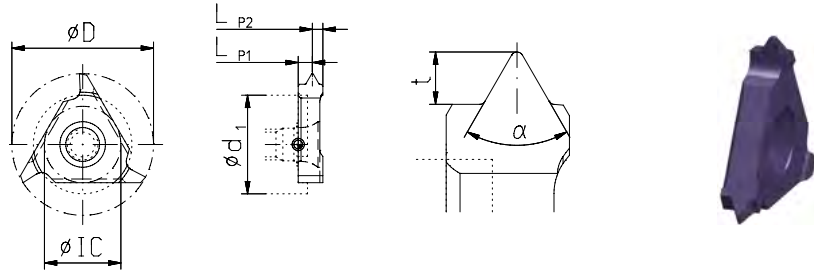
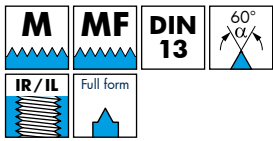
## Formula for Tool Lengths

$$L_{WKZ} = L_{GK} + L_1 + L_{P1} (+L_{P2})$$

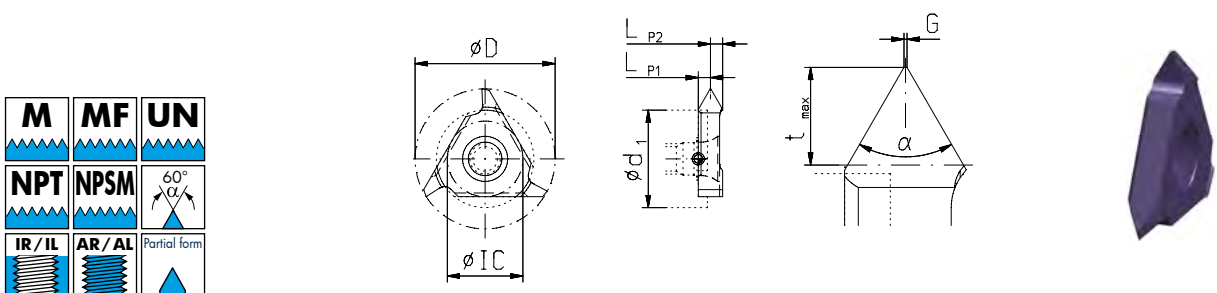
TriMILL

Thread Milling

- Insert holder see page 32
- Cutting data see page 166



Type	Pitch mm	D mm	IC mm	LP1 mm	LP2 mm	t mm	Thread	Order No. TINAMATIC
03	1,0	10,6	5,5	1,64	0,7	0,578	$\geq M12 \times 1$	141613
	1,5	10,6	5,5	1,39	0,95	0,864	$\geq M14 \times 1,5$	141674
	2,0	10,6	5,5	2,0	1,0	1,159	$\geq M16 \times 2$	141647
02	1,0	17,5	9,2	2,8	0,7	0,578	$\geq M20 \times 1$	141443
	1,5	17,5	9,2	2,55	0,95	0,864	$\geq M22 \times 1,5$	141482
	2,0	17,5	9,2	2,3	1,2	1,159	$\geq M24 \times 2$	141484
	2,5	16,0	9,2	1,75	1,75	1,444	only M20, M22	141516
	2,5	17,5	9,2	2,05	1,45	1,444	$\geq M24 \times 2,5$	141514
01	3,0	17,5	9,2	2,1	1,4	1,728	$\geq M24$	141494
	1,0	23,0	12,4	3,3	0,7	0,578	$\geq M25 \times 1$	141317
	1,5	23,0	12,4	3,05	0,95	0,864	$\geq M27 \times 1,5$	141291
	2,0	23,0	12,4	2,8	1,2	1,159	$\geq M30 \times 2$	141312
	2,5	23,0	12,4	2,55	1,45	1,444	$\geq M33 \times 2,5$	141287
	3,0	23,0	12,4	2,3	1,7	1,728	$\geq M36 \times 3$	141339
	3,5	23,0	12,4	2,3	1,7	2,023	$\geq M36 \times 3,5$	141300
	4,0	23,0	12,4	2,3	1,7	2,308	$\geq M36$	141347
	4,5	23,0	12,4	4,0	2,5	2,602	$\geq M42$	141365
	5,0	23,0	12,4	4,0	2,5	2,887	$\geq M48$	141342
5,5*	23,0	12,4	3,6	2,9	3,182	$\geq M56$	141350	
6,0*	23,0	12,4	3,2	3,3	3,467	$\geq M64$	141369	



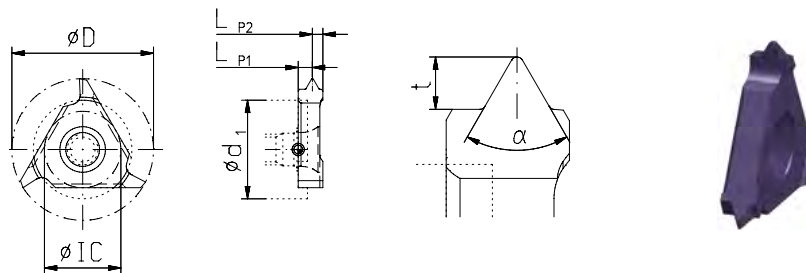
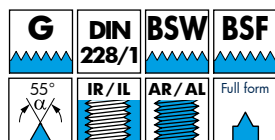
Type	Pitch mm	Thread Nominal $\phi$	D mm	IC mm	LP1 mm	LP2 mm	G mm	t <sub>max.</sub> mm	Order No. TINAMATIC
03	1-2,0	$\geq 14$	10,6	5,5	1,5	1,5	0,1	1,6	141677
02	1-3,5	$\geq 22$	17,5	9,2	1,59	1,91	0,1	2,15	141528
01	1-4,0	$\geq 27$	23,0	12,4	1,85	2,15	0,1	2,45	141366

\* Not suited for cutters 123415, 170320 and 123416

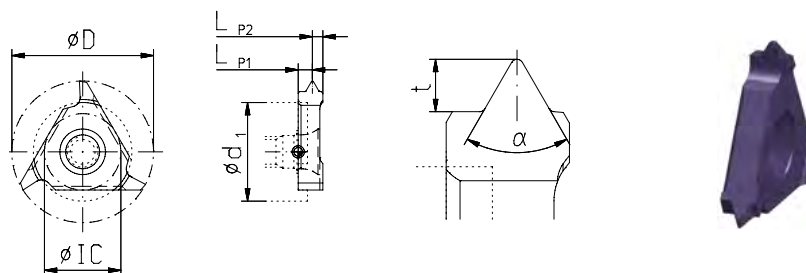
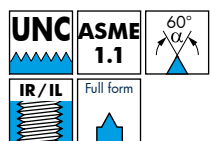
TriMILL

Thread Milling

- Insert holder see page 32
- Cutting data see page 166



Type	Pitch mm	Pitch/"	D mm	IC mm	LP1 mm	LP2 mm	t mm	Thread	TINAMATIC
03	1,337*	19	10,6	5,5	1,25	1,09	0,871	G 1/4"	141652
	1,337	19	10,6	5,5	1,25	1,09	0,871	G 3/8"	141682
02	1,814*	14	16,0	9,2	1,75	1,75	1,162	G 1/2"	141508
	1,814	14	17,5	9,2	2,2	1,3	1,162	G 3/4"	141488
	2,309	11	17,5	9,2	1,9	1,6	1,494	≥ G 1"	141522
	3,175	8	17,5	9,2	1,75	1,75	1,830	BSW 1"	160665
01	3,175	8	17,5	9,2	1,75	1,75	1,830	BSW 1 1/8" - 1 1/8"	161718
	2,309	11	23,0	12,4	2,4	1,6	1,494	≥ G 1"	141381

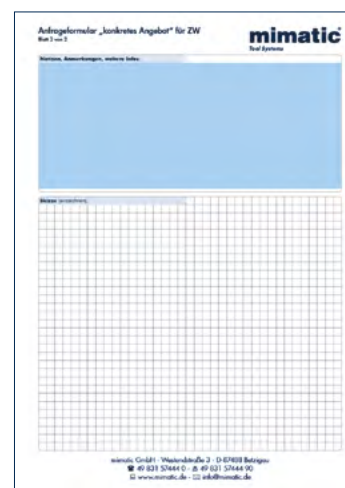


Type	Pitch mm	Pitch/"	D mm	IC mm	LP1 mm	LP2 mm	t mm	Thread	TINAMATIC
03	1,954**	13	10,0	5,5	1,17	1,17	1,099	UNC 1/2" - 13	149460
	2,309**	11	10,6	5,5	1,17	1,17	1,349	UNC 5/8" - 11	149204
	2,540**	10	10,6	5,5	1,17	1,17	1,470	UNC 3/4" - 10	149732

Request Form for Tread Milling

Please download our fillable PDF form for a detailed thread milling request and send us back via email: [info@mimatic.de](mailto:info@mimatic.de)

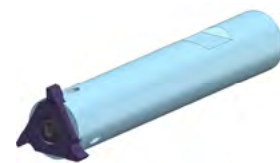
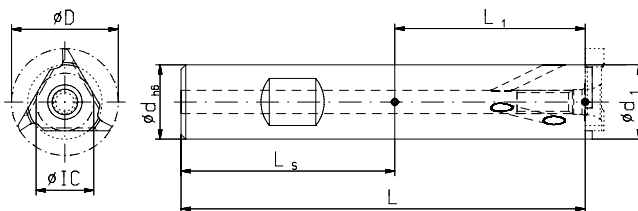
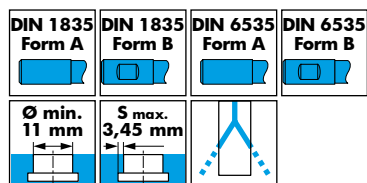
Request form:  
[www.mimatic.de/Gew\\_EN.pdf](http://www.mimatic.de/Gew_EN.pdf)



\* Only for external threads  
\*\* Not suited for cutters 123489

# Circular Milling Tools

- Inserts see page 30-31
- Cutting data see page 166

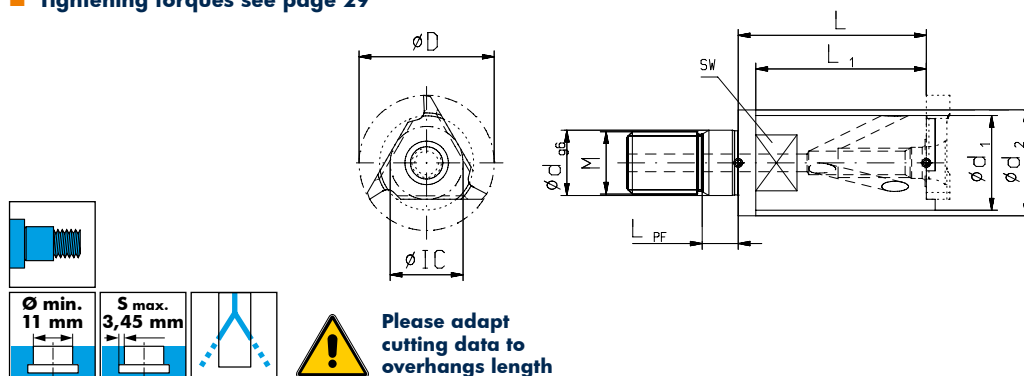


Type	Order No.	Form	D mm	IC mm	d <sub>h6</sub> mm	d <sub>1</sub> mm	S <sub>max.</sub> mm	L mm	L <sub>1</sub> mm	Shaft	Spare part No.	
											Screw-driver *	Screw *
03	123477 **	B	10,6	5,5	10	7,4	1,6	57,2	17,2	Steel	T6 IP 111705	107530
	123478 **	B	10,6	5,5	12	7,4	1,6	64,66	17,2	Steel		
	123479 **	A	10,6	5,5	12	7,4	1,6	64,66	17,2	Steel		
	123480	B	10,6	5,5	10	7,4	1,6	74,2	34,2	Carbide		
	123489	A	10,6	5,5	8	8	1,25	77,66	41,0	Carbide		
02	123445	B	17,5	9,2	12	12	2,6	74,05	28,7	Steel	T15 IP 111671	107547
	123446	B	17,5	9,2	16	12	2,6	78,6	28,7	Steel		
	123447	A	17,5	9,2	16	12	2,6	78,6	28,7	Steel		
	123448	B	17,5	9,2	12	12	2,6	108,7	63,7	Carbide		
	123470	A	17,5	9,2	12	12	2,6	79,3	34,3	Carbide		
	123471	A	17,5	9,2	12	12	2,6	96,5	51,5	Carbide		
	123474	A	17,5	9,2	12	12	2,6	121,5	76,5	Carbide		
01	123412	B	23,0	12,4	16	16	3,45	87,0	38,5	Steel	T20 IP 111594	107551
	123414	B	23,0	12,4	16	16	3,45	116,0	67,5	Steel		
	123415 ***	A	23,0	12,4	20	17	3,0	93,0	41,0	Steel		
	170320	A	23,0	12,4	16	17	3,0	137,0	88,5	Carbide		
	123416	B	23,0	12,4	16	17	3,0	137,0	88,5	Carbide		
	123440	A	23,0	12,4	16	16	3,45	111,0	63,0	Carbide		
	123441	A	23,0	12,4	16	16	3,45	148,5	100,0	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

- Tightening torques see page 29



Type	Order No.	D mm	IC mm	d <sub>g6</sub> mm	d <sub>1</sub> mm	d <sub>2</sub> mm	S <sub>max.</sub> mm	L mm	L <sub>1</sub> mm	M	Screw-driver *	Screw *
03	123481	10,6	5,5	6,5	7,4	10,0	1,60	22,66	13,66		111705	107530
02	123450	17,5	9,2	8,5	12,2	15,4	2,60	27,5	18,5		111671	107547
01	123419	23,0	12,4	10,5	16,1	18,0	3,45	32,0	29,0		111594	107551

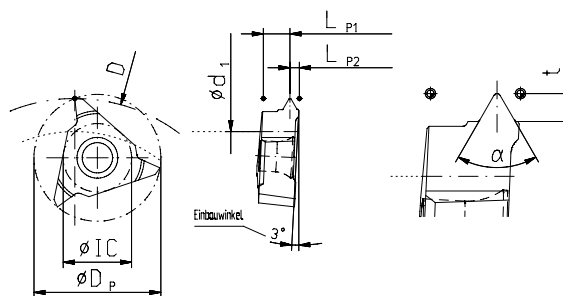
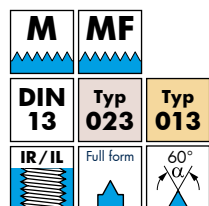
Screw torques max.  
 107530 T6 IP 0,9 Nm  
 107547 T15 IP 3,8 Nm  
 107551 T20 IP 5,5 Nm

\* Screwdriver and clamping screw included in delivery

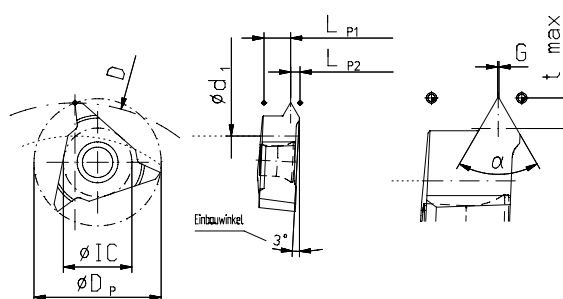
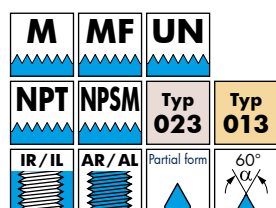
TriMILL

Thread Milling

- Insert holder see page 34-36
- Cutting data see page 166



Type	Pitch mm	Thread Nominal Ø	DP mm	IC mm	LP1 mm	LP2 mm	t mm	Order No. TINAMATIC
023	1,5	≥ M36 x 1,5	17,5	9,2	4,08	0,95	0,864	142020
	2,0	≥ M39 x 2	17,5	9,2	3,83	1,2	1,159	142003
	2,5	≥ M42 x 2,5	17,5	9,2	3,52	1,51	1,444	141989
	3,0	≥ M45 x 3	17,5	9,2	3,33	1,7	1,728	141988
	4,0	≥ M52 x 4	17,5	9,2	2,63	2,4	2,308	142028
	4,5*	≥ M56 x 4,5	17,5	9,2	2,53	2,5	2,602	141998
	5,0*	≥ M60 x 5	17,5	9,2	2,13	2,9	2,887	142009
	5,5*	≥ M60 x 5,5	17,5	9,2	2,7	3,33	3,128	142032
	6,0*	≥ M64	17,5	9,2	2,7	3,33	3,467	142000
013	1,5	≥ M68 x 1,5	23,0	12,4	5,58	0,95	0,864	141920
	2,0	≥ M72 x 2	23,0	12,4	5,33	1,2	1,159	141910
	2,5	≥ M76 x 2,5	23,0	12,4	5,02	1,51	1,444	141935
	3,0	≥ M78 x 3	23,0	12,4	4,83	1,7	1,728	141943
	3,5	≥ M85 x 3,5	23,0	12,4	4,83	1,7	2,023	141961
	4,0	≥ M85 x 4	23,0	12,4	4,63	1,9	2,308	141947
	4,5	≥ M88 x 4,5	23,0	12,4	4,03	2,5	2,602	141964
	5,0	≥ M90 x 5	23,0	12,4	4,03	2,5	2,887	141955
	6,0	≥ M100 x 6	23,0	12,4	3,23	3,3	3,467	141976
	8,0	≥ M120 x 8	23,0	12,4	3,454	3,941	4,731	150338



Type	Pitch mm	Thread Nominal Ø	DP mm	IC mm	LP1 mm	LP2 mm	G mm	S <sub>max</sub> mm	Order No. TINAMATIC
023	1-3,5	≥ 38	17,5	9,2	3,28	1,75	0,10	2,15	141996
	3-6,0*	≥ 42	17,5	9,2	2,7	3,33	0,25	3,75	142010
013	1-3,5	≥ 68	23,0	12,4	4,88	1,65	0,10	2,15	141969
	3,5-6	≥ 80	23,0	12,4	2,8	3,73	0,40	3,75	141951

\* Not suited for cutters 123462

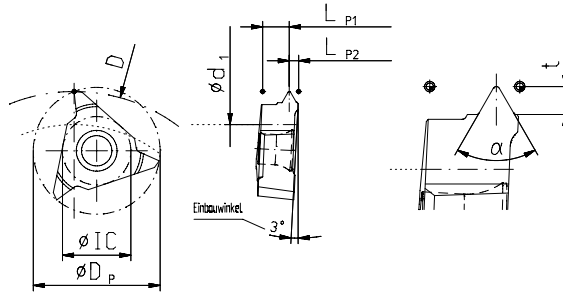


TriMILL

Thread Milling

- Insert holder see page 34-36
- Cutting data see page 166

<b>G</b>	<b>DIN 228/1</b>	<b>BSW</b>	<b>BSF</b>	<b>Typ 023</b>	<b>Typ 013</b>
<b>IR / IL</b>	<b>AR / AL</b>	Full form	55°		



Type	Pitch mm	Pitch / "	DP mm	IC mm	LP1 mm	LP2 mm	t mm	Order No. TINAMATIC
023	2,309	11	17,5	9,2	3,33	1,7	1,494	142022
013	2,309	11	23,0	12,4	4,14	2,39	1,494	141941

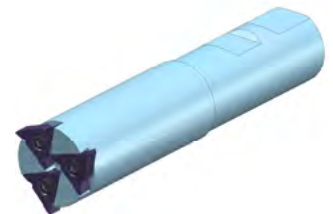
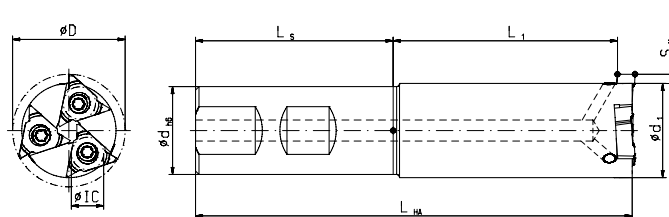


TriMILL 023

Circular Milling Tools

- Inserts see page 33-34
- Cutting data see page 166

<b>Typ 023</b>	<b>DIN 1835 Form B</b>	<b>IC 9,2</b>
Ø min. 33 mm	S max. 2,6 mm	



Order No.	D mm	d h6 mm	d1 mm	S max. mm	LHA mm	L mm	L1 mm	Inserts	Shaft
123462	32	25	26,8	2,6	124,2	119,97	61,97	3	Steel

Spare part No.	
T15 IP Screw-driver*	Screw *
111671	107547

Screw torque max. 3,8 Nm

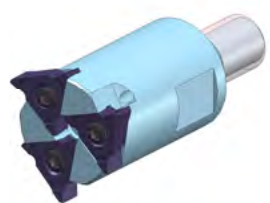
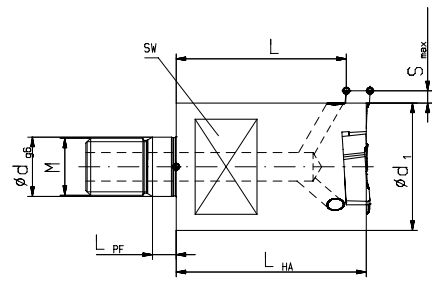
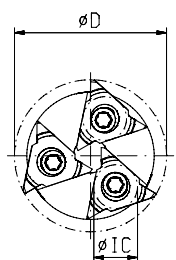
TriMILL 023

Circular Milling Tools

- Inserts see page 33-34
- Cutting data see page 166
- Tightening torques see page 29

Please adapt cutting data to overhangs length

Typ <b>023</b>		IC 9,2
Ø min. 33 mm	S max. 3,4 mm	



Order No.	D mm	d <sub>g6</sub> mm	d <sub>1</sub> mm	S <sub>max</sub> mm	L <sub>HA</sub> mm	L mm	Inserts	M
123465	32	12,5	24,3	3,8	40	34,97	3	M12

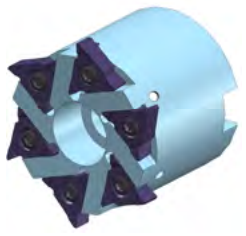
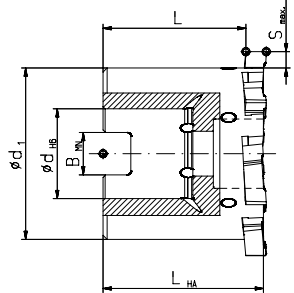
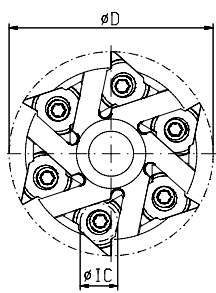
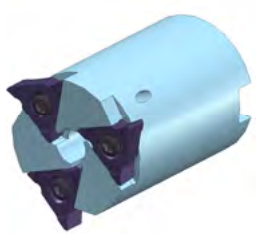
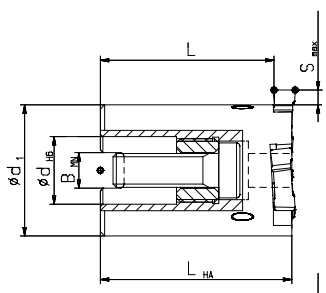
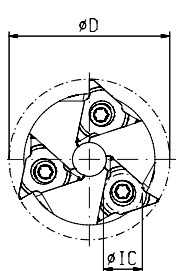
Spare part No.

T15 IP Screw-driver*	Screw *
111671	107547

Screw torque max. 3,8 Nm

Assembly instruction see page 176

Typ <b>023</b>		IC 9,2
Ø min. 40 mm	S max. 4,0 mm	



Order No.	D mm	d <sub>H6</sub> mm	d <sub>1</sub> mm	S <sub>max</sub> mm	L <sub>HA</sub> mm	L mm	B <sub>MN</sub> mm	Inserts
123464	38	16	31	3,4	45,3	40,97	8,4	3
123461 *	50	22	42	3,9	39,3	34,97	10,4	6
161485 *	63	27	55	4,0	39,3	34,97	12,4	8

Accessories

Key

Spare part No.

T15 IP Screw-driver*	Screw *
111671	107547
111671	107547
111671	107547

Screw torque max. 3,8 Nm

\* Cutter clamping screw internal hexagon


Order No.	114684
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
\* Screwdriver and clamping screw included in delivery

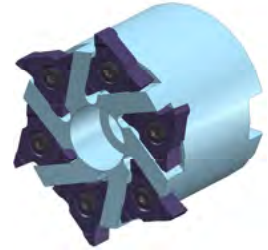
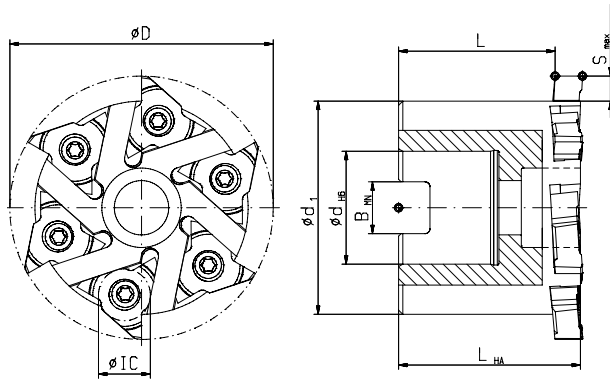
**TriMILL 013**

**Circular Milling Tools**

- Inserts see page 33-34
- Cutting data see page 166

Typ **013**  **IC 12,4**

Ø min. **65 mm**  S max. **6,0 mm** 



Order No.	D mm	dH6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts
123435	63	27	51	6	43,5	37,5	12,4	6


Spare part No.



<b>T20 IP</b> Screw-driver*	Screw *
111594	107551

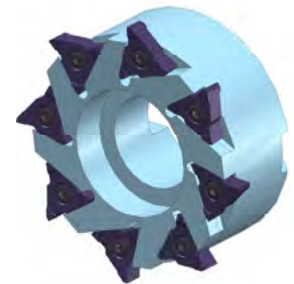
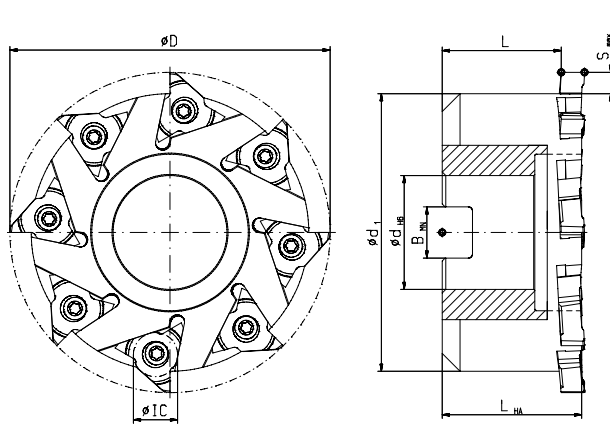
Screw torque 5,5 Nm

Cutter clamping screw internal hexagon

Order No. 114695

Typ **013**  **IC 12,4**

Ø min. **95 mm**  S max. **6,0 mm** 






Order No.	D mm	dH6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts
123436	90	32	78	6	39,2	33,5	14,4	8

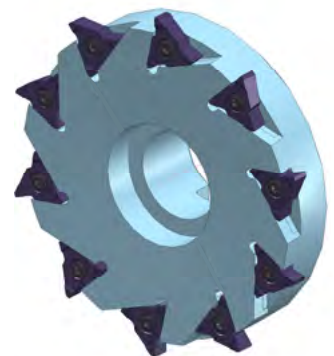
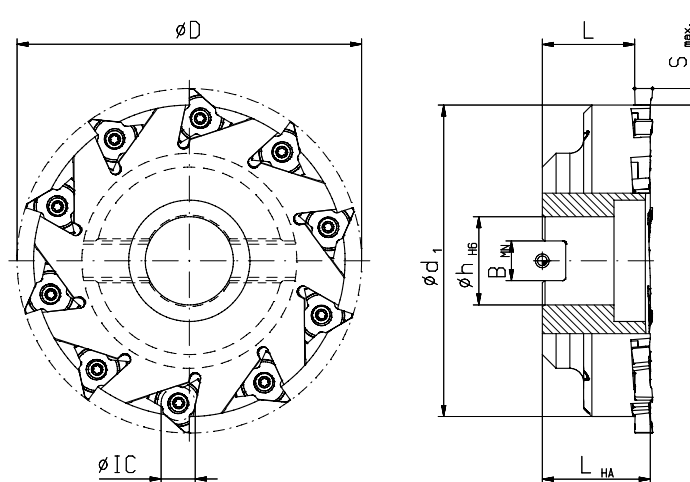
Spare part No.

<b>T20 IP</b> Screw-driver*	Screw *
111594	107551

Screw torque 5,5 Nm

Typ **013**  **IC 12,4**

Ø min. **95 mm**  S max. **6,0 mm** 



Order No.	D mm	dH6 mm	d1 mm	S max. mm	LHA mm	L mm	B MN mm	Inserts
134561	125	32	113	6,0	39,2	33,5	14,4	10

Spare part No.

<b>T20 IP</b> Screw-driver*	Screw *
111594	107551

Screw torque 5,5 Nm

\* Screwdriver and clamping screw included in delivery

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